STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Water Quality Certification for the

OLCESE WATER DISTRICT
RIO BRAVO HYDRO SEDIMENT MANAGEMENT PROJECT

SOURCE: Kern River

COUNTY: Kern

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

BY THE EXECUTIVE DIRECTOR:

I. Project Description

The Olcese Water District (District or Applicant) proposes the Rio Bravo Hydro Sediment Management Project (Project), which involves the implementation of measures to manage sediment accumulation in the Rio Bravo impoundment and canal using sediment pass through (sluicing) and mechanical sediment removal. The Project is part of the Rio Bravo Hydroelectric Project (Rio Bravo), Federal Energy Regulatory Commission (FERC) Project No. 4129.

Rio Bravo is located on the Kern River, in Kern County, approximately 13 miles northeast of the City of Bakersfield, along State Route 178. Rio Bravo is downstream of a series of hydropower projects and dams located along the Kern River. From upstream to downstream, these hydropower projects and dams include: 1) Lake Isabella Dam[1]; 2) Borel Hydroelectric Project (FERC Project No. 382)[2]; 3) Kern River 1 Hydroelectric Project (FERC Project No. 1930)[2]; and 4) Kern Canyon Hydroelectric Project (FERC Project No. 178)[3].

Rio Bravo facilities include a 24-foot-high diversion dam, a 7,500-foot-long diversion canal (Rio Bravo Canal or Canal), penstocks, and a 14-megawatt capacity powerhouse. The dam creates a 6-acre impoundment (Rio Bravo Impoundment or Impoundment) with 50 acre-feet storage capacity. A sluiceway, operated by a drain gate, is located adjacent to the Canal intake. The capacity of the sluiceway ranges from 150 to 600 cubic feet per second (cfs), depending on head pressure. The maximum diversion capacity into the Canal is 1,600 cfs. Water travels down the Canal to slide gates that serve as shutoff

[1] Lake Isabella Dam impounds Lake Isabella, which has a gross storage capacity of 568,075 acre-feet. Lake Isabella Dam is owned and operated for flood control by the United States Army Corps of Engineers.
[2] Borel Hydroelectric Project and Kern River 1 Hydroelectric Project are owned and operated by Southern California Edison Company.
[3] Kern Canyon Hydroelectric Project is owned and operated by Pacific Gas and Electric Company.

valves for the powerhouse. Water flows through the powerhouse to generate electricity and is then returned to the Kern River. The Rio Bravo bypass reach, located between the diversion dam and the powerhouse tailrace, is approximately 1.5 miles long.

Prior to 2000, sediment transport in the Kern River below Lake Isabella was restricted by Democrat Dam[4], which thereby limited sediment transport to Rio Bravo. Consequently, no sediment management activities were incorporated in the 1983 Rio Bravo FERC license or the 1986 Rio Bravo FERC license amendment. In 2000, the Democrat Dam impoundment (27-acre surface area) was drained, releasing more than 50,000 cubic yards (CY) of sediment that migrated downstream towards the Rio Bravo Impoundment. In 2011, the District estimated the capacity of the Rio Bravo Impoundment was reduced by 90 percent.

On November 27, 2012, the Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) issued a water quality certification (certification) for maintenance activities that allowed the District to suction dredge the Rio Bravo Impoundment. Dredging occurred from October 2013 through January 2014. The District removed approximately 34,000 CY of sediment from the Rio Bravo Impoundment, and placed it in a sediment disposal area adjacent to the work area (see Figure 2). Additional sediment management activities at Rio Bravo include sediment removal at the forebay trash racks in 2011 and sediment excavation from the Rio Bravo Canal (approximately 10,000 CY) in 2012.

Since 2007, Southern California Edison Company has implemented a sediment management plan and routinely releases sediment that has accumulated behind Democrat Dam. Consequently, sediment regularly migrates down the Kern River below Democrat Dam towards Rio Bravo. To address sediment accumulation in the Rio Bravo Impoundment and Canal, the District drafted the Rio Bravo Hydroelectric Project Sediment Management Plan (Plan) in 2012. The District solicited comments from state and federal resource agencies[5] on the draft Plan and incorporated agency comments into the final Plan, which was filed with FERC in 2014.

The Project implements sediment management actions that are recommended in the 2012 Plan. The purpose of the Project is to manage sediment accumulation in the Rio Bravo Impoundment and Canal to promote safe and efficient hydroelectric operations. Sediment at Rio Bravo reduces Impoundment capacity, decreases Canal capacity, impedes water flow into the Canal, and increases wear on hydraulic turbines.

The Project proposes to manage sediment at Rio Bravo by sluicing and mechanical removal. Sluicing transports sediment accumulated near the Canal intake downstream, while mechanical sediment removal relocates large amounts of accumulated sediment from the Impoundment and Canal. The District believes that the combination of sluicing and mechanical sediment removal will work synergistically to effectively manage sediment at Rio Bravo.

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[4] Democrat Dam is part of the Kern River 1 Hydroelectric Project.
[5] The District solicited comments from United States Fish and Wildlife Service, United States Department of Agriculture National Resource Conservation Service, California Department of Fish and Wildlife, Central Valley Regional Water Board, State Water Resources Control Board, and United States Army Corps of Engineers.

The Project application included two main sediment methods (sluicing and mechanical removal) that are further divided into five sediment management actions: 1) Operational Sluicing; 2) Concurrent Sluicing; 3) Turbid Flow Bypass Sluicing; 4) Impoundment Dredging; and 5) Canal Sediment Removal (Table 1). The sediment management actions and associated trigger criteria are designed to maximize sediment mobility while limiting negative impacts to biota and downstream resources. Figure 1 shows the zones of effectiveness for each sediment management action. Each sediment action is described further below.

Sluicing

Sluicing will be conducted by fully opening the sluiceway drain gate for one or more days. Water passing through the sluiceway will scour up to approximately 1,000-1,500 CY of sediment upstream of the drain gate and transport sediment-laden water downstream of the Rio Bravo Impoundment. Sediment may be temporarily stored in the plunge pool directly downstream of the dam, but is expected to move through the bypass reach in approximately five days at bankfull flow (1,500 cfs). Sluicing will provide sediment to benefit the downstream riverine ecosystem. Sluicing may occur multiple times each year. Sluicing is categorized as Operational Sluicing, Concurrent Sluicing, and Turbid Flow Bypass Sluicing:

1) Operational Sluicing is restricted to the following flow criteria to limit impacts of sediment passage to hardhead minnows. Operation Sluicing may occur when:
    a) Bypass reach flow is greater than 300 cfs in July 1-March 14
    b) Bypass reach flow is greater than 500 cfs in March 15-June 30

2) Concurrent Sluicing is timed with upstream sediment management activities (e.g., Kern River 1 Hydroelectric Project sediment management activity) to continue the downstream transport of sediment-laden water. Concurrent Sluicing shall not occur during the hardhead minnow breeding season (March 15-June 30).

3) Turbid Flow Bypass Sluicing is timed with natural turbid flow events in the Kern River. Turbid Flow Bypass Sluicing enables the transport of sediment-laden water past the Rio Bravo Impoundment, mimicking the natural sediment regime.

Mechanical Sediment Removal

Mechanical sediment removal will be conducted during the low flow period, from October 1-January 31, to minimize in-water work. Dredged sediment will be placed in already-identified disposal areas adjacent to the Kern River. Mechanical sediment removal actions include Impoundment Dredging and Canal Sediment Removal.

1) Impoundment Dredging will be conducted in the water using a Moray Portable Dredge (i.e., suction dredge) or an equivalent sediment removal tool. The suction dredge will pump water and sediment (sediment slurry) through a pipe from the Impoundment to a disposal area (Figure 2). The District estimates each Impoundment Dredging event would remove approximately 10,000 to 34,000 CY of sediment from the Rio Bravo Impoundment. Based on the 2013-2014

dredging operation, water entrained in the sediment slurry is expected to percolate into the ground and not return to the Project area. The District will attempt to dredge the entire Impoundment, but may be constrained within approximately 650 feet upstream of the dam due to natural submerged obstacles. Canal gates will be closed during dredging operations to prevent sediment from entering the canal system.

If greater than one-acre of ground disturbance is required to redistribute sediment in the disposal area, the District would seek coverage under the General Construction Permit and a Stormwater Pollution Prevention Plan, as applicable.

2) Canal Sediment Removal will be conducted when sediment in the Rio Bravo Canal is dry. Canal gates will be closed and stoplogs installed near the trash racks to prevent leakage and water flow into the Canal. Canal water will be drained through the powerhouse bypass valve (25 cfs capacity) along with any entrained fish. Fish rescues will occur as needed.

