6. MITIGATION MONITORING AND REPORTING

This Mitigated Negative Declaration (MND) includes a mitigation monitoring, compliance, and reporting program (MMCRP) for the mitigation measures proposed for the project. This section provides the recommended framework for effective implementation of the MMCRP by the California Environmental Quality Act (CEQA) lead agency, the California Public Utilities Commission (CPUC), and it describes the roles of responsible parties in carrying out and enforcing adopted mitigation measures.

6.1 AUTHORITY FOR THE MITIGATION MONITORING, COMPLIANCE, AND REPORTING PROGRAM

The California Public Utilities Code confers authority upon the CPUC to regulate the terms of service and the safety, practices, and equipment of utilities subject to its jurisdiction. It is the standard practice of the CPUC, pursuant to its statutory responsibility to protect the environment, to require that mitigation measures stipulated as conditions of approval are implemented properly, monitored, and reported on. In 1989, this requirement was codified statewide as Section 21081.6 of the California Public Resources Code (PRC) (CEQA). Section 21081.6 requires a public agency to adopt an MMCRP when it approves a project that is subject to preparation of an MND and where the MND for the project identifies significant adverse environmental effects. CEQA Guidelines Section 15097 (14 CCR 15000 et seq.) was added in 1999 to further clarify agency requirements for mitigation monitoring or reporting.

The purpose of an MMCRP is to ensure that measures adopted to mitigate or avoid significant impacts of a project are implemented. The CPUC views the MMCRP as a working guide to facilitate not only the implementation of mitigation measures by the project proponent, but also the monitoring, compliance, and reporting activities of the CPUC and any monitors it may designate.

The CPUC will address its responsibility under PRC 21081.6 when it takes action on Central Valley, LLC's (Central Valley's), application for a Certificate of Public Convenience and Necessity. If the CPUC approves the application, it will also adopt an MMCRP that includes the mitigation measures ultimately made a condition of approval by the CPUC.

6.2 ORGANIZATION OF THE FINAL MITIGATION MONITORING PROGRAM

If the project is approved, the MMCRP should serve as a self-contained general reference for the mitigation monitoring program adopted by the CPUC for the Central Valley Gas Storage project. To accomplish this, the final mitigation monitoring program (final plan) should contain the elements indicated below. If and when a project has been approved by the CPUC, it will compile the final plan from the mitigation monitoring program in the final MND, as adopted. The elements of the mitigation monitoring program are as follows:

MMCRP Introduction

- Authority and purpose of the program
- Program adoption process
- Organization of the MMCRP

Roles and Responsibilities

- Monitoring responsibility
- Enforcement responsibility
- Mitigation compliance responsibility
- Dispute resolution

General Monitoring Procedures

- Environmental monitor
- Construction personnel
- General reporting requirements
- Public access to records.

Project Description

In the final plan, this section will contain a concise overview and reference description of the approved project and will clearly outline its physical locations and timetable, including construction segments. This section will also specify the "master" reference(s), which the monitors and Central Valley will use in carrying out the program (e.g., the final MND, but also more detailed working maps and plans). The applicant proposed measures (APMs) to which Central Valley has committed to reduce potential impacts will also be listed in this section.

This section will also include requirements for the submittal of plans/documentation to be prepared by Central Valley as outlined in the project description. Plans/documentation to be prepared by Central Valley include the following:

- ***HDD and Contingency Plan:*** The plan will include detailed drawings of the procedures and processes to be completed for horizontal directional drilling (HDD) construction activities. The plan will also provide measures to be completed in the event a frac-out occurs during construction. The plan will be submitted to CPUC at least 30 days prior to HDD construction activities of the applicable phase(s).
- ***Operator Qualification Plan:*** The plan will be prepared per the requirements of Pipeline Safety and CPUC prior to commencement of operating the compressor station. The plan will outline the tasks to be performed by the operator in regards to the pipeline system, the compressor station, and well pad sites. The plan will be submitted to CPUC at least 30 days prior to commencement of operation the compressor station.
- ***Construction and Operation Safety Emergency Response Plan:*** The plan will provide measures to be completed by personnel when responding to emergency situations related to storage and operations. Regular safety meetings will be held by Central Valley to ensure that personnel are knowledgeable of and committed to all safety procedures. Sign-in sheets of the training sessions will be provided to CPUC on a regular basis to verify safety

meetings have been completed. The Emergency Response Plan shall be provided to CPUC at least 30 days prior to commencement of operation.

- ***Damage Prevention Plan:*** This plan will be prepared and will provide a 24-hour phone number for property owners to call in the event of an on-site emergency. The Damage Prevention Plan shall be provided to CPUC at least 30 days prior to commencement of operation.

Agency Jurisdictions

In the final plan, this section will include the list of agencies with jurisdiction over the project (IS/MND Table 1-1) and a description of where their respective jurisdictions exist. For example, for a given construction segment, each jurisdictional agency's contact person's information (including name, address, telephone, and fax numbers) should be provided.

