

Appendix A
**2019 Final EIR Mitigation
Monitoring and Reporting Plan**

Mitigation Monitoring and Reporting Plan

Introduction

This Mitigation Monitoring and Reporting Program (MMRP) report includes mitigation measures identified in the Final Environmental Impact Report (EIR) that are required to address impacts associated with the Project. The impacts associated with this Project and required mitigation measures are summarized in this program; the full text of the impact analysis and mitigation measures is presented in the Cadiz Valley Water Conservation, Recovery, and Storage Project EIR. The EIR analyzed the impacts for the Project. This MMRP outlines the mitigation monitoring and reporting for the Project.

The MMRP is organized in a table format keyed to each impact and adopted mitigation measure. Each mitigation measure is set out in full, followed by a tabular summary of monitoring requirements. Monitoring requirements include implementation procedure, monitoring and reporting requirements, monitoring responsibility, and monitoring schedule. Implementation procedure is a checklist of actions required to successfully effectuate the mitigation measure. Monitoring and reporting action is a checklist of actions to successfully complete each implementation procedure. Monitoring responsibility names the agency responsible for monitoring enforcement. Finally, the monitoring schedule outlines the phase of the project (e.g., construction, operation, etc.) when each implementation procedure and associated monitoring and reporting action must occur. The implementation procedures, monitoring actions, and schedules identified in this MMRP provide a guide for successful implementation of mitigation measures identified in the Final EIR. The mitigation measures, procedures and actions included below have been updated (without strikethrough and underlined text) for inclusion in the Final EIR.

Cadiz Valley Water Conservation, Recovery, and Storage Project

Aesthetics

Mitigation Measure AES-1: Construction lighting shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way, and towards the construction site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the construction site.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AES-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	Before and During Construction

Mitigation Measure AES-2: Outdoor lighting shall be minimized and installed for safety and security purposes only. Outdoor lighting of Project facilities and access roads shall be shielded or recessed so that light is directed downward and/or away from adjoining properties and public rights-of-way and towards the Project site, with the goal of minimizing light trespass and glare on adjacent properties and containing light within the Project site.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AES-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	Before, During, and After Construction and Operation

Air Quality

Mitigation Measure AQ-1: Construction and operation of the proposed Project shall be conducted in compliance with applicable rules and regulations set forth by the Mojave Desert Air Quality Management District.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager and Chief Engineer	During and After Construction and Operation

Mitigation Measure AQ-2: The following dust control measures shall be implemented during construction:

- All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas.
- Watering shall take place a minimum of twice daily on unpaved/untreated roads in areas with active operations.
- Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method such as non-toxic soil binders to prevent wind-blown fugitive dust.
- On-site vehicle speed on unimproved roads shall be limited to 15 miles per hour.
- Streets adjacent to the Project site shall be kept clean and Project-related accumulated silt shall be removed.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file	SMWD General Manager and Chief Engineer	During Construction

Mitigation Measure AQ-3: The following measures shall be implemented during construction of the proposed Project:

- All equipment shall be maintained as recommended by manufacturer's manuals.
- Idling engines shall be shut down when not in use for over 15 minutes.
- Electric equipment shall be used where available from existing power lines in lieu of diesel or gasoline powered equipment.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-3 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure AQ-4: All trucks hauling dirt, sand, soil, or other loose materials are to be covered.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure AQ-4 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure AQ-5: The Project Design Feature in Chapter 6.8 of the GMMMP attached in its Updated form (Updated GMMMP) to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to verify air quality. Chapter 6.8 of the Updated GMMMP is provided in full below.

6.8 Air Quality

The EIR concludes that groundwater is not connected to the erosion potential of the Dry Lake surface soils and therefore the lowering groundwater levels beneath the Dry Lakes is not expected to increase dust generation from the Dry Lakes or otherwise affect regional air quality. Consistent with the recommendations of the Groundwater Stewardship Committee and as a conservative monitoring protocol to be conditioned by the County under its Ordinance, Cadiz will prepare a monitoring plan in consultation with the TRP to address possible sources of fugitive dust emissions (depth to groundwater, surface vegetation, surface soil chemistry) and local air quality over time (nephelometers and weather stations) to verify that the Project does not increase dust generation (i.e., particulate matter) from the Dry Lakes. The monitoring plan, at a minimum, shall set forth specific performance criteria and identify monitoring methods, the location of weather stations and nephelometers, measures to protect quality assurance and quality control, and reporting parameters. The monitoring plan shall be reviewed and approved by the County Representatives before the Project commences construction.

6.8.1 Monitoring

As described in Section 5.3, above, a network of observation wells will be established between the Project wellfield and

Bristol and Cadiz Dry Lakes (see Figures 5-1 and 5-2). Groundwater levels will be monitored in many wells on a continuous basis throughout the term of the Project, which can help identify specific depths to groundwater and hydrological connections to surface soils and vegetation.

Furthermore, Cadiz will install weather stations and four nephelometers—upwind and downwind of the Bristol and Cadiz Dry Lakes—to establish baseline data of visibility in the valley, along with providing air quality data throughout the duration of Project operations. In addition, FVMWC will conduct annual visual observations at four points on each of the Dry Lakes to record surface soil conditions. The visual observations will note soil texture and record susceptibility to wind erosion. Photographs of the soil will be taken. This data will record conditions over time at the same locations on each of these Dry Lake surfaces.

These nephelometers will provide data on a daily basis that records opacity of the air, measuring the effect of dust on visibility. Data will be collected in the early years of the Project, establishing a baseline before groundwater levels beneath the Dry Lake are affected and will continue during Project operations. Since wind velocity and dust storms are highly variable, the data will record trends over time. Data from the nephelometers will be analyzed by FVMWC, with the results of the analysis and associated data summaries submitted annually to the TRP. This data will inform the TRP on the environmental setting, augmenting the weather station data, and provide information for the long term management of the facilities in the valley. The TRP will provide recommendations over time regarding modifications to the verification data collection activities if needed.

6.8.2 Action Criteria

The decision-making process will be initiated if the action criteria are triggered. The action criteria are (1) changes in annual average or peak concentrations of airborne particulate matter as measured by nephelometers that exceed average annual or peak baseline conditions by 5 percent or more, or (2) changes in surface soil conditions on the Dry Lakes that show a degradation of soil structure and increased susceptibility to wind erosion compared to baseline conditions established through monitoring prior to Project pumping. If such changes are measured, the decision-making process will be initiated.

6.8.3 Decision-Making Process

If the action criteria is triggered, the decision-making process will be include:

- Assessment of whether the change in air quality or soil conditions are attributable to Project operations;

- If air quality changes are determined to be attributable to Project operations or if degradation of soil structure and increased susceptibility of wind erosion are determined to be attributable to Project operations, one or more of the corrective measures shall be implemented.