   The sediment would be allowed to dry for one to several days. Front-end loaders will enter the Canal and load approximately 5,000-10,000 CY of sediment into boxes. A crane will lift the boxes out of the Canal, and loaders will transport the sediment to staging or disposal areas. Minimum instream flow in the bypass reach will be maintained when the Canal is refilled with water. Canal water users will be notified of the Canal outage schedule at least two weeks prior to the scheduled event.

During all Project operations, the District will implement applicant-proposed measures (APMs) included in Section 5 of its application to minimize Project impacts to beneficial uses and resources (see Attachment 1). As proposed in Section 6 of its application, the District will also monitor sediment accumulation and sediment management actions to validate the sediment transport capacity curve for the Project area, and exercise adaptive management to update flow criteria for Operational Sluicing as needed (see Attachment 2).

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 Resources Control Board (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).)

Water Code section 13383 provides the State Water Board with the authority to "establish monitoring, inspection, entry, reporting and recordkeeping requirements… and [require] other information as may reasonably be required" for activities subject to water quality certification under section 401 of the Clean Water Act that involve the diversion of water for beneficial use. The State Water Board delegated this authority to the Deputy Director of the Division of Water Rights (Deputy Director), as provided for in State Water Board Resolution No. 2012-0029. In the Redelegation of Authorities Pursuant to Resolution No. 2012-0029 memo issued by the Deputy Director on October 19, 2017, this authority is redelegated to the Assistant Deputy Directors of the Division of Water Rights.

The application for certification was received on June 20, 2016[6]. 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 July 19, 2016. No comments were received. The application for certification was withdrawn and simultaneously resubmitted to the State Water Board on July 9, 2017 and December 12, 2017. State Water Board staff forwarded the portions of the application that have the potential to cause adverse water quality impacts other than specific impacts resulting from alterations to instream flows to the Central Valley Regional Water Board on July 19, 2016. (See Cal. Code Regs., tit. 23, §3855, subd. (b)(2)(B).) State Water Board staff also forwarded a draft Project certification to the Central Valley Regional Water Board on January 8, 2018. Central Valley Regional Water Board staff responded with no comments on January 12, 2018.

On October 10, 2017, the United States Army Corps of Engineers (ACOE) determined activities in waters of the United States associated with the Project are authorized by Nationwide Permit (NWP) Number 3. However, the ACOE denied authorization without prejudice until certification under section 401 of the CWA is issued or waived for Project activities. Once the District receives certification or waiver thereof, the Project activities are authorized and the work may proceed subject to the conditions of certification, and the terms and conditions of the NWP. The ACOE identification number for the Project is SPK-2014-00053.

Water Quality Control Plans and Related Authorities

The Regional Water Quality Control 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

[6] On August 29, 2016, the District filed an amendment to the Project application that revised the proposed sediment management methods and monitoring.

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 and state and federal anti-degradation requirements constitute California's water quality standards.

The Central Valley Regional Water Board adopted, and the State Water Board and the United States Environmental Protection Agency approved, the *Water Quality Control Plan for the Tulare Lake Basin* (Basin Plan). The Basin Plan identifies existing beneficial uses for the Kern River below Southern California Edison's Kern River Powerhouse No. 1 as: municipal and domestic supply; agriculture supply; industrial service supply; hydropower generation; water contact recreation; non-contact water recreation; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species; and groundwater recharge.

Construction General Permit

The State Water Board has adopted a Construction General Permit[7], which is required for activities that disturb one or more acres of soil or projects that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activities subject to the Construction General Permit include 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

The District is the lead agency for the purpose of California Environmental Quality Act (CEQA) compliance, and the State Water Board is a responsible agency (Cal. Pub. Resources Code, §21000-21177.) The District issued a Mitigated Negative Declaration (MND) for public comment on February 15, 2017. A Notice of Determination for the MND was filed by the District on June 26, 2017 (State Clearinghouse No. 2017021050).

The MND identified the following potentially significant impacts from the Project that fall within the State Water Board's purview:

- Increased turbidity from sediment management activities; and
- Adverse effects to sensitive or special-status aquatic species due to sediment management activities.

State Water Board staff considered the MND adopted by the District in connection with issuance of this certification. The proposed mitigation measures that pertain to protection of resources within the State Water Board's purview are incorporated into Conditions 5, 6, 9, and 10 of this certification to meet the requirements of Public Resources Code section 21081.6, subdivision (a)(1). Monitoring and reporting requirements addressing these mitigation measures are found in water quality certification Conditions 5, 6, 9, 10, 12, and 13, in accordance with California Code of Regulations, title 14, section 15097.

[7] Water Quality Order 2009-0009-DWQ and National Pollution Discharge Elimination System No. CAS000002, as amended by Order No. 2010-0014-DWQ and Order No. 2010-0006-DWQ and any amendments thereto.

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 a Notice of Determination within five days of issuance of this certification.

All documents and other information that constitute the record are located at the State Water Board, Division of Water Rights, 1001 I Street, Sacramento, California 95814.

III. Findings and Conclusion

When preparing the conditions in this certification, State Water Board staff reviewed and considered a wide range of information including the: (a) Applicant's certification application, including subsequent submissions; (b) the Basin Plan; (c) existing water quality conditions; (d) Project-related controllable factors; and (e) other information in the record.

In order to ensure that the Project operates to meet water quality standards as anticipated, to ensure compliance with other relevant state and federal laws, 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. 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 finds that, with the conditions and limitations imposed by this certification, the proposed Project will be protective of the water quality and consistent with other appropriate requirements of state law.

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ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT THE RIO BRAVO HYDRO SEDIMENT MANAGEMENT PROJECT will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law, if Olcese Water District complies with the following terms and conditions during the Project activities certified herein.

CONDITION 1. All proposed environmental measures described in the application for certification and supplemental application information are conditions of this certification. Notwithstanding any more specific conditions in this certification, the Applicant shall comply with the water quality protection measures and applicant proposed measures (APMs) described in the water quality certification (certification) application and its supplements (Attachment 1).

CONDITION 2. Sediment passage events (sluicing) may be conducted by fully opening the sluiceway at the Rio Bravo Diversion Dam, in accordance with the following restrictions:

a) From July 1 through March 14 if:
   - Operational Sluicing. Bypass reach flow is greater than 300 cubic feet per second (cfs)[8]; or
   - Concurrent Sluicing. A sediment management activity occurs at an upstream hydroelectric power facility (e.g., Kern River 1 Hydroelectric Project full pond drain and peak flow bypass) that causes an increase in turbidity in the Kern River below Lake Isabella. In this case, the Rio Bravo Hydroelectric Project[9] sediment passage event may be initiated no sooner than the onset of the upstream sediment management activity. Concurrent Sluicing may not be initiated after the entire turbid water plume has flowed beyond the Rio Bravo Diversion Dam.

b) Operational Sluicing. From March 15 through June 30 if the bypass reach flow is greater than 500 cfs[8].

c) Turbid Flow Bypass Sluicing. Any time natural events (e.g., rain and landslides) cause increased turbidity (turbid water plume) in the Kern River upstream of the Rio Bravo Hydroelectric Project. Unless there are safety concerns[10], sediment passage shall begin no earlier than when the turbid water plume reaches the Rio Bravo Impoundment (or Impoundment). If safety is a concern, the sediment passage event may be initiated up to 24 hours prior to onset of the natural event. If initiated prior to when the turbid water plume reaches the Impoundment, the Applicant shall provide documentation of the basis for the safety concern and the onset of the natural event (e.g., weather reports, implementation of upstream sluicing activities related to a water event, etc.) as part of the Annual Compliance

[8] The bypass reach flow shall be measured at United States Geological Survey Stream Gage Station No. 11193031.
[9] Federal Energy Regulatory Commission Project No. 4129.
[10] Opening the sluiceway is a manual operation that requires an operator to be onsite to access and clean the sluiceway trash rack and use an electric tool to open the sluiceway drain gate.

Report (Condition 13). Turbid Flow Bypass Sluicing may not be initiated after the entire turbid water plume has flowed beyond the Rio Bravo Diversion Dam.

CONDITION 3. Canal Sediment Removal and Impoundment Dredging are permitted between October 1 and January 31 (low flow period). If there is need for Canal Sediment Removal and Impoundment Dredging outside these dates, the Applicant shall request approval from the State Water Resources Control Board (State Water Board) Deputy Director for Water Rights (Deputy Director) at least 30 days prior to the proposed work date(s). The request shall include an anticipated work schedule, reason(s) work needs to be conducted outside of the low flow period, anticipated impacts to water quality and biological resources, and any additional measures proposed to address anticipated impacts to water quality or biological resources. Sediment may be removed from the Rio Bravo Impoundment and Rio Bravo Canal (or Canal) at times outside the low flow period following Deputy Director approval.