Mitigation Monitoring Programs

The final plan will incorporate the organization and display of the individual issue area mitigation measures presented in the final MND, as well as all APMs applicable to the project. Each mitigation measure will be numbered and described briefly. The final MND should be consulted for an in-depth discussion of each mitigation measure. The final plan will also include the following information:

- The responsible parties, schedule, and reporting requirements for carrying out the monitoring activity for each mitigation measure
- Effectiveness criteria for evaluating the implementation of the mitigation measure.

6.3 ROLES AND RESPONSIBILITIES

As the lead agency under CEQA, the CPUC is required to monitor this project to ensure that the required mitigation measures and APMs are implemented. The CPUC will be responsible for ensuring full compliance with the provisions of this monitoring program and has primary responsibility for implementation of the monitoring program. The purpose of the monitoring program is to document that the mitigation measures required by the CPUC are implemented and that that mitigated environmental impacts are reduced to the level identified in the program.

The CPUC may delegate duties and responsibilities for monitoring to other environmental monitors or consultants as deemed necessary, and some monitoring responsibilities may be assumed by responsible agencies (such as affected jurisdictions and the County of Colusa). The number of construction monitors assigned to the project will depend on the number of concurrent construction activities and their locations. However, the CPUC will ensure that each person delegated monitoring duties or responsibilities is qualified to monitor compliance.

Any mitigation measure study or plan that requires approval from the CPUC must allow for adequate review time, as stipulated in MMRCP. Other agencies and jurisdictions may require longer review periods. It is the responsibility of the environmental monitors assigned to the project to ensure that appropriate agency reviews and approvals are obtained.

The CPUC and its environmental monitors will also ensure that any variance process or deviation from the procedures identified under the monitoring program is consistent with CEQA requirements; no project variance will be approved by the CPUC if it creates new significant

impacts. As defined in this section, a variance should be strictly limited to minor project changes that will not trigger other permit requirements, that do not increase the severity of an impact, or that do not create a new impact, and they must clearly and strictly comply with the intent of the mitigation measure. A proposed project change that has the potential for creating significant environmental effects will be evaluated to determine whether supplemental CEQA review is required. Any proposed deviation from the approved project, adopted mitigation measures, and APMs, and correction of such deviation, shall be reported immediately to the CPUC and the environmental monitors assigned to the project for their review and approval. In some cases, a variance may also require approval by a CEQA-responsible agency.

6.4 ENFORCEMENT RESPONSIBILITY

The CPUC is responsible for enforcing the procedures adopted for monitoring through the environmental monitors assigned to the project. The environmental monitors shall note problems in the field, notify appropriate agencies or individuals about issues, and report compliance status to the CPUC Project Manager.

The CPUC has the authority to halt any construction, operation, or maintenance activity associated with the project if the activity is determined to be a deviation from the approved project, adopted mitigation measures, or APMs. The CPUC may delegate this authority to third-party environmental monitors assigned to the project.

6.5 MITIGATION COMPLIANCE RESPONSIBILITY

The applicant, Central Valley, is responsible for successfully implementing all the adopted mitigation measures in the MMCRP. The MMCRP will contain criteria that define whether mitigation is successful. Standards for successful mitigation also are implicit in many mitigation measures that include requirements such as obtaining permits or avoiding a specific impact entirely. Other mitigation measures include success criteria that are listed in the mitigation measure. Additional mitigation success thresholds may be established by applicable agencies with jurisdiction through the permit process and through the review and approval of specific plans for the implementation of mitigation measures.

Central Valley shall inform the CPUC and its monitors in writing of any mitigation measures that are not or cannot be successfully implemented. In coordination with its monitors, the CPUC will assess whether alternative mitigation is appropriate and specify to Central Valley when subsequent actions are necessary to protect resources consistent with the findings of the MND.

6.6 DISPUTE RESOLUTION

It is expected that the final MMCRP will reduce or eliminate many potential disputes. However, even with the best preparation, disputes may occur. In such event, the following procedures will be followed:

- **Step 1.** Disputes and complaints (including those of the public) should be directed first to the CPUC's designated Project Manager for resolution. The Project Manager will attempt to resolve the dispute.

- **Step 2.** Should this informal process fail, the CPUC Project Manager may initiate enforcement or compliance action to address deviations from the proposed project or adopted mitigation monitoring program.
- **Step 3.** If a dispute or complaint regarding the implementation or evaluation of the program or the mitigation measures cannot be resolved informally or through enforcement or compliance action by the CPUC, any affected participant in the dispute or complaint may file a written "notice of dispute" with the CPUC's Executive Director. This notice should be filed in order to resolve the dispute in a timely manner, with copies concurrently served on other affected participants. Within 10 days of receipt, the Executive Director or designee(s) shall meet or confer with the filer and other affected participants for purposes of resolving the dispute. The Executive Director shall issue an executive resolution describing his/her decision and serve it on the filer and other affected participants.
- **Step 4.** If one or more of the affected parties is not satisfied with the decision as described in the resolution, such party/parties may appeal to the CPUC via a procedure to be specified by the CPUC.