6.8.4 Corrective Measures

Action(s) necessary to re-establish baseline airborne particulate levels and soil structure shall include one or more of the following:

- Reduction in pumping from Project wells;
- Revision of pumping locations within the Project wellfield;
- Stoppage of groundwater extraction for a duration necessary to restore baseline air quality conditions to correct for Project impacts.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Implement Project Design Feature in Chapter 6.8 of the GMMMP.	See MM AQ-5	Enforcement: SMWD General Manager/ Chief Engineer	See MM AQ-5
2. Include Mitigation Measure AQ-5 within construction contract specifications.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Biological Resources

Mitigation Measure BIO-1: Pre-construction Surveys. Immediately prior to construction activities, pre-construction surveys that comply with USFWS protocol shall be conducted to document any and all locations of burrows and desert tortoise sightings within all proposed disturbance areas that provide potential habitat for the species. If any active burrows are located in facility construction areas, to completely avoid impact on the burrows, construction will be delayed only to be resumed after a qualified biologist¹ has determined that the tortoise has left

¹ The Qualified Biologist is “approved by the Fish and Wildlife Service or other agency as designated by the Fish and Wildlife Service to conduct activities that may result in a take of the desert tortoise including locating tortoises and their sign, recording and reporting tortoise and sign observations in accordance with approved protocol, and

the area and the burrow is inactive. Following pre-construction surveys, Mitigation Measure **BIO-2** shall be implemented to install exclusion fencing around construction areas. Construction areas fenced but inactive for more than 48-hours will be resurveyed to confirm the absence of tortoise prior to resumption of construction activity.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a qualified biologist shall prepare pre-construction surveys in coordination with USFWS.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure BIO-2: Exclusion Fencing and Monitoring. A chain-link or tortoise fence (one-inch by two-inch welded wire mesh attached to the chain-link fence, with approximately two feet above-ground and one foot buried below ground) shall be installed to exclude small wildlife species from entering the active work areas in areas of documented occurrences of special-status ground dwelling wildlife as determined during pre-construction surveys by a qualified biologist or as directed by USFWS. When crossing drainages, these temporary fences must be designed and maintained to allow storm water runoff to flow past the construction site. Fencing / barriers will be erected to completely surround all stationary construction sites (including staging areas) and will be monitored by an Authorized Biologist or Biological Monitor at all times. Along the pipeline construction corridor, temporary fencing may be used as needed and if any tortoises are observed in the surrounding area. Temporary tortoise-proof fencing may be used along the pipeline right-of-way if trenches or pits must be left open. If temporary fencing is used for this purpose it must be installed at the end of each working day. If pits and trenches are left open overnight, then ramps will be placed within them to allow animals, including tortoise to escape in the unlikely event of entrapment. Alternatively, trenches will be filled or covered when construction is not active.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a chain-link tortoise fence shall be installed as determined during pre-construction surveys conducted by the qualified biologist or as directed by USFWS.	Perform site inspections to verify contractor compliance with the restoration plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

ensuring that the effects of the project on the desert tortoise and its habitat are minimized in accordance with a biological opinion or permit. From USFWS, *Desert Tortoise Monitor and Biologist Responsibilities and Qualifications, March 2004*.

Mitigation Measure BIO-3: Desert Tortoise Avoidance and Protection Plan. A Desert Tortoise Avoidance and Protection Plan shall be developed and adopted in consultation with the USFWS and CDFG prior to construction. Elements of the plan shall include, but are not limited to the following:

- Designated Project personnel will implement the avoidance and protection plan. A Field Contact Representative will be designated to oversee compliance with all tortoise avoidance and protective measures during Project construction, operation and maintenance. The Field Contact Representative will have the authority to halt work if there is non-compliance with any of the plan measures and will do so as needed.
- Facility site preparation activities (specifically vegetation grubbing and clearing) and all construction activity in the northeastern area of the wellfield in Sections 17 and 18 will be prohibited during the species' annual periods of high activity (April through May and September through October).
- A step-by-step protocol to be implemented whenever a desert tortoise is observed by construction or operational personnel. See also Mitigation Measure **BIO-4** Temporary Construction Halt. USFWS and CDFG personnel contacts will be identified for Technical Assistance on take avoidance if needed during construction.
- Flagging and delineation requirements for located burrows and areas with tortoise activity.
- An education program for all construction employees. Program will be conducted onsite prior to the onset of construction and will be provided repeatedly as needed to ensure that all Project contractors (firms) as well as all individuals complete the training. Participation will be recorded and verified. Tortoise protection will be emphasized during all scheduled safety meetings.
- Enforcement of speed limits and checking under vehicles for tortoise prior to leaving Project areas.
- Biological monitoring requirements for all ground disturbance activities. All construction sites and activities will be monitored by Authorized Biological Monitors. An Authorized Biologist (approved by USFWS and CDFG) will plan and oversee all construction monitoring activities in the field. The authorized biologist will identify, train, and oversee biological monitors for day-to-day monitoring and reporting activities.
- To prevent increased use of the Project areas by common ravens and coyotes, implementation of measures such as trash management, removal of unnatural sources of standing water, and other means. Drilling mud pits and water discharges will be controlled to minimize the duration of standing water at any one drilling site. A clean workplace will be maintained in all areas. No trash is to be thrown on the ground or left in open containers, equipment, or truck beds. Refuse receptacles with lids will be provided for all construction personnel and are to be maintained and emptied on a regular basis and at least weekly. Trash collection

will be conducted in all construction areas as needed to keep all areas clean on a daily basis. Portable toilets will be provided and used by all construction personnel.

- At the end of construction all equipment removal will be monitored by Authorized Biologists or Biological Monitors.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a Desert Tortoise Avoidance and Protection Plan in consultation with USFWS and CDFG.	Perform site inspections to verify contractor compliance with the avoidance and protection plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Implement the avoidance and protection plan.			
3. The avoidance and protection plan shall be submitted to and adopted by the USFWS and CDFG.			

Mitigation Measure BIO-4: Temporary Construction Halt. If a desert tortoise is observed within 300 feet of construction activities or is determined by the Authorized Biologist to be in harm's way, then construction activities shall be halted in the vicinity as directed by the Authorized Biologist. Work shall only continue once the Authorized Biologist determines there is no risk to the desert tortoise.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Pre-approved qualified biologist by USFWS and/or CDFG shall be contacted in the event a desert tortoise is observed.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. Work shall be halted until no risk to the desert tortoise is determined.			