Sediment removed from the Impoundment and Canal shall be stored at existing staging and sediment disposal locations identified in Figure 2 of this certification. Sediment may be stored at alternative disposal or staging locations following Deputy Director approval.

CONDITION 4. Prior to Canal Sediment Removal or Impoundment Dredging, the Applicant shall measure sediment accumulation in the Canal and forebay to determine if mechanical sediment removal is allowable and conduct the sediment management actions, as described below. The Applicant shall comply with the sediment monitoring methods and criteria outlined in this condition, unless an alternative sediment accumulation monitoring method and criteria are approved by the Deputy Director.

Canal Sediment Removal

Accumulated sediment shall be measured in the Rio Bravo Canal at the two final curves upstream of the forebay (as shown in Figure 3). Sediment depth in the Canal shall be measured using a standard graduated metal rod at the edge of the Canal. Canal Sediment Removal may be implemented if sediment depth is greater than two feet at one or both locations.

Canal water shall be drained through the powerhouse bypass valve along with any entrained fish. Fish rescues shall be conducted, as needed (Condition 5). Once the Rio Bravo Canal is fully drained of water, sediment shall be allowed to dry for a minimum of 24 hours and Canal Sediment Removal activities shall not begin until sediment in the Canal is dry. The Applicant shall close the Canal gates and install stoplogs near the trash racks, or take other appropriate measures, to prevent leakage and water flow into the Canal. Prior to refilling the Rio Bravo Canal with water, the Applicant shall remove and properly dispose of garbage, and construction materials and fluids (e.g., gas, oil, mechanical fluid, etc.). The Applicant shall maintain minimum instream flows in the bypass reach when the Canal is refilled with water.

Impoundment Dredging

Sediment accumulation in the Rio Bravo Impoundment shall be estimated by measuring water depth (i.e., vertical distance from dam crest elevation to bottom of impoundment). Water depth shall be measured at 20 evenly-spaced locations in the Impoundment, within approximately 300 feet of the dam. Measurements may be taken with a standard graduated staff, weighted sounding device, or similar instrument. Impoundment Dredging may be implemented if water depth is less than 6 feet at more than 10 locations.

Impoundment Dredging shall be conducted in the water using a Moray Portable Dredge (i.e., suction dredge) or equivalent sediment removal tool. Use of any other method or tool for dredging must be approved by the Deputy Director, in writing, prior to implementation. The Canal gates shall be closed during Impoundment Dredging operations to prevent sediment from entering the Canal system.

CONDITION 5. A qualified biologist shall conduct pre-Project surveys of the work area within two weeks prior to the start of work and equipment staging for Impoundment Dredging and Canal Sediment Removal. The biologist shall document the identity and location of any special status or sensitive species in the work area. Equipment and work shall avoid disturbance to these areas. The Applicant shall install fencing around any special status plant species or environmentally sensitive areas within the Project area.

The biologist shall continue to conduct surveys weekly throughout the work period. The biologist will ensure all biological related best management practices and APMs are followed, and perform or oversee the relocation of species from the work area (e.g., fish rescues during canal dewatering).

Prior to completely draining the Rio Bravo Canal of water for sediment removal, the biologist shall ensure all fish and wildlife are safely removed from the Canal and released back to the Kern River unharmed.

CONDITION 6. For Impoundment Dredging, settleable material monitoring shall be performed at least daily in the stream channel at a point within 100 feet downstream of the confluence of the Rio Bravo tail race and the Kern River. If monitoring shows that settleable material exceeds 0.1 milliliter per liter (ml/L), Project activities shall cease immediately and the violation shall be reported within 24 hours to the Deputy Director and the Central Valley Regional Water Quality Water Board Executive Officer (Executive Officer). Project activities may not re-commence without written permission from the Deputy Director.

CONDITION 7. Sediment slurry from Impoundment Dredging shall be placed in disposal areas in a manner that protects the integrity of containment levees and prevents overtopping. The freeboard shall be maintained at a minimum of two feet (measured vertically). To limit objectionable odors from the sediment disposal area, the dissolved oxygen content in the upper zone (1 foot) of all standing water in the disposal area shall not be less than 1.0 milligram per liter (mg/L).

If water from dredging activities seeps back into the Kern River, the discharge shall not have a potential of hydrogen (pH) less than 6.5 or greater than 8.3. Additionally,

effluent discharge shall not have an electric conductivity greater than 1,000 micromhos per centimeter (umhos/cm).

CONDITION 8. The Applicant shall notify the Deputy Director and the Executive Officer a minimum of 45 days prior to initiating Impoundment Dredging or Canal Sediment Removal. Upon request, a work schedule shall be provided to agency staff in order for staff to be onsite during Project implementation to document compliance with this certification.

CONDITION 9. The Project shall not cause increased turbidity downstream of the Project area greater than allowable levels identified in the Basin Plan (Table A), except as provided for in this condition. Project activities shall not cause increases in turbidity that constitute nuisance or that adversely affect beneficial uses. Except for periods discussed at the end of this condition, increases in turbidity shall not exceed Basin Plan thresholds identified below:

Table A. Basin Plan Water Quality Objectives for Turbidity

Background Level or Natural Turbidity	**Downstream Turbidity (after starting construction)**
Between 0 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

NTU = Nephelometric Turbidity Units

A hand-held field meter may be used to measure turbidity, provided the meter uses a United States Environmental Protection Agency-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. For each monitoring meter used, a calibration and maintenance log shall be maintained onsite and provided to State Water Board staff upon request.

Background turbidity shall be established by the numerically highest turbidity sample taken within 12 hours prior to initiating Project-related activities. The background turbidity sample will be taken within the Rio Bravo Impoundment. To account for natural increases in turbidity upstream of the diversion dam, additional background turbidity sample(s) may be taken during sediment management activities lasting longer than 24 hours. All background and monitoring sample locations shall be determined based on access and safety needs.

Alternatively, if the entire river flow is passed through or over the diversion dam (i.e., no water is diverted to the Rio Bravo Canal) prior to a sediment management action, the Applicant may establish background turbidity in surface waters 300-500 feet downstream of the diversion dam. Such turbidity measurement shall be taken within 12 hours prior to initiating the sediment management action.

Turbidity monitoring shall occur at least daily during sediment removal actions in the stream channel at a point within 100 feet downstream of the confluence of the Rio Bravo tail race and the Kern River and in surface waters 300-500 feet downstream of the diversion dam. If monitoring shows that turbidity has exceeded the specified turbidity levels outlined in this condition, Project activities shall cease immediately

and the violation shall be reported within 24 hours to the Deputy Director and the Executive Officer. Project activities may not re-commence without written permission from the Deputy Director.

During sediment management actions, standard turbidity limits may be increased to allow turbidity up to 15 NTU over background turbidity as measured in surface waters 300-500 feet downstream from the diversion dam. The increased turbidity limit shall only apply during sediment management action implementation.

The Applicant may request modifications to Condition 9 of this certification for future turbidity monitoring conducted for sediment activities covered by this certification. The Applicant shall request any such changes as part of the Applicant's Annual Compliance Report (Condition 13) to the Deputy Director. The Applicant shall provide information that supports the requested modification to Condition 9, including details on how the modification will not impact beneficial uses. The Applicant shall comply with the turbidity requirements outlined in this condition unless otherwise approved by the Deputy Director.

Condition 9 only applies to in-water work covered under this certification (i.e., Sluicing and Impoundment Dredging). Turbidity monitoring is not required for dry sediment removal actions (Canal Sediment Removal).

CONDITION 10. Notwithstanding any more specific conditions in this certification (including Conditions 5-7, and 9), the Applicant shall implement monitoring and adaptive management as described in Attachment 2. Attachment 2 includes:

a) Continuous Monitoring for Sediment Removal Actions
   - The objectives of the monitoring are to monitor the accumulation of sediment and the effectiveness of the sediment management actions.

b) Qualitative Monitoring for Adaptive Management
   - The objective of the monitoring is to provide an overall assessment of the sediment in the Rio Bravo Impoundment, bypass reach, and Canal system following Project implementation.

c) Quantitative Monitoring for Validation of the Sediment Transport Rating Curve
   - The objective of the monitoring is to validate the sediment transport rating curve used to develop flow triggers in Condition 2.

The Deputy Director reserves the right to update Conditions 2 and 3 of this certification if the results of the monitoring described in this condition indicate that Project activities harm the beneficial uses of the Kern River below Southern California Edison's Kern River Powerhouse No. 1 or if new information suggests that the hardhead minnow breeding season is different than March 15 to June 30.