Parties may also seek review by the CPUC through existing procedures specified in the CPUC's rules of practice and procedure for formal and expedited dispute resolution, although a good faith effort should first be made to use the foregoing procedures.

6.7 GENERAL MONITORING PROCEDURES

6.7.1 Environmental Monitors

The CPUC and the environmental monitors are responsible for integrating the mitigation monitoring procedures into the construction process in coordination with Central Valley. To oversee the monitoring procedures and to ensure success, the environmental monitors assigned to the project must be on site during construction activities that have the greatest potential to create a significant environmental impact or other impact for which mitigation is required. The environmental monitors are responsible for ensuring that all procedures specified in the monitoring program are followed.

6.7.2 Construction Personnel

A key component of a successful mitigation monitoring program will be obtaining the full cooperation of construction personnel and supervisors. Many of the mitigation measures require action on the part of the construction supervisors or crews for successful implementation. To ensure success, the following actions, detailed in specific mitigation measures included in the final plan, will be taken:

- Procedures to be followed by construction companies hired to do the work will be written into contracts between Central Valley and any construction contractors. Procedures to be followed by construction crews will be written into a separate agreement that all construction personnel will be asked to sign, denoting agreement.
- One or more preconstruction meetings will be held to inform and train construction personnel about the requirements of the monitoring program (as detailed in the final plan).
- A written summary of mitigation monitoring procedures will be provided to construction supervisors for all mitigation measures requiring their attention.

6.7.3 General Reporting Procedures

Site visits and specified monitoring procedures performed by other individuals will be reported to the environmental monitors assigned to the relevant construction segment. A monitoring record form will be submitted to the environmental monitor by the individual conducting the visit or procedure so that details of the visit can be recorded and progress traced by the environmental monitors. A checklist will be developed and maintained by the environmental monitors to track all procedures required for each mitigation measure and to ensure that the timing specified for the procedures is adhered to. The environmental monitors will note any issues that may occur and take appropriate measures to bring a situation back into compliance. Central Valley shall provide the CPUC with written weekly reports of the project, which shall include progress of construction, resulting impacts, mitigation implemented, and all other noteworthy elements of the project. Weekly reports shall be required as long as mitigation measures are applicable.

6.7.4 Public Access to Records

The public is allowed access to records and reports used to track the monitoring program. Monitoring records and reports will be made available for public inspection by the CPUC on request. The CPUC and Central Valley will develop a filing and tracking system. For additional information on mitigation monitoring and reporting for the Central Valley Gas Storage project, the Energy Division of the CPUC will maintain an Internet website, accessible at http://www.cpuc.ca.gov/environment/info/dudek/cvgs/CVGS_Home.htm. In order to facilitate the public's awareness, the CPUC will make weekly reports available on the website.

6.8 CONDITION EFFECTIVENESS REVIEW

In order to fulfill its statutory mandates to mitigate or avoid significant effects on the environment and to design a mitigation monitoring program to ensure compliance during project implementation (PRC 21081.6), the CPUC may conduct a comprehensive review of conditions that are not effectively mitigating impacts at any time it deems appropriate, including as a result of the dispute resolution procedure outlined in Section 6.6.

If in either review the CPUC determines that any conditions are not adequately mitigating significant environmental impacts caused by the project, then the CPUC may impose additional reasonable conditions to effectively mitigate these impacts.

These reviews will be conducted in a manner consistent with the CPUC's rules and practices.

6.9 MITIGATION MONITORING PROGRAM TABLE

Table 6-1, along with the full text of the mitigation measures themselves, will form the basis for implementation of the mitigation monitoring program.