Mitigation Measure BIO-5: Pipeline Siting to Minimize Vegetation Disruption. The pipeline shall be installed within previously disturbed areas of the easement to the extent feasible. During construction, previously undisturbed areas within the pipeline alignment that are not needed for construction shall be staked and flagged to prevent construction equipment access or disturbance in these areas. The cordoned off areas shall be flagged and monitored by a qualified biologist during construction activities.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. During construction, previously undisturbed areas within the pipeline alignment shall be determined, staked, flagged, and monitored by a qualified biologist.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-6: Site Restoration Plan. A special-status species and sensitive habitat restoration plan shall be prepared prior to construction for unavoidable temporary impacts on special-status plants and sensitive habitats. The plan would include, at a minimum, the following measures:

- A salvage and replacement program for the top 12 inches of surface material and topsoil. The program shall identify soil preparation requirements, including grain size specifications that shall need to be engineered or amended on site to match to the greatest extent feasible the existing surface soil conditions.
- A salvage and replanting program for perennial special-status species.
- An invasive plant species maintenance, monitoring, and removal program.
- Success criteria that establishes yearly thresholds for growth and reestablishment of habitat.
- A five-year maintenance and monitoring plan to ensure successful implementation of the restoration plan.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a special-status species and sensitive restoration plan.	Perform site inspections to verify contractor compliance with the restoration plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. The restoration plan shall be submitted USFWS and CDFG for approval.			

Mitigation Measure BIO-7: Habitat Compensation. A habitat compensation plan would be prepared and implemented that includes at a minimum the following measure:

- Purchase of compensatory mitigation lands or credits at a USFWS and CDFG approved conservation bank at a minimum 1:1 ratio for permanent habitat loss and 0.5:1 for temporary habitat loss for preservation in perpetuity.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. A qualified biologist shall prepare a habitat compensation plan	Perform site inspections to verify contractor compliance with the compensation plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-8: Prior to construction, surveys for Mojave fringe-toed lizard shall be conducted by a qualified biologist within the sand dunes and sand fields habitats within the ARZC ROW. If Mojave fringe-toed lizards are identified in the construction zone, the area shall be fenced during construction as described in **BIO-2** to prevent lizards from entering the construction site. Once fenced, a qualified biologist shall trap the area for lizards and release captured lizards into adjacent suitable habitat as determined by the qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified biologist shall prepare a Mojave fringe-toed lizard survey.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. If Mojave fringe-toed lizards are identified in the area, fencing shall be constructed to trap the lizards for capture and release.			

Mitigation Measure BIO-9: If construction and vegetation removal is proposed for the bird nesting period of February 1 through August 31, then pre-construction surveys for nesting bird species shall begin 30 days prior to construction disturbance with subsequent weekly surveys, the last one being no more than three days prior to work initiation. The surveys shall include habitat within 300 feet (500 feet for raptors) of the construction limits. Active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and in consultation with USFWS and CDFG. This buffer zone shall be delineated in the field with flagging, stakes, or construction fencing. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. 30 days prior to construction during bird nesting season, a qualified biologist shall conduct pre-construction surveys for nesting bird species.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction (During February 1 through August 31)
2. Identified active nests shall be avoided.			
3. A non-disturbance buffer zone shall be established in consultation with USFWS and CDFG.			

Mitigation Measure BIO-10: A burrowing owl survey shall be conducted pursuant to the *Burrowing Owl Survey Protocol and Mitigation Guidelines* of the California Burrowing Owl Consortium (1993) or per the *Staff Report on Burrowing Owl Mitigation* prepared by CDFG (1995). At a minimum, this survey shall include the following:

- A pre-construction survey conducted by a qualified biologist within 30 days of the start of construction. This survey shall include two early morning surveys and two evening surveys to ensure that all owl pairs have been located.
- If pre-construction surveys are undertaken during the breeding season (February 1st through July 31st) active nest burrows should be located within 250 feet of construction zones and an appropriate buffer around them (as determined by the Project biologist) shall remain excluded from construction activities until the breeding season is over.
- During the non-breeding season (August 15th through January 31st), resident owls may be relocated to alternative habitat. Owls shall be encouraged to relocate from the construction disturbance area to off-site habitat areas and undisturbed areas of the Project site through the use of one-way doors on burrows. If ground squirrel burrows, stand pipes, and other structures that have been documented during pre-construction surveys as supporting either a nesting burrowing owl pair or resident owl are removed to accommodate the proposed Project, these structures and burrows shall be relocated or replaced on or adjacent to the Project site. Relocated and replacement structures and burrows shall be sited within suitable foraging habitat within one-half mile of the Project area as determined by the qualified biologist. Suitable development-free buffers shall be maintained between replacement nest burrows and the nearest building, pathway, parking lot, or landscaping. The relocation of resident owls shall be in conformance with all necessary State and federal permits.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING	
		RESPONSIBILITY	MONITORING SCHEDULE
A qualified biologist shall conduct a burrowing owl survey in accordance with CDFG requirements.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before (within 30 days) and During Construction

Mitigation Measure BIO-11: A qualified biologist shall conduct focused pre-construction surveys no more than two weeks prior to construction for potential American badger dens. If no potential American badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential adverse effects to the American badger:

- If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.

- If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to Project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist determines that badgers have stopped using active dens within the Project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.
- Construction activities shall not occur within 30 feet of active badger dens.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. No more than two weeks prior to construction, a qualified biologist shall conduct focused pre-construction surveys for potential American badger dens.	Perform site inspections to verify contractor compliance with the biologist recommendations and surveys. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before (two weeks) and During Construction
2. If potential dens are observed and determined inactive, a qualified biologist shall excavate the dens.			
3. If potential dens are observed and determined active, a qualified biologist shall block the entrances and then excavate the dens when it is no longer active.			

Mitigation Measure BIO-12: Prior to construction activities, winter and spring surveys shall be conducted to determine the nature of trestle use by pallid bats. Surveys shall follow the appropriate site-specific protocol as determined in coordination with CDFG.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, a qualified biologist shall conduct a winter and spring survey for pallid bats.	Perform site inspections to verify contractor compliance survey recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-13: If a special-status natal bat roost site is found within the limits of construction during pre-construction surveys, the roosts shall be staked, flagged, fenced, or otherwise clearly delineated. Roosts shall be avoided with non-disturbance buffer zones established by a qualified biologist in consultation with the USFWS and CDFG until the site is no longer in active use as a natal roost.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. If natal bat roost sites are found, a qualified biologist shall stake, flag, and fence the area.	1. Perform site inspections to verify contractor compliance with the biologist recommendations and survey. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. A qualified biologist shall establish non-disturbance buffer zones.			
3. Nest sites shall be avoided until directed otherwise by a qualified biologist.			