CONDITION 11. Nothing in this certification is meant to alter the Rio Bravo Hydroelectric Project license instream flow requirements. The minimum flow requirements shall be maintained throughout the Project unless the Applicant receives the necessary approvals for a change to the required flows.

CONDITION 12. Within 30 days of this certification issuance, the Applicant shall establish a stakeholder group and provide the Deputy Director with the names and

affiliations of the group's members. The stakeholder group shall be formed to facilitate communication and information-sharing regarding the Project, including Project implementation. At a minimum the stakeholder group shall include: the Applicant, agencies[11], and interested water users[12].

By March 1 each year, the Applicant shall submit a draft plan to the stakeholder group that outlines the proposed sediment management plan for the coming year, with appropriate rationale for the proposed sediment management actions.

By May 1 each year, the Applicant shall submit an Annual Sediment Management Proposal to the Deputy Director. The Annual Sediment Management Proposal shall include the proposed sediment management plan and any stakeholder comments received in relation to that year's draft plan. The Deputy Director may require modifications to the Annual Sediment Management Proposal. The Applicant may implement the Annual Sediment Management Proposal unless otherwise directed by the Deputy Director.

The Applicant shall notify the stakeholder group a minimum of two weeks prior to initiating mechanical sediment removal (Impoundment Dredging and Canal Sediment Removal) and as soon as feasible prior to or immediately following Concurrent Sluicing or Turbid Flow Bypass Sluicing.

CONDITION 13. By March 15 each year, the Applicant shall submit an Annual Compliance Report to the Deputy Director. The Annual Compliance Report shall include the following information pertaining to activities from February 1 of the previous year to February 1 of the current year:

a) Any issues related to implementation of protective measures or conditions set forth in the Project permits.

b) A summary of sediment management actions implemented along with a description of the applicable trigger (e.g., bypass reach flows, upstream sediment management activities, turbid flow conditions, sediment accumulation criteria).

- For mechanical sediment actions, the report shall include any biota relocations/mortalities, duration of work, any technical issues, turbidity monitoring data and compliance summary, estimated amount of sediment removed, and the quantitative benefit from mechanical sediment removal (i.e., approximate water storage capacity gained).
- For sluicing actions, the report shall include timing and duration of each event.

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[11] Agencies include, but are not limited to: United States Fish and Wildlife Service, United States Department of Agriculture National Resource Conservation Service, California Department of Fish and Wildlife, Central Valley Regional Water Board, State Water Board, and United States Army Corps of Engineers.

[12] Water users include, but are not limited to: public and private utilities, local water purveyors, and private parties that use Kern River water below Lake Isabella Dam.

- If no sediment management actions were implemented, the Applicant shall document that no sediment management actions were implemented.

c) Turbidity data for each sediment management event that was implemented, including information on how background turbidity was established, a map of the locations where background and compliance turbidity samples were collected, and quality control/assurance documentation for the turbidity measurements/results.

d) Settleable material monitoring data for each mechanical sediment management action that was implemented.

e) A list of stakeholder notification dates, purpose of the notification, and any comments received.

f) Documentation of compliance with Conditions 1-12 of this certification, including data and results from monitoring and measurements described in Conditions 4 and 10 of this certification.

g) Any requests, with rationale, to revise the Project or conditions of this certification, including monitoring locations, frequency, and/or methods described in this certification.

The Deputy Director may request additional information or clarification regarding the Annual Compliance Report. Upon request from State Water Board staff, the Applicant shall meet to discuss the Annual Compliance Report.

CONDITION 14. As appropriate, the Applicant shall obtain coverage under and comply with the Construction General Permit[13] and any amendments thereto.

CONDITION 15. 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 16. Project-related construction material, debris, spoils, soil, silt, sand, bark, slash, sawdust, rubbish, steel, other organic or earthen material, or any other substances which could be hazardous to aquatic life shall be prevented from entering surface waters.

CONDITION 17. All equipment shall be washed prior to transport to the Project site and must be free of sediment, debris, and foreign matter.

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[13] *Water Quality Order 2009-0009-DWQ and National Pollution Discharge Elimination System No. CAS000002*, as amended by *Order No. 2010-0014-DWQ* and *Order No. 2010-0006-DWQ* and any amendments thereto.

CONDITION 18. Any maintenance or refueling of vehicles or equipment occurring on-site will be done in a designated area with secondary containment, located away from drainage courses to prevent the runoff of storm water and the runoff of spills. 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, generators, 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 19. 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 disposed at an authorized landfill or other disposal site in compliance with State and local laws, ordinances, and regulations.

CONDITION 20. 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 21. A copy of this certification shall be provided to any contractor and all subcontractors conducting the Project 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. The Applicant, including its contractors and subcontractors, shall report any noncompliance with the conditions of this certification to the Deputy Director within 24 hours of the time when the Applicant, its contractors, or subcontractors become aware of noncompliance with the certification.

CONDITION 22. This certification requires compliance with all applicable requirements of the 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 water quality objectives, the associated Project activities shall cease immediately and the Deputy Director and the Executive Officer shall be notified. Associated activities may not resume without written approval from the Deputy Director.

CONDITION 23. Unless otherwise specified in this certification or at the request of the State Water Board, data and/or reports shall 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 Water Code section 13167.

CONDITION 24. The State Water Board reserves the authority to add to or modify the conditions of this certification: (1) to incorporate changes in technology, sampling, or methodologies; (2) if monitoring results indicate that continued operation of the Project could violate water quality objectives or impair beneficial uses; (3) 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, including load allocations developed in a total

maximum daily load developed by the State Water Board or a Regional Water Quality Control Board (Regional Water Board); (4) to coordinate the operations of this Project and other hydrologically connected water development projects, where coordination of operations is reasonably necessary to achieve water quality standards or protect beneficial uses of water.

CONDITION 25. Notwithstanding any more specific conditions in this certification, the Project shall be operated in a manner consistent with all applicable 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 shall take all reasonable measures to protect the beneficial uses of waters of the Kern River below Southern California Edison's Kern River Powerhouse No. 1 and its tributaries.

CONDITION 26. 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 & Game Code §§ 2050 2097) or the federal ESA (16 U.S. §§ 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 27. 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 28. In response to a suspected violation of any condition of this certification, the State Water Board and 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 (Water Code sections 1051, 13165,13267 and 13383). In response to any violation of the conditions of this certification, the State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.

CONDITION 29. No Project work shall commence until all necessary federal, state, and local approvals have been obtained. The Applicant is responsible for compliance with all applicable federal, state, and local laws or ordinances.

CONDITION 30. 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 Deputy Director 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 31. The Applicant shall provide State Water Board and Regional Water Board staff access to Project sites to document compliance with this certification.

CONDITION 32. The State Water Board shall provide notice and an opportunity to be heard in exercising its authority to add to or to modify any of the conditions of this certification.

CONDITION 33. This certification 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, division 3, chapter 28, article 6 (commencing with section 3867).

CONDITION 34. This 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 35. 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 36. 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 37. This certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28 and owed by the Applicant.

Eileen Sobeck
Executive Director

2/5/19
Date

Enclosures: on next page.

Enclosures:

Table 1:	Summary of Olcese Water District's Proposed Sediment Management Strategies and Actions
Figure 1:	Zones of Effectiveness for Sediment Management Actions
Figure 2:	Sediment Disposal and Storage Locations
Figure 3:	Canal Sediment Accumulation Measurement Locations
Attachment 1:	Olcese Water District Proposed Measures
Attachment 2:	Olcese Water District Proposed Monitoring and Adaptive Management

Table 1. Summary of Olcese Water District's Proposed Sediment Management Strategies and Actions