Table 6-1: Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Short-term and long-term visual impacts.	—	AES-1	The following measures would be implemented as part of the proposed project to minimize visual impacts of the project and to be consistent with Colusa County General Plan policies: • Construction disturbances will be minimized to help reduce contact between exposed soil and naturally vegetated areas, and clearing of vegetation and trees at facility sites will be minimized. • Disturbed agricultural land will be replanted following pipeline construction, if requested by the landowner. • All above ground structures will be painted with non-glare, earth-tone colors to blend with the surrounding vegetation/landscape. • Shielded, non-glare lighting will be used at facilities.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	CPUC to verify proposed building materials and replanting of agricultural lands along the disturbed areas through review of preconstruction plans and samples. CPUC to verify consultation with Colusa County through meeting notes, and review of project implementation in the field. Effectiveness Criteria – materials are non-reflective and are considered consistent with General Plan policies by Colusa County.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Nighttime lighting during 24/7 drilling activities and well pad and pull-back activities at HDD sites.	AES-1	—	Night lighting for construction at the well pad and horizontal directional drilling (HDD) drilling sites, if required, shall be fully shielded and directed away from residential areas. Lights shall be turned off in areas where they are no longer needed.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	CPUC to ensure that commitments have been incorporated into construction contract specifications. CPUC to inspect periodically to ensure correct placement of lighting to prevent night lighting impacts to residential areas.	Prior to and during construction.
Nighttime lighting during 24/7 drilling activities	AES-2	—	The applicants' drilling plan shall specify that lights shall be fully shielded and directed inward on the work area.	Central Valley to prepare and implement drilling plan and shall include light specification. Drilling plan to be submitted to the CPUC and Colusa County at least 2 weeks prior to construction of the applicable phase(s).	CPUC to ensure that commitments have been incorporated into construction contract specifications. CPUC to inspect periodically to ensure correct placement of lighting to prevent night lighting spillover effects.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Long term light and glare from facility lighting.	AES-3	—	All permanent outdoor site and building lighting at the compressor station, remote well pad site, and metering station site shall be directed at the ground and immediate area around the mounting pole or building wall. All permanent outdoor lighting shall be fully shielded such that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal. Poles used for site lighting shall not exceed a height of 35 feet.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	CPUC to ensure that commitments have been incorporated into construction contract specifications. CPUC to inspect to ensure placement of lighting to prevent night lighting impacts to nearby areas.	Post construction.
Long-term light and glare from facility lighting.	AES-4	—	Observation and saltwater disposal well pad lighting and metering station lighting shall be used only as needed when the sites are accessed for monitoring or servicing.	Central Valley to implement measure during routine monitoring or servicing.	CPUC to ensure that commitments have been incorporated into routine monitoring and servicing manuals.	Post construction.
Potential for short-term and long-term loss of use of land, crops, and agricultural structures.	—	AGRI-1	As a public utility, Central Valley is required to offer appropriate compensation for land held in private ownership as part of the acquisitions of utility easements. Central Valley would compensate landowners for any permanent crop losses at aboveground facility sites and temporary crop losses in the year of construction and, if applicable, will compensate for the permanent removal of any structures and agricultural-related improvements that are necessary to construct the project.	Central Valley would compensate landowners as part of the acquisition of utility easements.	Central Valley to document compensation and provide verification of compliance with measure to CPUC at least 2 weeks prior to construction of the applicable construction phase(s) (see Mitigation Measure AG-1).	Prior to, during, and post construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Temporary loss of use of land for agricultural purposes or damage to agricultural structures.	—	AGRI-2	Following construction, agricultural fields will be surveyed and regraded to their original elevation where needed, and all rice field dikes and check boxes will be repaired or replaced. Although the trench backfill in agricultural areas will be compacted to minimize settling, follow-up elevation surveys would be provided, if necessary, to ensure that field grading and irrigation flaws are not adversely affected. Fences and irrigation facilities will be replaced or repaired to their original condition following construction.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to document existing elevations in construction plans and provide a copy to CPUC. Within 30-days of construction Central Valley will complete follow-up elevations and replace and repair fences and irrigation facilities to original condition. Following completion, a final report will be submitted to the CPUC within 2 weeks of completing measures as defined for verification.	Prior to and post construction.
Potential for short-term and long-term loss of use of land, crops, and agricultural structures.	AG-1	—	In areas where right-of-way (ROW) is to be acquired by fee or easement, Central Valley shall compensate the property owner at "fair market value" in compliance with federal and state regulations. The determination of "fair market value" shall be determined by a professional land appraiser retained by Central Valley. Central Valley shall provide qualifications of the professional land appraiser and a copy of appraisals to the California Public Utilities Commission (CPUC). In areas where temporary	Central Valley will compensate landowners through use of a professional land appraiser. Central Valley will replace crops and facilities, as compensable.	Central Valley to document compensation and provide verification of compliance with measure to CPUC. CPUC to coordinate with Central Valley to confirm land	Prior to and post construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			impacts would occur due to construction, Central Valley shall replace or compensate property owners for compensable private facilities and crops that were removed for construction. Replacement of facilities and crops shall occur to the extent they are not detrimental to future pipeline or natural gas operations. Compensation shall be determined by the professional land appraiser.		appraiser meets requirements, and landowners are appropriately compensated.	