Mitigation Measure BIO-14: Prior to construction, construction zone limits shall be marked by a qualified biologist and shall be staked, flagged, fenced, or otherwise clearly delineated to ensure that the construction zone is limited to minimize impacts on special-status plant species. These limits shall be identified on the construction drawings. No earth-moving equipment shall be allowed outside demarcated construction zones unless pre-approval is obtained from a qualified biologist.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified biologist shall establish construction zone limits.	1. Established construction zone limits shall be identified on construction drawings.	SMWD General Manager/ Chief Engineer	Before and During Construction
	2. Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file		

Mitigation Measure BIO-15: A Waters of the State Mitigation Plan shall be prepared to include with RWQCB and CDFG permit applications. Conditions of the Mitigation Plan shall include at a minimum the following measures:

- measures to divert flows during construction,
- measures to minimize construction footprint within washes,
- measures to minimize erosion,
- measures to minimize discharge of contaminants through proper storage of chemicals and vehicle maintenance, and
- post-construction site restoration performance standards.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prepare a Water of the State Mitigation Plan with minimum requirements required by Mitigation Measure BIO-15.	Perform site inspections to verify contractor compliance with the biologist recommendations and the mitigation plan. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure BIO-16: Prior to commencement of ground disturbance activities for any component of the proposed Project, a qualified biologist/arborist shall provide an inventory of the number and size of protected species within the proposed Project's impact areas. The qualified biologist/arborist shall mark any smoke tree (*Dalea spinosa*), mesquites (*Prosopis* spp.), all species of the family Agavaceae (i.e., yucca, century plant, and nolina), creosote rings (10 feet or greater in diameter), and Joshua trees within the construction zone. Removal of these plants shall be avoided if possible.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to ground disturbance, a qualified biologist/arborist shall provide an inventory of protected tree species.	Perform site inspections to verify contractor compliance with the biologist recommendations. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Avoid removal of any smoke trees, mesquites, all species of the family Agavaceae, creosote rings, and Joshua trees.			

Mitigation Measure BIO-17: If avoidance of the species listed in **BIO-16** is not possible, these species shall be moved or replanted pursuant to the methods required in the Desert Native Plant Protection Ordinance.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure BIO-17 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Cultural Resources

Mitigation Measure CUL-1: A qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior’s Standards for professional archaeology,² shall be retained to carry out all mitigation measures related to archaeological resources.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified archaeologist shall be retained to carry out all archaeological resource mitigation measures.	All significant cultural material will be analyzed and a report will be prepared.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-2: The construction zone shall be narrowed or otherwise altered to avoid all significant historical resources, or resources treated as significant, where feasible. Significant historical resources within 100 feet of the construction zone shall be designated Environmentally Sensitive Areas and shall be marked with exclusion markers to ensure avoidance. In the case of significant historical resources dating to the historic era, the boundaries of the Environmentally Sensitive Areas shall be established around the recorded site boundaries, with the exception of resources CA-SBR-3282H and CA-SBR-3233H, where a 50-foot buffer shall be established outside of recorded site boundaries as an added protective measure to protect historic cemeteries. For significant historical resources dating to the prehistoric era, the boundaries of the ESA shall be established around the recorded site boundaries, plus an additional 50-foot buffer as an added protective measure to protect any subsurface component. Protective fencing shall not identify the protected areas as cultural resource areas in order to discourage unauthorized disturbance or collection of artifact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. A construction zone shall be established to avoid historical resources.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. A 50-foot bugger shall be established outside of recorded site boundaries.			

Mitigation Measure CUL-3: A long-term management plan shall be developed for those significant historical resources or portion(s) of resources that can be avoided during Project construction, in order to minimize future impacts during Project operation and maintenance.

² Department of the Interior, *Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation (As Amended and Annotated): Professional Qualification Standards*, http://www.nps.gov/history/local-law/arch_stnds_9.htm, accessed November 2010.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Develop a long-term management plan for historic resources.	Retain long-term management plan in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure CUL-4: If avoidance of significant historical resources is not feasible, prior to any Project-related ground disturbing activities, a detailed treatment plan shall be prepared and implemented by a qualified archaeologist. The treatment plan shall include a research design and a scope of work for data recovery of the portion(s) of the significant resource(s) to be impacted by the Project. Treatment for most resources shall consist of (but would not be not limited to) sample excavation, surface artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion of the significant resource to be impacted by the Project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, and curation of artifacts and data at an approved facility.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
A qualified archeologist shall prepare and implement a detailed treatment plan for unavoidable historical resources.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before Construction

Mitigation Measure CUL-5: Prior to construction, a qualified archaeologist shall be retained to carry out a Phase 1 cultural resources survey in those portions of the Project area where design changes have modified the proposed Project footprint (including but not limited to: the wellfield, CRA tie-in Options 2a and 2b, and any access roads, staging areas, borrow areas, and any other proposed areas of potential ground disturbance and areas where monitoring and mitigation wells have been installed), and not previously surveyed within the past 5 years. The Phase 1 survey shall identify and evaluate the significance of any potentially eligible resources that may be directly or indirectly impacted by the proposed Project, and shall take Native American comments concerning viewshed impacts into consideration. The Phase 1 Survey effort shall be documented in a Phase 1 Cultural Resources Survey report. Resources determined eligible for listing shall be subject to Mitigation Measures **CUL-1 through CUL-4** and **CUL-6**. All significant cultural resources identified in the wellfield area during surveys shall be avoided.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified archaeologist shall prepare a Phase 1 Cultural Resources Survey.	Retain survey report in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Phase I Survey shall be documented in a Phase 1 Cultural Resources Survey Report.			

Mitigation Measure CUL-6: Prior to construction, an archaeological monitor shall be retained to monitor all ground-disturbing activities, including brush clearance and grubbing, within the following areas: the proposed wellfield area; staging areas; CRA tie-in areas; and within 100 feet of all significant historical resources. The monitor shall work under the supervision of the qualified archaeologist. If ground-disturbing activities are occurring simultaneously in areas located more than 500 feet apart, additional monitors shall be retained. If so requested by the Native American community, a Native American monitor shall also monitor all ground-disturbing activities. The qualified archaeologist, in consultation with the lead agency, shall have the discretion to modify the monitoring requirements based on in-field observations of subsurface conditions. In the event that cultural resources are unearthed during ground-disturbing activities, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the find so that the find can be evaluated and appropriate treatment determined.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to construction, an archaeological monitor shall be retained.	Retain monitoring report in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-7: If archaeological resources are encountered, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist. If the qualified archaeologist determines that the resources may be significant, he or she will develop an appropriate treatment plan for the resources. Appropriate Native American representatives shall be consulted in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature.

Work may proceed on other parts of the Project site while mitigation for cultural resources is being carried out.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
If archaeological resources are encountered, construction activities shall cease until evaluated by a qualified archaeologist.	Retain monitoring report in the project file.	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure CUL-8: Prior to construction, those portions of the Project area (including the wellfield, CRA tie-in Options 2a and 2b, access roads, staging areas, and borrow areas) not previously surveyed within the past 5 years, shall be surveyed by a qualified vertebrate paleontologist, defined as one holding an advanced degree in paleontology, biology, or a related discipline, and having at least five years of professional experience. If paleontological resources are encountered, they shall be documented or recovered, and curated, as appropriate, prior to the start of construction. The evaluation will be documented in a report to be submitted for review and approval by the lead agency prior to the start of construction. The report shall also be submitted to the San Bernardino County Museum.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Prior to construction, a qualified vertebrate paleontologist shall survey areas not previously surveyed within the past 5 years.	1. Submit findings to the San Bernardino County Museum.	SMWD General Manager/ Chief Engineer	Before Construction
2. Findings shall be documented and submitted for review and approval by the lead agency.	2. Retain survey and findings reports in the project file.		