Sediment Management Practice	Selection Criteria	Flow Criteria/ Restrictions	Frequency/ Schedule	Volume of Sediment Affected/Area Affected
Sediment Sluicing Actions				
Operational Sluicing	Sediment accumulation in front of intake and entrainment in canal.	Bypass reach flow: Greater than 300 cfs (Jul 1-Mar 14); Greater than 500 cfs (Mar 15-Jun 30).	***Frequency***: One to several times annually, when flow conditions allow. ***Schedule:*** 1 day sluicing event.	***Volume of Sediment Affected***: Approx. 1,000 cubic yards (CY) per event. Not to exceed 10,000 CY annually. ***Area Affected***: Area immediately in front of the intake; bypass reach.
Concurrent Sluicing	Concurrent with upstream sediment releases including Kern River 1 Hydroelectric Project annual full pond drain and peak flow bypass	Concurrent with upstream sluicing events. Outside of hardhead breeding season (Mar 15-Jun 30).	***Frequency***: One to two times annually, depending on upstream activities. ***Schedule:*** Anytime, concurrent with upstream sluicing activities.	***Volume of Sediment Affected***: Approx. 1,000-1,500 CY + suspended load, per event. Not to exceed 10,000 CY annually. ***Area Affected***: Approx. 250-300 feet upstream of intake; bypass reach.
Turbid Flow Bypass	Turbid flow conditions imminent or in progress based on weather conditions; Increased flow & visual observation of turbid water.	Turbid flow conditions. Often concurrent with upstream sluicing events.	***Frequency***: One to several times annually, when conditions arise. ***Schedule:*** Anytime during turbid flow conditions.	***Volume of Sediment Affected***: Approx. 1,000-1,500 CY + suspended load, per event. Not to exceed 10,000 CY annually. ***Area Affected***: Approx. 250-300 feet upstream of intake; bypass reach.
Mechanical Sediment Removal Actions				
Impoundment Dredging	Build-up of sand in impoundment; Entrainment of sand into the intake and canal; and Observation of sand at the forebay.	Low flow period (Oct 1-Jan 31) when inflows are low and the powerhouse is not operating.	***Frequency***: Approx. every 1-5 years, depending on sediment accumulation rate. ***Schedule:*** Approx. 4 months; low flow period, outside of hardhead breeding season (Oct 1-Jan 31).	***Volume of Sediment Affected***: Approx. 10,000-34,000 CY per event. Not to exceed 34,000 CY annually. ***Area Affected***: Rio Bravo Impoundment (3.9 acres) and sediment disposal area (7.4 acres).

Sediment Management Practice	Selection Criteria	Flow Criteria/ Restrictions	Frequency/ Schedule	Volume of Sediment Affected/Area Affected
Canal Sediment Removal	Sand accumulation observed at the forebay; and/or on the inside of curves along canal.	Low flow period (Oct 1-Jan 31) when inflows are low and the powerhouse is not operating.	***Frequency***: As needed, when sediment build up is observed in the canal. Approx. every 5-10 years. ***Schedule:*** Approx. one to three-week construction event; during the low flow period (Oct-Jan 31).	***Volume of Sediment Affected***: Approx. 5,000-10,000 CY per event. Not to exceed 10,000 CY annually. ***Area Affected***: Rio Bravo Canal.

Figure 1. Zones of Effectiveness for Sediment Management Actions

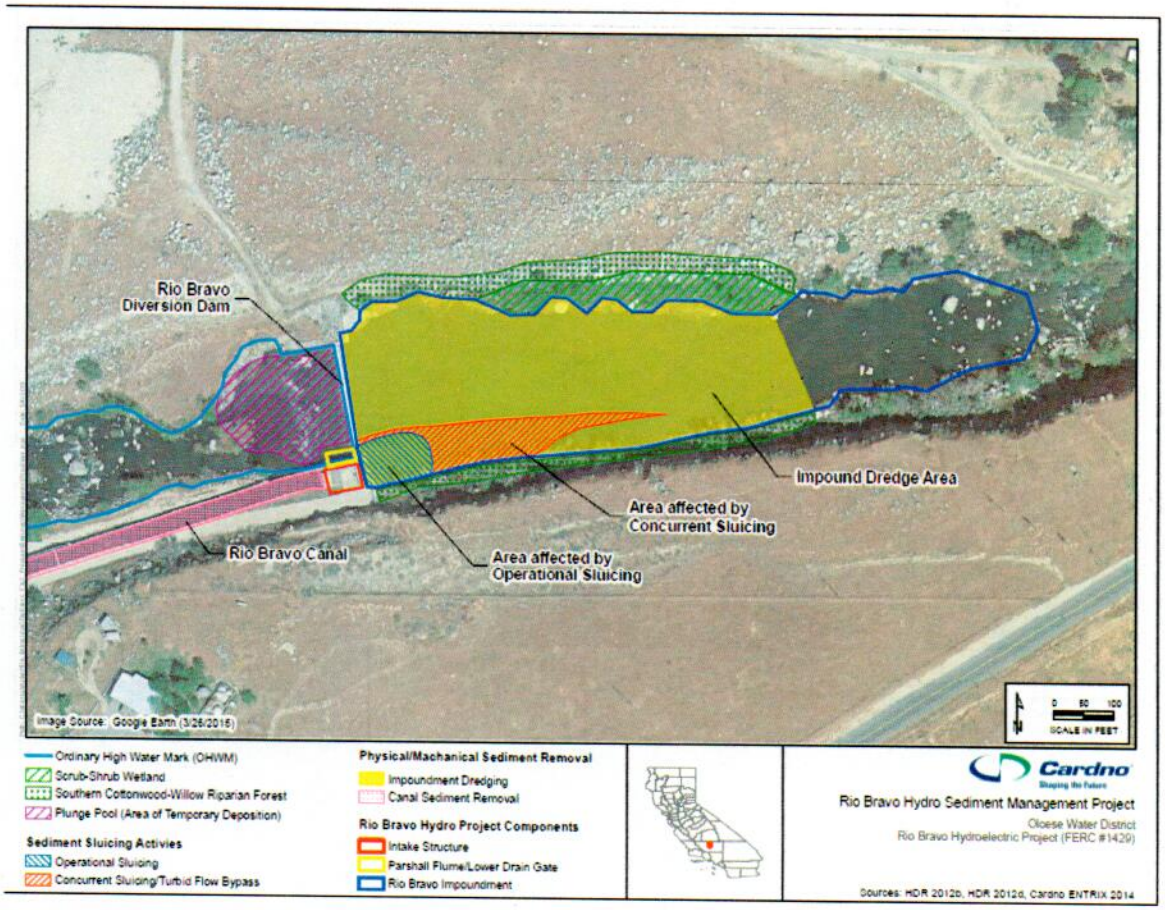

Figure 2. Sediment Disposal and Storage Locations

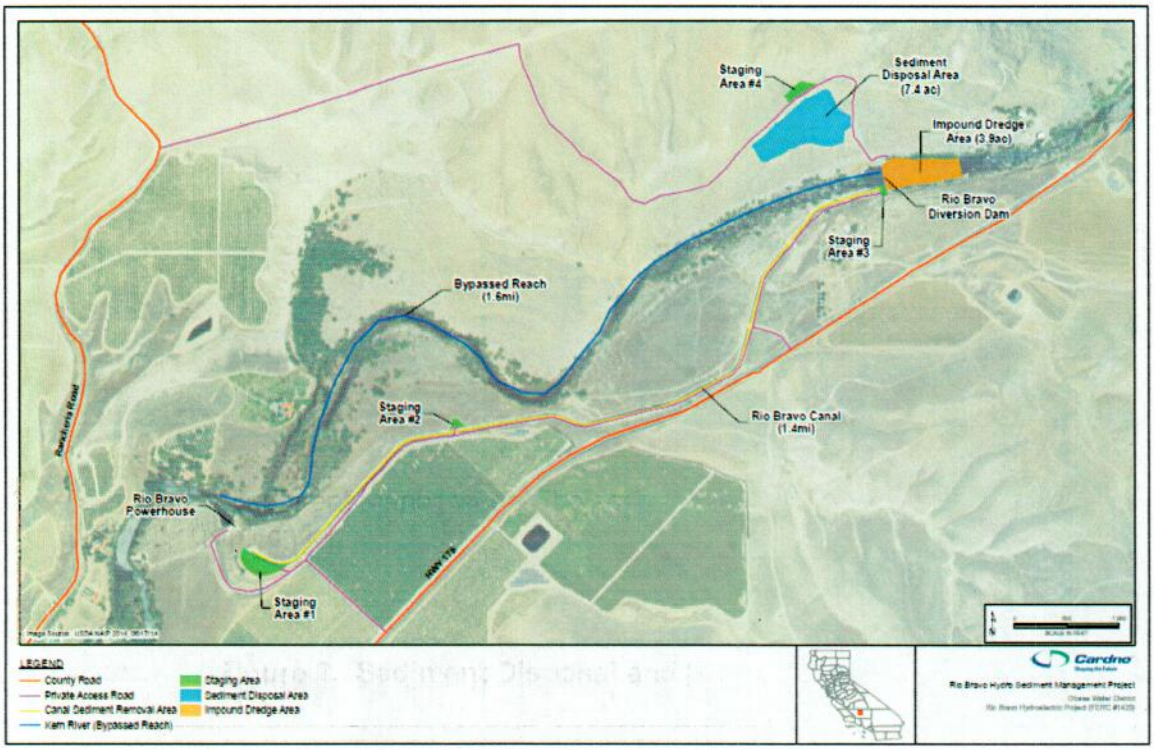

Figure 3. Canal Sediment Accumulation Measurement Locations

Attachment 1:

Olcese Water District Proposed Measures

(Excerpt from June 2016 Application for Water Quality Certification)

For the Rio Bravo Hydro Sediment Management Project

5.0 Applicant Proposed Measures Integrated into the Project Design

The Rio Bravo Hydro Sediment Management Project (Project) has been designed to limit potential impacts to biological resources (including aquatic resources, vegetation, and wildlife), water quality, and cultural resources. This section describes Best Management Practices (BMPs) and Avoidance Minimization Measures (AMMs), collectively referred to as Applicant Proposed Measures (APMs) that Olcese Water District (OWD) would utilize during applicable phases of the Project.