Potential for limited access to agricultural fields during construction.	AG-2	—	Central Valley shall coordinate, prior to construction, with owners of land adjacent to the pipeline route regarding temporary blockage of access to the owner's parcel due to pipeline construction. Alternative access routes shall be provided, or farmers shall be provided breaks in spoil piles, trenches, or pipe strings to accommodate their need for field access during construction.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide documentation of coordination with affected parties and confirmation with all required conditions to ensure access would be maintained. Central Valley to provide documentation to CPUC that affected parties were noticed at least 2 weeks prior to construction of the applicable phase(s). CPUC to inspect to ensure access is being maintained during construction.	Prior to and during construction for all areas where access restrictions are expected during construction of the project.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential for tree roots to grow toward pipeline.	AG-3	—	Should the final designed pipeline occur within 15 feet of tree canopy drip lines (the outermost extent of the tree canopy), Central Valley, in coordination with affected landowners, shall implement methods to protect the pipeline from tree roots, such as the following: 1. An herbicide-embedded fabric (such as Biobarrier) could be placed in the trench above the pipeline and on the side adjacent the trees 2. Wrap the pipeline with a non-chemical root barrier fabric "sock" before placing into trench 3. Compact soil around pipeline to minimize/prevent root growth upon backfilling the trench.	Following final design, Central Valley to coordinate with land owner if pipeline within 15 feet of canopy drip line to determine method of protecting pipeline from roots as defined in measure. Central Valley to incorporate measure into construction contracts.	Central Valley to document compliance with measure through providing a report to CPUC within 30 days following construction of the applicable phase(s) identifying measures that were completed in areas where the pipeline was located within 15 feet of the tree canopy drip lines. CPUC to inspect to ensure measures are being implemented.	During and post construction.
Potential loss of orchard trees.	AG-4	—	If final design of the 14.7-mile connecting pipeline would result in a loss of trees in the orchard along the alignment, Central Valley will compensate the landowner for permanent crop loss.	Central Valley will compensate landowners as defined by measure and will incorporate measure into construction contracts.	Central Valley to document compensation and provide verification of compliance with measure to CPUC at least 2 weeks prior to construction.	Prior to construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential for dust (PM_{10}) to be generated by construction activities.	—	AIR-1	The following measures would be implemented as part of the proposed project to minimize dust emissions and reduce short-term construction impacts to a less-than-significant level: • Water all active construction areas (subject to vehicle travel) at least twice (as necessary) daily. • Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 feet of freeboard. • Water (as necessary) unpaved access roads, parking areas, and staging areas at construction sites that receive regular vehicle travel. • Sweep daily with water sweepers all paved public roads where the pipeline right-of-way (ROW) intersects the road. • Sweep paved streets daily with water sweepers if visible soil material is carried onto adjacent public streets. • Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt and sand). • Limit traffic speeds on unpaved roads to 15 miles per hour. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways. • Replant vegetation in disturbed areas as quickly as possible, where determined appropriate and in consultation with the landowner. • Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site. • Limit the area subject to excavation, grading, and	Central Valley to implement measures as defined and incorporate commitments into construction contracts. Central Valley will notify the CPUC that the CCAPCD has issued an "Authority to Construct" air permit before beginning construction of the compressor facility.	CPUC to inspect periodically for dust control within and outside the work area in order to ensure that fugitive dust has been controlled. Central Valley to provide CPUC written verification from CCAPCD to document permit compliance prior to construction of the compressor facility.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			other construction activity at one time. Central Valley will notify the California Public Utilities Commission (CPUC) that the Colusa County Air Pollution Control District (CCAPCD) has issued an "Authority to Construct" air permit before beginning construction of the compression facility.			
Potential for NOx and greenhouse gas (GHG) emissions from all diesel powered construction equipment, including support equipment.	—	AIR-2	Central Valley would implement the following measures to reduce NO_x and GHG emissions from all diesel powered construction equipment and vehicles: • To the extent feasible, all construction diesel engines rated at 100 hp or more shall meet, at minimum, the Tier 2 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in Title 13 California Code of Regulations Section 2423 (b)(1), unless such engine is not available for a particular type of equipment. In the event a Tier 2 engine is unavailable, that engine shall meet the Tier 1 standards. In the event that a Tier 1 engine is unavailable for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by the engine manufacturer that the use of such devices are not practical for specific engine types. For purposes of this measure, the use of such devices is considered not practical if any of the following conditions apply: 1. There is no available soot filter that has been verified by either the California Air Resources Board of the U.S. Environmental Protection Agency (EPA) for the engine in question. 2. The construction equipment is intended to be	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley shall document compliance with this measure. The construction plans shall define how and where records of project-vehicle fleet, equipment tuning, and maintenance will be kept for CPUC review during construction. Central Valley shall ensure that all construction workers are aware of the vehicle idling restriction by including explanation of this requirement in the Worker Training Program. CPUC to ensure that commitments have been made in contracts specifying	At least 30 days prior to submittal of applications for grading permits; during construction; after receipt of the CCAPCD Authority to Construct.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			on site for 10 days or less. 3. The use of a soot filter may be terminated immediately if one of the following conditions apply: a. The use of a soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance and/or reduced power output due to an excessive increase in backpressure. b. The soot filter is causing or is reasonably expected to cause significant engine damage. c. The soot filter is causing or is reasonably expected to cause a significant risk to the workers or the public. d. Any other seriously detrimental cause that has the approval of the CPUC prior to the termination being implemented. • All heavy earthmoving equipment and heavy-duty construction-related trucks with engines shall be properly maintained and the engines tuned to the engine manufacturer's specifications. • To the extent feasible, unnecessary construction equipment and vehicle and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequences of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel powered vehicles, have extended warm-up times following start-up. Where such diesel powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The proposed		equipment. CPUC to inspect periodically for equipment idling. Central Valley to provide verification of carpool program to the CPUC at least 30 days prior to construction of the applicable phase(s).	