Mitigation Measure CUL-9: Prior to the start of any earth moving activity, a qualified vertebrate paleontologist shall be retained. The paleontologist shall prepare a Paleontological Mitigation and Monitoring Plan (PMMP) that shall be based on prior paleontological evaluations, including the results of the paleontological survey as described in Mitigation Measure CUL-8, and shall address pre-construction salvage and reporting; pre-construction contractor sensitivity training; procedures for paleontological resources monitoring including the identification of specific paleontological monitoring locations as defined by areas where Pleistocene age sediments may be impacted during construction; microscopic examination of samples where applicable; the evaluation, recovery, identification, and curation of fossils; and the preparation of a final mitigation report.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to ground disturbing activities, a qualified vertebrate paleontologist shall prepare a Paleontological Mitigation and Monitoring Plan (PMMP).	Retain PMMP in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure CUL-10: All earth-moving activities within those formations identified as sensitive within the PMMP shall be monitored on a full-time basis, unless the paleontologist determines that sediments are previously disturbed or there is no reason to continue monitoring in a particular area due to other depositional factors which would make fossil preservation unlikely or deemed scientifically insignificant. In the event fossils are exposed during earth moving, construction activities shall be redirected to other work areas until the procedures outlined in the PMMP have been implemented or the paleontologist determines work can resume in the vicinity of the find.

When fossils are discovered, they and associated data shall be collected quickly and professionally. Fossil salvage procedures shall include the collection of bulk matrix samples if scientifically significant microfossils are believed to be present based on field evidence. All fossils collected during monitoring shall be transferred to a secure facility for laboratory preparation and identification. Laboratory preparation shall include stabilization, matrix removal, and conservation of individual fossil specimens, as well as screenwashing and picking of bulk matrix samples. Fossils shall be prepared to the point of curation and identified by technical specialists, as needed, to the lowest possible taxonomic level. At the end of the Project, the paleontologist shall prepare a report that includes a description and inventory list of recovered fossil materials; a map showing the location of paleontological resources found in the field; determinations of sensitivity and significance; and a statement that Project impacts to paleontological resources have been mitigated. The results of the paleontological surveys, construction monitoring, and subsequent laboratory work shall be compiled in a final paleontological mitigation report authored by the qualified paleontologist for the Project. The final report shall include all Project data and a copy of the receipt of specimens from the paleontological repository.

Following preparation, the fossils and associated data and a copy of the final paleontological mitigation report shall be transferred to a public museum (paleontological repository) where they will be available for the benefit of current and future generations.

IMPLEMENTATION PROCEDURE		MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1.	A qualified vertebrate paleontologist shall monitor areas identified in the PMMP as sensitive unless otherwise determined by the paleontologist.	1. Submit findings to a public museum (paleontological repository).	SMWD General Manager/ Chief Engineer	Before, During, and After Construction
2.	Recommendations identified in the PMMP shall be implemented as required.	2. Perform site inspections to verify contractor compliance. Retain survey, findings, and monitoring reports in the project file.		

Mitigation Measure CUL-11: If human remains are uncovered during Project construction, all work in the vicinity of the find shall be halted and the County Coroner will be contacted to evaluate the remains and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the *CEQA Guidelines*. If the County Coroner determines that the remains are Native American, the NAHC shall be contacted, in accordance with Health and Safety Code Section 7050.5, subdivision (c) and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological

standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this Section (PRC 5097.98) with the most likely descendants taking into consideration their recommendations, and developing a treatment plan, taking into account the possibility of multiple human remains.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. If human remains are discovered, all work shall cease and the County Coroner shall be contacted.	Retain survey and findings reports in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. If remains are Native American, the NAHC shall be contacted.			

Geology, Soils, Seismicity, and Mineral Resources

Mitigation Measure GEO-1: The project design features in Chapter 6.3 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impact for land subsidence. Chapter 6.3 of the Updated GMMMP is provided in full below.

6.3 Land Subsidence

Twenty land survey benchmarks will be established and surveyed by a licensed land surveyor on an annual basis to identify and quantify potential subsidence within the Project area (see Figures 5-1 and 5-2). Three extensometers will be constructed in areas of projected subsidence (see Figure 5-2). The extensometers, which would be monitored continuously from installation through the post-operational period, would verify if the land surface changes (also potentially identified from land surveys and InSAR satellite data obtained and analyzed every 5 years through the post-operational period) are due to (1) subsidence due to groundwater withdrawal; or (2) other mechanisms (e.g. regional tectonic movement).

6.3.1 Action Criteria

The decision-making process will be initiated if either of the action criteria is triggered. The action criteria are: 1) a trend in subsidence that would result in a decline in the ground surface elevation of more than 0.3 feet within 10 years when compared to baseline Project conditions; or 2) a trend in subsidence which, if continued, would be of a magnitude within 10 years that impacts existing infrastructure within the Project area. The magnitude for the railroad tracks is more than one inch vertically over 62 feet linearly along the existing railroad tracks.

6.3.2 *Decision-Making Process*

If either of the action criteria is triggered, the decision-making process will include:

- Assessment as to whether the subsidence is attributable to Project operations;
- If the subsidence is determined to be attributable to Project operations, then an assessment will be made to determine whether the subsidence constitutes a potential adverse impact to the aquifer or surface uses. Potential adverse impacts include potential damage to surface structures as a result of differential settlement or fissuring, general subsidence sufficient to alter natural drainage patterns or cause damage to structures, or a non-recoverable loss of aquifer storage capacity that affects the beneficial uses of the storage capacity of the aquifer system;
- If no such significant adverse impacts to critical resources are identified, potential actions may include:
 - No action;
 - Proposed refinements to the action criteria;
 - Additional verification monitoring, including a field reconnaissance to assess and detect any differential settlement; or
 - Proposed revisions to the benchmark survey and/or InSAR monitoring frequency.
 - If the subsidence is determined to be attributable to Project operations and the subsidence is determined to constitute a potential adverse impact to the aquifer or surface uses then one or more of the corrective measures set forth in Section 6.3.3 shall be implemented.

6.3.3 *Corrective Measures*

Corrective measures that shall be implemented to repair damaged structures and/or arrest the subsidence shall include one or more of the following:

- Repairing any structures damaged as a result of subsidence attributable to Project operations;
- Entering into a mitigation agreement with any impacted party(s).