Some of these measures have been adapted from the *Rio Bravo Diversion Dam Maintenance Project*, implemented in 2013-2014 (HDR 2012b, 2012c). Those measures have been modified and/or augmented by OWD in order to address Project changes and additional activities including sluicing, and canal sediment removal.

OWD, or their designee, will be tasked with ensuring that the following measures are adequately communicated to all personnel on the job site; and that the following measures are complied with throughout the duration of construction. Final permit conditions may modify the measures described below.

General Construction Measures

The following general construction measures (GEN) will be incorporated into the Project design to avoid potential impacts from construction activities associated with mechanical sediment removal and sediment sluicing activities:

GEN-1. Prior to the start of construction activities, all contractors and equipment operators will complete a Worker Environmental Awareness Program (WEAP) to increase awareness of the resource values present within the Project area. Training will include a review of APMs listed in this section and included in the Project permits. The program shall be presented to all members of the construction crew prior to implementation of construction activities. New employees will receive training prior to joining the work crew. Upon completion of the orientation, all employees will sign a form stating that they attended the WEAP training, and that they are responsible for reviewing and complying with all APMs and permit conditions.

GEN-2. Work crews will be restricted to designated and clearly defined work areas.

GEN-3. Existing access roads and foot trails will be used for construction access and staging, and no new access trails will be created.

GEN-4. Staging of equipment and materials will be restricted to designated areas located on previously disturbed and/or cleared areas.

GEN-5. Any materials produced including excess soil, spoils, or construction debris will be temporarily stored in designated staging areas. Sand and other spoils will be temporarily stored until utilized by the landowner. Debris will be removed as soon as feasible for disposal at an approved disposal site.

GEN-6. Temporary sanitary facilities will be provided for site workers. Facilities will be located in a designated area away from waterways and will be properly maintained.

GEN-7. Appropriate firefighting equipment (e.g., extinguishers or shovels) shall be available on the site during all phases of construction, and appropriate fire prevention measures shall be taken to help minimize the chance of human-caused wildfires.

GEN-8. A stakeholder list "Rio Bravo Stakeholders" will be created in order to facilitate communication and information sharing between OWD, permitting agencies, and water users in the Lower Kern River canyon. An annual update to Rio Bravo Stakeholders will take place each year via email, conference call or face to face meeting.

GEN-9. Stakeholders will be informed at least 2 weeks prior to implementation of mechanical sediment removal and as soon as is feasible prior to or immediately following concurrent sluicing or turbid flow

bypass. Operational sluicing is a standard operational protocol and would not require stakeholder notification.

GEN-10. All sluicing activities will adhere to schedule and flow requirements outlined in the Rio Bravo Sediment Management Plan (SMP) and the Project description (refer to Table 1).

GEN-11. Continuous, qualitative and quantitative monitoring of sediment conditions shall occur as described in the Rio Bravo SMP and Project description (refer to Table 1).

Air Quality Measures

The following APMs related to air quality (AIR) will be implemented by OWD and/or their designated contractor.

AIR-1. Motorized equipment must comply with Air Resources Board permitting requirements.

AIR-2. Vehicle idling, noise, and odor must be minimized to the extent practicable. Vehicles and other equipment must not stand idling for more than five minutes, unless necessary for work purposes.

AIR -3. If necessary during construction activities, dust will be controlled primarily through application of water from water trucks or other methods. Water will be applied to soil surfaces, as needed, to prevent blowing dust.

AIR -4. Vehicles should not exceed 15 miles per hour (mph) on un-surfaced roads.

General Biology Measures

The following APMs related to general biological resources/special status species (BIO) will be implemented by OWD and/or their designated contractor.

BIO-1. Prior to the onset of construction activities requiring the use of heavy equipment and ground disturbance, OWD will designate a "Project Biologist" with the appropriate biological qualifications and experience to oversee the implementation of the following measures and to implement any additional conditions required by the Project permits.

BIO-2. All construction activities will be scheduled outside of the breeding bird season (February to August), to the extent feasible.

BIO-3. Most work will be completed during daylight hours. Nighttime work (and use of artificial lighting) during impoundment dredging will be minimized to the extent feasible.

BIO-4. Habitat to be avoided will be delineated as environmentally sensitive areas (ESAs). To ensure that construction equipment and personnel do not affect ESAs, orange barrier fencing will be erected at the discretion of the Project Biologist to clearly define habitats to be avoided. Signs will be installed along the orange barrier fencing stating:

Environmentally Sensitive Area – Keep Out

BIO-5. The WEAP shall cover special status species, their habitats, distribution, general behavior and ecology, their legal protection, and the penalties for violation of state and federal laws. The program will also cover all Project APMs and mitigation measures, reporting requirements, and instructions in the event that sensitive species are found during construction. Contact information for the Project Biologist or their designee will be provided. A fact sheet containing this information will be prepared and distributed to all crew members. See measure GEN-1 above.

BIO-6. The contractor will implement a litter control program during the course of construction activities. Covered trash receptacles will be placed at the Project site and the contents properly disposed of at the end of the day, and more often as necessary. No foodstuffs or associated trash, containers, etc. will be left overnight.

BIO-7. A qualified biologist will conduct a preconstruction survey of the work area prior to initiation of work for the presence of threatened, endangered, or other sensitive wildlife and plant species. The survey schedule will follow methods and conditions as outlined in the Project permits.

BIO-8. The Project Biologist or their designee will visit the Project site weekly to document compliance with these APMs. This includes inspection of ESA fencing and signage, compliance with all designated areas, implementation of litter control program, maintenance of sanitation receptacles, etc.

BIO-9. Should any threatened, endangered, or sensitive wildlife species be observed, the Project Biologist shall determine if the observed wildlife species could be impacted by the Project. If the potential impacts are unavoidable, then the Project Biologist will immediately notify the appropriate resource agency and consult if needed.

BIO-10. Workers and subcontractors will not disturb, capture, handle, or move animals, or their nests/burrows. In the unlikely event of the discovery of any sensitive species, active nest, den, or burrow, the Project Biologist or their designee will be notified as appropriate. If any wildlife is encountered during the course of Project activities, said wildlife will be allowed to freely leave the area unharmed. All dead or injured animals will be reported to the Project Biologist or their designee immediately.

BIO-11. Any large pipes, containers, etc. will be capped or sealed during the evenings to prevent entry by wildlife. All of these described items will be thoroughly inspected again immediately prior to use to ensure that no entry or nesting has occurred.

BIO-12. All vehicles will be inspected underneath after being parked and prior to movement.

BIO-13. Pets and firearms are prohibited on the job site.

Vegetation Measures

The following APMs will be incorporated into the Project design to avoid impacts to vegetation (VEG):

VEG-1. Existing access roads and foot trails and existing cleared and/or disturbed areas will be used for construction access and staging, and no new ones will be created. This will eliminate any impacts to surrounding vegetation communities.

VEG-2. No native vegetation will be trimmed or removed as part of this Project.

VEG-3. To prevent the introduction of new invasive weedy plant species, OWD will require the designated contractor to ensure that work boots, vehicles, and equipment have been cleaned prior to entering the Project area.

VEG-4. To prevent the spread or introduction of invasive or noxious weeds, any seeding efforts will use an appropriate (agency approved) erosion control seed mix consisting of native grasses and forbs. Straw bales used for sediment barriers or mulch shall be qualified weed-free.

Special Status Plant Measures

The following APMs will be incorporated into the Project design to avoid impacts to special status plants (SSP), specifically the state and federal endangered Bakersfield cactus (*Opuntia basilaris* var. *treleasei*) (OPBAT). Figure 6 depicts the current known extent of OPBAT in the vicinity of the Project, as well as proposed avoidance fencing.

SSP-1. Prior to the onset of suction dredging, areas known to support OPBAT will be resurveyed to determine the need for additional earthwork to create a berm protecting the population.