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			project will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of preconstruction conferences. Those briefings will include discussion of a common sense approach to vehicle use. • Central Valley will institute a carpooling program to transport workers from staging areas to the work site.			
Potential for NOx emissions.	—	AIR-3	Central Valley will lease NO_x emission credits from the CCAPCD in an amount that offsets all construction-related NO_x emissions exceeding CCAPCD's significance threshold of 137 pounds per day after implementation of AIR-2. Based on the NO_x pounds per day emission estimates for each construction phase, and the length of those phases, NO_x emissions would exceed the CCAPCD threshold by a total of 28,438 pounds, or 14.2 tons (see Appendix B). Consequently, Central Valley will purchase emission credits to offset this amount of NO_x emissions.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to the CPUC that the mitigation credits have been leased at least 30 days prior to any construction.	The NO_x mitigation credits shall be leased prior to any construction.
Potential for GHG emissions.	—	AIR-4	Central Valley will participate in the U.S. EPA's Natural Gas STAR Program. Central Valley will sign a memorandum of understanding (MOU) with the U.S. EPA prior to initial startup of the compressor station. Within 6 months after signing the MOU, Central Valley will prepare an implementation plan that includes best management practices identified by the Natural Gas STAR program for transmission and distribution facilities. The implementation plan shall incorporate Partner Reported Opportunities (PRO) that cost-effectively reduce methane emissions. Within 45 days after completion of one	Central Valley to implement measure as defined and incorporate commitments into construction contracts. A copy of the MOU shall be provided to CPUC at least 2 weeks prior to operation of the compressor station.	CPUC to ensure that Natural Gas STAR Program conditions have been met.	Prior to startup of the compressor station; annual reports due to CPUC within 45 days after completion of one calendar year of participation in the program.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			calendar year of participation in the program, Central Valley will submit an annual report documenting the previous year's emission-reduction activities and corresponding methane emission reductions. Copies of all documents will be submitted to the CPUC. Prior to startup of the compressor station, Central Valley will implement the following best management practices consistent with the Natural Gas STAR program. These measures may be incorporated in the implementation plan. • The compressor engines will use compressed air starters instead of natural gas starters. This measure is consistent with PRO Fact Sheet #103. • Central Valley will utilize programmable logic controllers, which will automate the startup sequence of the compressor units. This measure is consistent with PRO Fact Sheet #106. • The temporary compressor will be a rich-burn, natural-gas-fueled engine equipped with an automated air-fuel ratio controller. This measure is consistent with PRO Fact Sheet #111. • Dehydration facilities will be designed to separate and recover flash gas from the dehydrator reboilers, which can be used for fuel gas for the reboiler and vapor removal unit. Also, electric motor-driven tri-ethylene glycol pumps will be used in place of pumps powered by compressed natural gas. These measures are consistent with PRO Facts Sheets #201, 203, and 206. • Ultrasonic meters will be installed at the compressor station and at each of the wellheads in place of orifice meters. This measure is consistent with PRO Fact Sheet #304. • Pneumatic controls will be operated using	A copy of the implementation plan shall be provided to the CPUC within 2 weeks after its submittal to the U.S. EPA. The annual report documenting emission reduction activities shall be provided to the CPUC within 45 days after the end of the first calendar year of operation.		