If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified to arrest the subsidence. For the purposes of these action criteria, “ineffective” shall be defined as a corrective measure that when put

into place did not meet the objective set forth in the corrective action, i.e. to repair damaged structures and arrest the subsidence. “Infeasible” is a corrective measure which cannot be implemented due to cost, technical challenges, or legal restraints. Modifications to Project operations shall include one or more of the following:

- Reduction in pumping from Project well(s);
- Revision or reconfiguration of pumping locations within the Project wellfield; or
- Stoppage of groundwater extraction for a duration necessary to correct the adverse impact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure GEO-1 within construction contract specifications.	See GEO-1	Enforcement: SIMWD General Manager/ Chief Engineer	See GEO-1
2. Implement Project Design Features in Chapter 6.3 of the GMMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Greenhouse Gas Emissions

Mitigation Measure GHG-1: Within 90 days of completion of construction of the Groundwater Conservation and Recovery Component of the Project, carbon offset credits shall be purchased from the Climate Registry, or other source that is approved by CARB as being consistent with the policies and guidelines of the California Global Warming Solution Act of 2006 (AB 32), or that is approved by a local or regional agency with jurisdiction over or within San Bernardino County as local emissions credits under a GHG reduction plan or similar program, in sufficient quantity to reduce the Project’s first year total (direct plus indirect) GHG emissions below 10,000 MTCO₂e per year. The first year offsets identified in the binding agreement shall be purchased and retired no later than 12 calendar months from completion of the first full year of operation. The estimated amount of offsets required is 18,153 MTCO₂e per year (i.e., 28,153 – 10,000 MTCO₂e per year) if the wellfield and intermediate pump station are powered by natural gas. This volume may be reduced if less power is needed, solar power is provided, or diesel powered wells are retired at the Cadiz Ranch that would count as an offset.

If electricity from the grid is used, the required offsets are estimated to be 5,810 MTCO₂e per year (i.e., 15,810 – 10,000 MTCO₂e per year). Since offsets for off-site electricity generation is the responsibility of the energy generators, the Project may obtain verification of these offsets or purchase additional offsets as needed.

A GHG inventory shall be completed which will be verified by an accredited third-party verification body and reported to the Climate Registry. The Applicant shall purchase and retire such additional carbon offset credits (due to a net increase in emissions from the first full year of operations) as may be needed each year to ensure that the Project's total (direct plus indirect) GHG emissions are offset below the benchmark of 10,000 MTCO₂e above existing 2011 conditions.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Within 90 days of construction completion of the Groundwater Conservation and Recovery Component, carbon offset credits shall be purchased from the Climate Registry or other source approved by CARB.	Retain records in the project file.	SMWD General Manager/ Chief Engineer	After Construction (within 90 days)
2. An accredited third-party verification body shall complete a GHG inventory and report to the Climate Registry.			

If after further environmental review Phase II is approved, then **Mitigation Measure GHG-2** would be imposed.

Mitigation Measure GHG-2: Imported Water Storage Component. Within 90 days of completion of Project construction, carbon offset credits shall be purchased from The Climate Registry, or other source that is approved by CARB as being consistent with the policies and guidelines of the California Global Warming Solution Act of 2006 (AB 32), or that is approved by a local or regional agency with jurisdiction over or within San Bernardino County as local emission credits under a GHG Reduction Plan or similar program, in sufficient quantity to reduce the Project's total (direct plus indirect) GHG emissions below 10,000 MTCO₂e per year, and each year purchase additional carbon offset credits (due to a net increase in emissions from first year operations) as may be needed to reduce emissions below 10,000 MTCO₂e.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Within 90 days of construction completion of the Groundwater Conservation and Recovery Component, carbon offset credits shall be purchased from the Climate Registry or other source approved by CARB.	Retain records in the project file.	SMWD General Manager/ Chief Engineer	After Construction (within 90 days)
2. An accredited third-party verification body shall complete a GHG inventory and report to the Climate Registry.			

Hazards and Hazardous Materials

Mitigation Measure HAZ-1: On-site materials storage, fueling, and vehicle maintenance areas shall be equipped with secondary containment and spill containment equipment. Storage, handling, and disposal of hazardous materials shall comply with applicable regulations including submittal of a Business Plan to the County Fire Department.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure HAZ-1 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure HAZ-2: If excavation uncovers contaminated materials, excavation activities shall cease in the contaminated area. Soil samples shall be collected to characterize the soils and contamination. The CUPA shall be notified of the sample results. The construction contractor shall stockpile contaminated soils on plastic sheeting as necessary to prevent releasing contamination into the ground and shall ultimately dispose of the materials in coordination with the CUPA in compliance with hazardous material regulations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure HAZ-2 within construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file	SMWD General Manager/ Chief Engineer	During Construction

Mitigation Measure HAZ-3: No construction or other Project activities shall occur at the Cadiz Sonic Lake Target No. 5 and No. 9 areas, until the USACE clears the proposed locations for the potential presence of unexploded ordnance from historical military uses. In the event that the USACE encounters unexploded ordnance, the USACE is obligated to remove the unexploded ordnance under their ongoing investigations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Prior to installation of Project elements, the USACE shall clear the proposed locations for potential presence of unexploded ordnance.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Hydrology and Water Quality

Mitigation Measure HYDRO-1: A construction and maintenance Storm Water Pollution Prevention Plan shall be prepared and included in construction specifications and Operations and Maintenance Manual (OMM) for the Project. At a minimum, the plan shall include the following required Best Management Practices or equivalent measures:

- Install temporary sediment fences or straw waddles at stream crossings or washes to prevent erosion and sedimentation during construction, including at each ARZC railroad trestle along the pipeline alignment.
- Establish designated fueling areas equipped with secondary containment,
- Require drip-pans under all idle equipment on the construction sites,
- Ensure that spill prevention kits are present at all construction sites.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include preparation and implementation of a SWPPP, as required by state law.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction
2. Keep SWPPP in the project file at the work site.			

Mitigation Measure HYDRO-2: Project Design Feature 6.4 found in Chapter 6.4 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impacts for the migration of the saline/freshwater water interface to adversely affect groundwater quality. Chapter 6.4 of the Updated GMMMP is provided in full below.

6.4 Induced Flow of Lower-Quality Water from Bristol and Cadiz Dry Lakes

Saline water migration is allowed up to and not to exceed 6,000 feet from the baseline location of the saline-freshwater interface. To prevent migration of saline groundwater beyond 6,000 feet, FVMWC will implement mitigation measures that may include injection or extraction wells or other physical means to maintain the saline-freshwater interface. If these physical measures prove ineffective, reductions in Project pumping will be required (see Sections 6.4.3, below).

6.4.1 Monitoring

To monitor the influence of the Project's operation on the migration of the saline-freshwater interface located between the Project wellfield and the Bristol and Cadiz Dry Lakes, a network of "cluster type" observation wells will be established between the Project wellfield and the saline-freshwater interface. Groundwater TDS concentrations in the well clusters will be monitored on a quarterly basis during the pre-operational period of the Project, semi-annually throughout the operational period, and annually during the post-operational period of the Project. Of the monitoring well network, SCE Well no. 5 and SCE Well no. 11, along with other newly installed well clusters located between the interface and the Project wellfield will be located such that they are appropriate to serve as "sentinel" wells to determine whether there is a progressive migration of the saline-freshwater interface. The locations of SCE Well no. 5, SCE Well no. 11, and the other sentinel well clusters are shown in Figures 5-1 and 5-2.