SSP-2. Areas adjacent to construction activities containing OPBAT plants will be designated as an ESA. High visibility orange fencing and silt fencing (as appropriate) shall be placed along the perimeter of the ESA at a minimum distance of 15 feet from individual cacti. The Project Biologist will determine the need for fencing based on topography and activity level. Signage shall be erected every 50 to 100 feet along the edge of the ESA with the following information:

Environmentally Sensitive Area – Keep Out
Bakersfield cactus, a federally-endangered species protected by the Endangered Species Act. Violators are subject to prosecution, fines, and imprisonment.

Aquatic Species Measures

The following APMs will be incorporated into the Project design to avoid impacts to special status aquatic (AQ) and riparian species including: the hardhead minnow (*Mylopharodon conocephalus*) (HAMI), western pond turtle (*Emys marmorata*) (WPT), and the two-striped garter snake (*Thamnophis hammondii*) (TSGS). All three species are listed as California Species of Special Concern (CSSC). Additional conditions outlined in Project permits will be implemented as required.

AQ-1. All impoundment dredging activities will take place between September 1 and January 31, which is prior to the pre-breeding season for HAMI and will thus minimize impacts to the species. Written authorization from the California Department of Fish and Wildlife (CDFW) would be necessary to extend dredging beyond this period.

AQ-2. In order to protect aquatic species within the bypassed reach including HAMI, WPT, and TSGS, sluicing activities will adhere to schedule and flow requirements outlined in the Rio Bravo SMP and Project description. See measure GEN-10 above.

AQ-3. During canal sediment removal activities that drain the canal, a qualified biologist will conduct fish recovery and monitoring in the canal immediately prior to canal draining. Stranded fish will be collected in a bucket, and returned to the Kern River. HAMI collected during the surveys will be transported in an aerated cooler and returned to the Kern River at a location with suitable pool habitat.

AQ-4. A preconstruction survey for WPT will be conducted by a qualified biologist no more than one week prior to the commencement of impoundment dredging. If WPT are identified within the Project site, they will be relocated by a qualified biologist to suitable habitat in the Kern River below the dam where they will not be impacted by Project activities.

AQ-5. Native emergent (rising out of water) vegetation such as cattails will not be impacted during dredging operations.

Blunt-Nosed Leopard Lizard Measures

The following APM will be incorporated into the Project design to avoid impacts to the California Fully Protected and state and federal endangered blunt-nosed leopard lizard (*Gambelia silius*) (BNLL):

BNLL-1. Although the Project area is not likely to support BNLL, consultation (formal or informal) with CDFW and United States Fish and Wildlife Service (USFWS) may be required for a final presence/absence determination. Prior to activities in BNLL habitat, additional surveys may be required to document absence of this species from the Project site.

Burrowing Owl Measures

The following APMs will be incorporated into the Project design to avoid impacts to burrowing owl (*Athene cunicularia*) (BUOW):

BUOW-1. A qualified biologist will conduct preconstruction clearance surveys for BUOW in all potential habitats within a 500-foot radius of the construction area. Surveys will be undertaken no more than 30 days prior to ground-disturbing activity.

BUOW-2. If preconstruction clearance surveys reveal the presence of any actively nesting BUOW, then a 250-foot buffer shall be established between the burrows and the construction area. CDFW will be consulted as necessary to develop appropriate avoidance and protection measures.

Nesting Migratory Bird Measures

Nesting birds are protected under the Migratory Bird Treaty Act (MBTA). The MBTA makes it unlawful for anyone to kill, capture, collect, posses, buy, sell, trade, ship, import, or export any migratory bird including feathers, parts, nests, or eggs. CDFW code 3503 makes it illegal to destroy any birds' nest or eggs that are protected under the MBTA during the breeding season. Code 3503.5 further protects all birds of prey, such as hawks and owls, and their eggs and nests from any form of take during the breeding season. The Project area contains nesting habitat for migratory bird species. The nesting season typically occurs between February and August, but can vary from year to year.

The measures below will be implemented by OWD and/or their designated contractor in order to ensure that nesting migratory birds (MB) are not disturbed by the Project.

MB-1. If construction is scheduled to occur outside of the typical nesting season of February 1 through August 31, no additional measures are necessary.

MB-2. If construction activities are scheduled between February 1 and August 31, preconstruction surveys will be conducted by a qualified biologist in suitable nesting habitat within 500 feet of the Project site for nesting raptors and migratory birds. The survey should take place within two weeks prior to the onset of scheduled mobilization and staging activities. The results of the survey will be submitted to the appropriate agencies for approval.

MB-3. Should active nests be found within 50 feet (or 500 feet for raptors) of scheduled active construction areas, the Project Biologist or their designee would be assigned to monitor the nest during mobilization and staging activities to determine if the activities are detrimental to the nesting process. Should the monitor determine that the nesting activities are being disturbed or disrupted, the monitor will meet with the Project Biologist, OWD, and the contractor to discuss practical alternatives to modify work activities within the nest buffer. If needed, OWD shall contact the appropriate agencies for further guidance.

MB-4. Workers and subcontractors will not disturb, capture, handle or move birds or their nests. If workers or subcontractors discover any nests, they will be reported to the Project Biologist or their designee.

San Joaquin Kit Fox Measures

The following APMs developed from standard recommendations described in the *USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to and During Ground Disturbance* (USFWS 2011) will be incorporated into the Project design to avoid impacts to San Joaquin kit fox (*Vulpes macrotis mutica*) (SJKF):

SJKF-1. Pre-activity surveys for SJKF will be conducted by a qualified biologist no less than 14 days and no more than 30 days before ground disturbing activities. Surveys should identify kit fox habitat features and the status of all dens within the Project area, evaluate kit fox use and assess the potential impact of the Project. Results of the survey must be received by the USFWS within 5 days after survey completion and prior to the start of construction activities.

SJKF-2. If natal/pupping dens are observed, the USFWS must be contacted immediately. If non-natal dens are located during surveys, the exclusion zones shall be established according to guidance provided in USFWS (2011). The following exclusion zones shall be observed (no work shall occur within them):

- Potential den - 50 feet
- Known den - 100 feet
- Atypical den - 50 feet

SJKF-3. If any dens (natal/pupping, potential, known or atypical) detected within the Project footprint during the two-week pre-activity clearance survey cannot be avoided, OWD will consult with the agencies to obtain take authorization/permit and/or permission to monitor or excavate dens.

SJKF-4. SJKF are attracted to den-like structures such as pipes and may enter stored pipes becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for SJKF before the pipe is subsequently buried, capped, or otherwise used or moved in any way. See measure BIO-11 above.

SJKF-5. To prevent inadvertent entrapment of SJKF or other animals during the construction phase of the Project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured SJKF is discovered, the Project Biologist or their designee will be notified immediately and the appropriate agencies (USFWS and CDFW) will be contacted as appropriate.

SJKF-6. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW should be contacted. If a SJKF is discovered inside a pipe, that section of pipe should not be moved until the USFWS and CDFW has been consulted.

SJKF-7. Project-related vehicles should observe a 20-mph speed limit on paved roads and a 15-mph speed limit on un-surfaced roads in all Project areas except on county roads and state and federal highways; this is particularly important at night when SJKF are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated Project areas is prohibited. See measure AIR-4 above.

SJKF-8. In SJKF habitat, the litter control program will include the following requirements: all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a week from a construction or Project site. See measure BIO-6 above.

SJKF-9. OWD will designate a representative (i.e., the Project Biologist or their designee) who will serve as the primary contact in the case of any inadvertent death, injury, or entrapment of a SJKF. The Project Biologist or their designee will be identified during the WEAP training, and their name and telephone number will be provided to the USFWS. In the case of any inadvertent death, injury, or entrapment of a SJKF, the incident shall be immediately reported Project Biologist or their designee. The Project Biologist or their designee shall contact the CDFW immediately in the case of a dead, injured or entrapped kit fox. The USFWS and CDFW shall be notified in writing within three working days of the accidental death or injury to a SJKF during Project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. See measures GEN-1 and BIO-5 above.

Cultural Resources Measures

The following APMs will be incorporated into the Project design to avoid impacts to cultural resources (CULT); e.g., stone tools, grinding stones, shells, old bottles, cans, glass, buildings and foundations, structure features, bone, shell, artifacts, or architectural remains.

CULT-1. When previously identified cultural resources are found, they must be left in place and undisturbed. If it is necessary to move or disturb them to complete the work, or if human remains are found, stop work and contact the OWD Representative.

CULT-2. Unanticipated Discovery. If any new cultural resources are encountered and site disturbance cannot be avoided during work activities, or if human remains are suspected:

- Stop all work within 100 feet of the discovery;
- Notify the OWD Representative who will contact the Cultural Resource Specialist;
- Secure location, but do not touch or remove remains and associated artifacts;
- Do not remove associated spoils or pick through them;

- Note the location and document all calls and events; and
- Keep the location confidential.