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			pressurized instrument air rather than natural gas. This measure is consistent with Natural Gas STAR Lessons Learned document "Convert Gas Pneumatic Controls to Instrument Air."			
Potential for CO_2E emissions during project operation.	—	AIR-5	Based upon lower horsepower and hours of operation projections, the estimated CO_2E emissions from the project's stationary sources will be 15,952 metric tons per year (mtpy) CO_2E, for total project-wide GHG emissions of 16,596 mtpy. In any year, when CO_2E emissions exceed 10,000 mtpy, Central Valley will purchase offsets that will effectively cap its emissions at 10,000 mtpy by securing and retiring GHG offset credits by March 31 of a given year in a quantity equal to the previous calendar year's actual GHG emissions from the facility, minus 10,000 mtpy. Central Valley will purchase GHG offset credits from any or all of the following offset certification standards: American Carbon Registry, Climate Action Reserve, or the Voluntary Carbon Standard. Central Valley would report each year to the CPUC its GHG emissions and the number of GHG offsets purchased and retired to offset project emissions above 10,000 mtpy.	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Annual reports shall be provided to CPUC.	CPUC to review annual reports to ensure that the mitigation offsets commitment has been satisfied.	Annual reports shall be provided to CPUC by March 31 of the following year.
	AIR-1	—	The applicant shall incorporate passive solar design in all buildings that would require temperature control, but not including the compressor building. Buildings shall be sited, oriented, and designed to optimize conditions for natural heating, cooling, and daylighting to the maximum extent practicable. Specific eexamples of passive solar design may include, but are not limited to, the following: **Building Orientation** Site buildings to take advantage of shade, prevailing winds, landscaping, and sun screens to reduce	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to the CPUC that the building design has incorporated passive solar components prior to any construction of applicable buildings.	Prior to construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			energy use. Shade south-facing windows that receive full sun with a combination of landscaping, overhangs, shutters, and solar window screens. To optimize southern solar heat gain, locate major window openings on the southeast, south, and southwest sides of the buildings. To minimize cold winter exposure, keep windows on the north-, east-, and west-facing walls small in size. **Heating and Cooling Optimization** Optimize building glazing by evaluating the thermal resistance (or R-value), visible light transmittance, and solar heat gain coefficient of the building's glass. Utilize exterior sun controls and shading techniques such as trees, awnings, or trellises, as opposed to interior controls such as blinds and shutters, to block light and heat before penetrating the building to reduce energy demand from mechanical cooling and heating. Place shade trees, trellises, or awnings strategically to minimize the use of glazing. Use skylights, natural lighting, and indirect (i.e., solar tube) lighting to eliminate overheating and glare. Arrange building openings to catch cooling summertime breezes. Size and locate outlet openings to accelerate the flow of breezes through the building. Use reflective foil and air space underneath the roof sheeting to reduce heat penetration. **Natural Lighting Optimization** Install roof monitors and skylights for overhead natural lighting; however, consideration should be given to potential overheating from skylights.			