6.4.2 Action Criteria

The decision-making process will be initiated if the action criterion is triggered. The action criterion is a migration of the interface, as measured by an increase in TDS concentration in excess of 600 mg/L in any cluster or observation well located within a distance of 6,000 feet from pre-Project locations of the interface.

6.4.3 Decision-Making Process

If the action criterion is triggered, the decision-making process will include:

- Assessment of whether the increased TDS concentration or migration of the saline-freshwater interface is attributable to Project pumping;
- Assessment of trends and updated projections of whether and when the saline-freshwater interface is expected to migrate 6,000 feet from its baseline location;
- If the increased TDS concentration within the monitoring wells is determined to be attributable to the Project and the saline-freshwater interface is expected to migrate more than 6,000 feet from its baseline location within 10 years, then one or more of the corrective measures set forth in Section 6.4.3 shall be implemented.

6.4.4 Corrective Measures

Corrective measures that will be implemented to eliminate the further migration of saline groundwater towards the Project wellfield may include the following:

• Installing one or more extraction well(s) or injection well(s) at the northeastern edge of Bristol Playa and/or north of Cadiz Playa where the salt mining source wells are located to maintain the saline-freshwater interface within its 6,000-foot limit subject to the same mitigation measures imposed on the Project well-field as set forth in the SMWD Mitigation Monitoring and Reporting Program (see Figures 5-1 and 5-2). If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified to eliminate the further migration of saline groundwater towards the Project wellfield. Modifications to Project operations will include one or more of the following: • Reduction in pumping from Project wells; • Revision of pumping locations within the Project wellfield; or • Stoppage of groundwater extraction for a duration necessary to correct the predicted impact.
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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-2 in the construction contract specification.	See MM HYDRO-2	Enforcement: SMWD General Manager/Chief Engineer	See MM HYDRO-2
2. Implement Project Design Features in Chapter 6.4 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Mitigation Measure HYDRO-3: Project design features in Chapter 6.2 of the GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address potential impacts to Third Party wells. Chapter 6.2 of the Updated GMMMP is provided in full below.

6.2 Third-Party Wells

It is the intent of the Project to operate without adverse material impacts to wells owned by neighboring landowners in the vicinity of the Project area, and those operated in conjunction with salt mining operations on the Bristol or Cadiz Dry Lakes. To avoid such potential impacts, the groundwater monitoring network will include monitoring wells located in and around the wellfield, near neighboring landholdings, and on and adjacent to the Dry Lakes (see Figures 5-1 and 5-2). Groundwater levels will be monitored on a continuous to semi-annual basis (see Table 5-1) during the preoperational and

operational periods, then annually during the post-operational period. Water quality will be monitored on a quarterly to annual basis during the preoperational period, annually during the operational period of the Project, and triennially during the post-operational period (see Table 5-1). Further, FVMWC shall monitor static (non-pumping) water levels within any third-party wells that are representative of the local groundwater impacts and located within the northern Bristol/Cadiz Sub-Basin or elsewhere in the Fenner Watershed. Such monitoring of third-party wells will be performed on a semi-annual basis during the pre-operational and operational periods, then annually during the post-operational period as established in the Closure Plan.

6.2.1 Action Criteria

The decision-making process will be initiated if any of the action criteria are triggered. The action criteria are: 1) a decline of static water levels of more than twenty feet from pre-Project static water levels or to a degree in which the reduction in static water levels results in an inability to meet existing the production of any third-party well drawing water from the northern Bristol/Cadiz Sub-Basin or elsewhere in the Fenner Watershed; and 2) the receipt of a written complaint from one or more well owner(s) regarding decreased groundwater production yield, degraded water quality, or increased pumping costs submitted by neighboring landowners or the salt mining operators on the Bristol and Cadiz Dry Lakes. Any written complaint by a well owner in accordance with this action criterion shall be directed to FVMWC.

6.2.2 Decision-Making Process

If any of the action criteria are triggered, the decision-making process will include:

- If a written complaint with a documented change in water level as provided for in Section 6.2.1 is received from a third-party well owner located within the area of influence (see Figure 5-1), FVMWC will immediately implement Corrective Measure 6.2.3.1, below;
- Assessment of whether water level changes, decreased yields, increased pumping costs, and/or degraded water quality in the third-party wells are attributable to Project operations or other causes;
- If such water level changes, decreased yields, increased pumping costs and/or degraded water quality are determined to not be attributable to Project operations, then FVMWC would discontinue any interim arrangement to provide water as set forth in Section 6.2.3.1;
- If such water level changes, decreased yields, increased pumping costs and/or degraded water quality are

determined to be attributable to Project operations, then one or more of the corrective measures set forth in Section 6.2.3 shall be implemented.

6.2.3 Corrective Measures

6.2.3.1 Interim Water Supply. If a written complaint as provided for in Section 6.2.1 is received from a third-party well owner located within the area described above (see Figure 5-1), FVMWC will arrange for an immediate interim supply of water to the third-party well owner until the decision-making process is complete in an amount necessary to fully offset any reduced yield to the third-party well owner, as compared to the yield from the impacted well prior to Project operations or, if the impacted well was installed after Project operations commenced, then as compared to the yield of the well immediately after installation

6.2.3.2 Further Corrective Measures. If any of the Action Criteria set forth in 6.2.1 are triggered and the impacts are determined to be attributable to Project operations, one or more of the following further corrective measures shall be implemented to correct the impairment to the beneficial use of the groundwater:

- Continued provision of substitute water supplies;
- Deepening or otherwise improving the efficiency of the impacted well(s);
- Blending of impacted well water with another local source;
- Constructing replacement well(s) on disturbed land subject to the same mitigation measures imposed on the Project wellfield as set forth in the SMWD's Mitigation Monitoring and Reporting Program;
- Paying the impacted third-party well owner for any increased material pumping costs incurred by the well owner; or
- Entering into a mitigation agreement with the impacted third-party well owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-3 in the construction contract specification.	See MM HYDRO-3.	Enforcement: SMWD General Manager/ Chief Engineer	See MM HYDRO-3
2. Implement project design features in Chapter 6.2 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Mitigation Measure HYDRO-4: All construction and operation plans shall be prepared that identify standard best management practices (BMPs) to control drainage around the Project infrastructure including but not limited to wellpads, pump stations, an energy generation facility, air relief valves, forebay and equalization storage facilities, spreading basins, and railcar wash areas. The BMPs shall include placing facility and well pads and above-ground appurtenant facilities outside of visible drainages; and grading well pads to disperse runoff from the site in a manner that minimizes scour potential of storm water. BMPs include the use of physical barriers to prevent or manage seepage, detain runoff and prevent erosion during construction and operation and may include the use of siltation straw wattles, hay bales, setbacks and buffers, and other similar methods that reduce the energy in surface water flow.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure HYDRO-4 in the construction contract specification.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Construction plans shall include BMPs to control drainage around the Project infrastructure.			