Erosion and Sediment Control (Hydrology and Water Quality) Measures

This section describes APMs to reduce or avoid the incidence of erosion and sedimentation (ERO). OWD will implement the following measures, to the extent practical, both during and after construction.

ERO-1. Standard erosion control measures will be implemented throughout construction, in order to avoid and minimize adverse effects to the water quality. Sand bags, straw bales, straw wattles, silt fence, berms, or other erosion control materials will be used as appropriate to dissipate the energy of flowing water, reduce soil erosion, and prevent sediment or other materials from inadvertently entering sensitive water bodies in the event of rain.

ERO-2. Spoils piles that will be stored for extended periods shall be covered or contained by appropriate erosion control materials; such as coil rolls, straw wattles, or equivalent, to prevent sediment runoff.

ERO-3. Temporary use areas including access roads, spoils stockpiles, etc. will be re-graded as necessary to pre-project contours following construction.

ERO-4. All disturbed soils should undergo erosion control treatment prior to October 15 and/or immediately after construction is terminated. Treatment may include temporary seeding and/or application of sterile straw mulch. Any disturbed soils on a gradient of over 30 percent will have erosion control blankets installed.

Hazardous Materials Management and Spill Prevention Measures

OWD will implement the following measures related to the storage, handling, cleanup, and disposal of hazardous materials (HAZ) and equipment maintenance and staging.

HAZ-1. Job site briefings of personnel will be held as needed to discuss and implement measures for spill prevention, reporting, and clean-up.

HAZ-2. All power equipment and vehicles will be free of petroleum residue, kept in good working order, and inspected each day for leaks prior to entry into the Project area, and immediately prior to use. Leaks will be repaired immediately or problem vehicles or equipment will be removed from the Project site.

HAZ-3. All equipment that may come in contact with a naturally occurring water body (i.e., the Kern River) shall be thoroughly cleaned of organic debris and will be free of any petroleum residue or other material deleterious to aquatic life.

HAZ-4. All equipment temporarily staged within the ordinary high water mark will be placed within secondary containment.

HAZ-5. All equipment, including motors, pumps, and generators and their associated fuel, petroleum oils, and any other hazardous materials used for the operation of motorized equipment will be stored in designated areas within the staging area. All hazardous materials will be contained in appropriate spill proof containers. Fuels will be stored in containment basins.

HAZ-6. Equipment and vehicles will be maintained, refueled, and serviced at designated sites within established staging areas. Spill containment and cleanup materials (i.e., spill kits) will be available at all maintenance/refueling sites. Secondary containment such as drip pans shall be available as needed to contain any potential spills.

HAZ-7. All spills will be cleaned up immediately and will not be buried or washed with water.

HAZ-8. OWD personnel will perform periodic inspection of the construction site and a final site inspection after construction is complete in order to certify that any spills have been reported. In the event of major spill affecting plant, wildlife, or aquatic resources, all applicable agencies will be notified as soon as feasible, as to the type, day and time, and response to all spills within their jurisdiction.

HAZ-9. Used clean-up materials, contaminated materials, and recovered spilled materials that are no longer suitable for clean-up will be stored and disposed of properly. Hazardous and non-hazardous material will be disposed of in the manner specified by the manufacturer. If fuel spills occur, affected soils will be removed and managed for proper disposal.

Attachment 2:

Olcese Water District Proposed Monitoring and Adaptive Management

(Excerpt from June 2016 Application for Water Quality Certification)

For the Rio Bravo Hydro Sediment Management Project

6.0 Monitoring and Adaptive Management

The Rio Bravo Sediment Management Plan (SMP) proposes monitoring and adaptive management to direct management decisions and to inform agencies of potential effects from implementing the Rio Bravo SMP. Therefore monitoring and adaptive management are part of the Rio Bravo Hydro Sediment Management Project (Project). Olcese Water District (OWD) proposes to conduct continuous, qualitative and quantitative monitoring in order to document changes in sediment conditions as a result of implementation of the Rio Bravo SMP. Monitoring data would provide a basis for evaluating the efficacy of the Project, and/or proposing Project modifications in accordance with adaptive management.

Continuous Monitoring for Sediment Removal Actions

Knowledge of the Rio Bravo Project facilities, and continuous monitoring during operation of the Rio Bravo Project would provide hydro managers with information on sediment conditions in the Project area. Implementation of the various sediment management actions would be determined by Rio Bravo hydro managers.

Sediment sluicing would be performed on an as needed basis (when criteria are met) to keep the area immediately in front of the intake clear of sediment. Hydro managers would continuously monitor the impoundment, intake, sand ejectors, etc. to determine if sediment is being entrained into the canal.

Sediment entrained into the canal is typically deposited on the inside of curves, and can be monitored with probing at these known locations. Standard quantitative survey methods would be utilized to quantify the sediment, such as probing across transects, or probing at regular intervals. Canal sediment removal would be initiated when OWD observes sand accumulation on the inside of curves at known locations along the canal.

Hydro managers will take the opportunity to observe the drained impoundment and assess accumulated sediment during concurrent sluicing. The need for maintenance dredging would be determined when sediment accumulation in the impoundment reduces storage capacity and it becomes economical to mobilize the dredging equipment.

Qualitative Monitoring for Adaptive Management

Sediment accumulation throughout the Rio Bravo Project has the potential to occur at three primary locations; 1) the impoundment, 2) the canal, and 3) the bypassed reach. OWD proposes to conduct monitoring for adaptive management to document changes in sediment conditions resulting from implementation of the Rio Bravo SMP. Qualitative monitoring would be conducted following above average water years, which are known to transport significant amounts of sediment and complete channel maintenance. An above average water year would be considered a year when peak inflows are greater than 2,500 cfs. Monitoring would most likely occur during the low flow period, when Project components are most visible, and/or when opportunities arise (such as during concurrent sluicing). The low flow season generally occurs from November to February.

Monitoring would provide an overall assessment of the impoundment, bypassed reach, and canal system; with a focus on identifying areas of sedimentation or other potentially unforeseen, effects during the first years of implementation of the Rio Bravo SMP. Qualitative monitoring would include the following elements:

1. Assessment of sediment conditions in the impoundment by direct observation (during concurrent sluicing) and/or a survey of water depth across one or more cross-sections, and/or a bathymetric survey of the impoundment.
2. Assessment of sediment deposited in the canal by probing at known deposition locations and/or deployment of an exploratory diver. Direct observation during periods of canal dewatering is also a possibility.
3. General assessment of sediment conditions in the bypassed reach.

Monitoring results would inform hydro managers and interested agencies about the potential effects of the Project, and would direct future implementation of sediment management actions. Qualitative monitoring for adaptive management would be re-evaluated at the completion of the quantitative monitoring phase described below.

Quantitative Monitoring for Validation of the Sediment Transport Rating Curve

A sediment transport capacity curve has been developed based upon the calculated sediment transport capacity for the Rio Bravo bypassed reach. The sediment transport rating curve and flow prescriptions would be validated by quantitative monitoring of the channel cross-sections established during the geomorphic assessment.

Quantitative monitoring would be implemented in a phased approach, including surveying of channel transects in the bypassed reach for a minimum of three water year types (wet, average and dry) in an effort to record channel response to three different flow conditions. Monitoring events would be selected to validate the plan following peak flows in the bypassed reach of 1,000 – 1,800 cfs (dry), 1,800 – 2,500 cfs (average), and greater than 2,500 cfs (wet). Note that these three flow conditions are not likely to occur in consecutive years. These data would be used to either validate or modify the flow prescriptions in the Rio Bravo SMP. Sediment management operations would be evaluated for effectiveness, and modified as needed to address observed conditions. Modifications to the Rio Bravo SMP would be made, and further monitoring would be outlined as needed to validate the changes. Quantitative monitoring to validate flow prescriptions would include the following elements.

1. Monitoring events would be selected to validate the plan following peak flows (in the bypassed reach) of 1,000 – 1,800 cfs (dry), 1,800 – 2,500 cfs (average), and greater than 2,500 cfs (wet). Note that these three flow conditions are not likely to occur in consecutive years.
2. Survey of channel cross-sections at Pool A, Riffle B, and Pool C (established as part of the Rio Bravo SMP).
3. Overall assessment of current sediment conditions in the bypassed reach, impoundment and canal; and an evaluation of conditions based on flow conditions, and past monitoring results.
4. These data would be used to either validate or modify the flow prescriptions in the Rio Bravo SMP.