Mineral Resources

Mitigation Measure MIN-1: The Project Design Features in Chapter 6.5 of the Updated GMMMP attached to the Final EIR Vol. 7, Appendix B1 Updated GMMMP shall be implemented to address the potential impact for groundwater level drawdown on existing salt production operations. Chapter 6.5 of the Updated GMMMP is provided in full below.

6.5 Brine Resources Underlying Bristol and Cadiz Dry Lakes

To monitor potential Project impacts on the salt mining operations on the Bristol and Cadiz Dry Lakes, a network of “cluster type” monitoring wells will be established between the Project wellfield and the margins of the Dry Lakes (see

Figures 5-1 and 5-2). Groundwater levels will be monitored on a continuous basis throughout the operational and post-operational term of the Project.

6.5.1 Action Criteria

The decision-making process will be initiated if either of the action criteria is triggered. The action criteria are:

- A declining trend in groundwater or brine water levels of greater than 50 percent of either (a) the water column above the intake of any of the salt mining operators' wells, or (b) the average depth of brine water level within the brine supply trenches operated by the salt mining operators. Changes in such groundwater or brine water levels, shall be determined by monitoring changes in the static water levels within the network of clustered monitoring wells identified above, as changes in the static water levels within these monitoring wells are correlated with the groundwater or brine water levels within the salt mining operator's wells and brine supply trenches; or
- The receipt of a written complaint from a salt mining operator regarding decreased groundwater production yield or increased pumping costs from one or more of its wells, or decreased water levels within its brine supply trenches. Any written complaint by a salt mining operator in accordance with this action criteria shall be directed to FVMWC.

6.5.2 Decision-Making Process

If either of the action criteria is triggered, the decision-making process will include:

- Assessment of whether the change in groundwater/brine level in excess of the action criteria is attributable to Project operations;
- If the change in groundwater/brine water level in excess of the action criteria is determined to be attributable to Project operations, then an assessment will be made to determine whether the groundwater/brine level change constitutes a potential adverse impact to one or more of the salt mining operations on the Dry Lakes. Adverse impacts include changes to brine chemistry or yields from existing brine production wells or brine supply trenches attributable to Project operations. If no such impacts are identified, potential actions may include:
 - Continued or additional verification monitoring;

- Proposed refinements to the action criteria;
- Proposed revision to the monitoring frequency at the observation well clusters at the margins of the Dry Lakes;
- If the decline in groundwater/brine water level(s) approaching the action criteria is determined to be attributable to Project operations, and the changes constitute a potential adverse impact to one or more of the salt mining operations on the Dry Lakes, then one or more of the corrective measures set forth in Section 6.5.3 shall be implemented.

6.5.3 Corrective Measures

Action(s) necessary to mitigate changes to brine chemistry or yields from existing brine production wells or brine supply trenches attributable to Project operations, and thereby maintain or restore the beneficial use of the groundwater/brine water by the salt mining operations, shall include one or more of the following:

- Compensating the mining operator(s) for the additional costs of pumping;
- Installing one or more brine extraction well(s) and/or injection well(s) where the salt mining source wells are located subject to the same mitigation measures imposed on the Project well-field as set forth in the SMWD Mitigation Monitoring and Reporting Program (see Figure 5-1); or
- Entering into a mitigation agreement with the salt mining operator(s).

If the forgoing corrective measures are ineffective or infeasible, Project operations shall be modified until adverse impacts to the salt mining operations are eliminated. For the purposes of these action criteria, “ineffective” shall be defined as a corrective measure that when put into place did not meet the objective set forth in the corrective action, i.e., to maintain or restore the beneficial use of the groundwater/brine water by the salt mining operations. “Infeasible” is a corrective measure which cannot be implemented due to cost, technical challenges, or environmental and permitting issues as defined under CEQA. Modifications to Project operations shall include one or more of the following:

- Reduction in pumping from Project wells;
- Revision of pumping locations within the Project wellfield; or
- Stoppage of groundwater extraction for a duration necessary to correct the predicted impact.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure MIN-1 in the operations specification.	See MM MIN-1	Enforcement: SMWD General Manager/ Chief Engineer	See MM MIN-1
2. Implement Project Design Feature in Chapter 6.5 of the GMMMP.		Monitoring: delegation to County of San Bernardino per CEQA Guideline 15097(d)	

Public Services and Utilities

Mitigation Measure UTIL-1: Storm water drainages traversed by the water conveyance pipeline alignment shall be returned to pre-construction conditions. Existing structures such as storm flow diversion berms, railroad facilities including bridge supports, access roads, and utility poles shall be returned to pre-construction conditions and protected from scouring by storm water flows, subject to the approval of the railroad owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
At the end of construction, return storm water drainages to pre-construction conditions.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	After Construction

Mitigation Measure UTIL-2: The owner of the natural gas pipelines traversing the Cadiz Property shall be notified in advance of construction activities near the pipelines sufficient to allow for supervision and approval by the owner of construction methods and pipeline under-crossing designs. The under-crossing designs shall require approval from the pipeline owner.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
The owner of the natural gas pipelines traversing the Cadiz Property shall be notified in advance of construction activities.	Retain notification records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Mitigation Measure UTIL-3: Pumps installed as part of the Project shall be rated for high efficiency to minimize energy consumption.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Include Mitigation Measure UTIL-3 in the construction contract specification.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction

Transportation and Traffic

Mitigation Measure TR-1: A Traffic Control Plan shall be implemented that includes the following elements:

- Identify hours of construction and hours for deliveries and include a discussion of haul routes;
- Identify all access restrictions, parking restrictions, and signage requirements on major roads (e.g., speed limit);
- Identify signage and flag men necessary at turn-off lanes on SR-62 and US-66 to avoid traffic hazards on fast moving roads;
- Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times;
- Arrange for a telephone resource to address public questions and complaints during Project construction.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Include Mitigation Measure TR-1 in the construction contract specifications.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Implement a Traffic Control Plan.			

TR-2: The construction contractor shall submit construction plans for construction within the railroad easement to the railroad owner and operator for their review and approval. Any plans to deliver materials on the rail lines shall be reviewed and approved by the railroad owner and operator. The construction contractor shall obtain approval from the railroad operator for material delivery and staging activities within the railroad right-of-way.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
1. Construction contractor shall submit construction plans for construction within the railroad.	Perform site inspections to verify contractor compliance with construction plans. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction
2. Submit construction plans for review and approval by railroad owner and operator.			

TR-3: During construction, all at-grade railroad crossings shall be clearly flagged and barricaded to ensure that all vehicular traffic comes to a full stop prior to crossing railroad tracks.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Flag and barricade all at-grade railroad crossings.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	During Construction

TR-4: The construction contractor shall implement mandatory railroad safety training and implement railroad safety measures requested by the railroad operator.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE
Construction contractor shall implement mandatory railroad safety training and safety measures.	Perform site inspections to verify contractor compliance. Retain inspection records in the project file.	SMWD General Manager/ Chief Engineer	Before and During Construction