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			Use reflective ceilings and light-colored interior surfaces to increase interior lighting. Incorporate shading devices to minimize direct-beam sunlight penetration into workspaces. Use lighting and control systems, such as automated natural light-actuated controls that adjust depending on the amount of natural light entering the interior space, for maximum flexibility and adjustability depending on the layout of the building and the natural exposure of the structure to natural daylight. The above measures are provided as guidance to maximize natural lighting and achieve optimal heating and cooling condition. Central Valley shall provide CPUC documentation of passive solar design measure(s) and quantification of energy savings either as a number or percentage. In addition to site plans, architectural plans, landscape plans, and construction plans identifying the design elements incorporated into the building design, supporting documentation is required to verify the energy savings achieved through the combination of chosen design elements. Computer modeling tools and simulation programs may be utilized to identify the best combination of design strategies and to verify performance.			
	AIR-2	—	Central Valley shall enter into an agreement with Pacific Gas and Electric (PG&E) to participate in the ClimateSmart™ Program for purchases of Central Valley's electric energy. All contributions to the ClimateSmart™ program, funded through a surcharge to a customer's electricity charges, are invested in high-quality greenhouse gas emission reduction and capture projects that are independently verified and registered with the Climate Action Reserve. A copy of the agreement shall be provided to CPUC prior to the start of operation of the	A copy of the ClimateSmart™ Program agreement shall be provided to CPUC at least 2 weeks prior to the start of operation of the compressor station.	CPUC to ensure that ClimateSmart™ Program agreement has been incorporated into construction contracts.	Prior to the start of operation of the compressor station.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			compressor station. If a future program renders this agreement redundant (e.g., if Central Valley can demonstrate that the same benefits are achieved via PG&E's participation in a future cap-and-trade program), then the agreement shall be terminated, subject to review and approval by the CPUC.			
Potential for GHG emissions.	AIR-3	—	In addition to purchasing and retiring offsets for operational emissions under APM AIR-5, Central Valley will also purchase and retire offsets to cover the GHG emissions resulting from construction of the project as follows: (1) the project carbon offsets for the first year of operation shall include a minimum of 2,514 $MTCO_2E$, based on one-half of the total estimated construction emissions; and (2) the project carbon offsets for the second year of operation shall include the balance of 5,028 $MTCO_2E$ of construction emissions. Because Central Valley has agreed to fully offset the construction emissions of the project within the first 2 years of project operation, there is no need to amortize the construction emissions over the life of the project for the purpose of accounting for these emissions. Project carbon offsets for the construction emissions shall be provided no later than those for the operational emissions as described in APM AIR-5. Central Valley shall conduct an annual GHG emission inventory of stationary sources (compressor engines, standby generator, natural draft burner, glycol reboilers, still vent, and blowdown of natural gas) each year and report its findings to the CPUC by March 31 of the following year. Central Valley shall include in its annual GHG inventory an additional 50 $MTCO_2E$, which accounts for an estimated 50 $MTCO_2E$/yr from non-stationary sources When the project carbon offsets from operational	Project carbon offsets for the construction emissions shall be provided to CPUC with a verification opinion statement(s), from the entity that certified the project carbon offsets or a verification body registered with the California Climate Action Reserve, American National Standards Institute (ANSI), or the California Air Resources Board (CARB).	CPUC ensure that project carbon credits have been purchased and retired and will review the independent verification opinion statement(s).	During operation; annual GHG emission inventory due to CPUC by March 31 of the following year.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			emissions (APM AIR-5) and construction emissions are retired, Central Valley shall provide to the CPUC a copy of the verification opinion statement(s) by the verification body accredited by the American Carbon Registry, Climate Action Reserve, or the Voluntary Carbon Standard, as appropriate, for the project carbon offsets provided.			
Develop and implement a worker environmental awareness program.	—	BIO-1	Before any work occurs in the project area, including grading, Central Valley would conduct mandatory contractor/worker environmental awareness training for construction, monitoring, supervisory, and engineering/inspection personnel. The awareness training would be provided to all construction personnel to discuss sensitive environmental resources known or having the potential to occur in the project region, best management plans, and permit conditions. If new construction personnel are added to the project, Central Valley would ensure that the personnel receive the mandatory training before starting work.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide a copy of the worker training program for review and approval at least 30 days prior to start of construction. Central Valley to provide verification to CPUC of implementation of worker training program and compliance with measure as defined through providing sign-in sheets on a weekly basis. All construction personnel that have been trained shall receive a sticker for their hard hat indicating they have completed environmental awareness training.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Obtain and comply with state, federal, and local permits.	—	BIO-2	Before any construction activities are initiated and engineering plans and specifications have been finalized, Central Valley would obtain the permits listed below: • Clean Water Act (CWA) Section 404 nationwide permit from the U.S. Army Corps of Engineers (ACOE) • CWA Section 401 water quality certification from the Central Valley Water Board (all Section 404 permits require a Section 401 water quality certification from the Regional Water Quality Control Board (RWQCB)) • CWA Section 402/National Pollutant Discharge Elimination System (NPDES) permit from the State Water Board (requiring preparation of a Stormwater Pollution Prevention Plan (SWPPP)) • Section 1602 Streambed Alteration Agreement and 2081 Agreement from the Department of Fish and Game (CDFG) • Biological Opinion from the U.S. Fish and Wildlife Service (USFWS). Central Valley is responsible for obtaining all required permits and authorizations from local, state, and federal agencies. If a conflict arises between the provisions of any of the permits, Central Valley would comply with the provision that offers the greatest protection to water quality, species of special concern, and/or critical habitat. Copies of the permits will be provided to the contractor with the construction specifications.	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Copies of the permits will be provided to the CPUC and contractor at least 2 weeks prior to the applicable phase(s).	CPUC to ensure that commitments have been incorporated into construction contracts. CPUC to verify CDFG, ACOE, USFWS, and RWQCB review and approval and that copies of all requisite permits be provided prior to construction.	Prior to construction.
Install temporary construction barrier fencing to	—	BIO-3	The construction specifications would require that a qualified biologist identify sensitive biological habitat on site and identify areas to avoid during	Central Valley to implement measure as defined and	Central Valley to provide survey documentation	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
protect sensitive biological resources adjacent to the construction zone.			construction. Sensitive communities in the area that would generally be required for construction, including staging and access, will be fenced off to avoid disturbance in these areas. The contractor would install construction barrier fencing to identify environmentally sensitive areas. Sensitive resources that occur in and adjacent to the construction area include woody riparian vegetation, wetlands (including suitable habitat for federally listed invertebrates), giant garter snake aquatic and upland habitat, western pond turtle aquatic habitat, elderberry shrubs that provide potential habitat for the valley elderberry longhorn beetle (VELB), and trees that support nests of sensitive bird species. Before construction, the contractor will work with the project engineer and a resource specialist to identify the locations that require barrier fencing and will place stakes around the sensitive resource sites to indicate these locations. In some areas, staking and flagging may be appropriate and would be determined by the environmental compliance monitor. The protected area would be designated an environmentally sensitive area and clearly identified on the construction specifications. The fencing would be installed before construction activities are initiated and would be maintained throughout the construction period.	incorporate commitments into construction contracts.	report to CPUC at least 30 days prior to construction regarding sensitive biological habitat. CPUC to inspect periodically during construction in order to ensure measures are being implemented as defined.	
Potential for long-term loss of woody riparian vegetation.	—	BIO-4	To the extent possible, Central Valley would direct the contractor to minimize the potential for the long-term loss of woody riparian vegetation by trimming vegetation rather than removing entire shrubs or trees. Using hand tools (e.g., clippers, chain saw), shrubs, and trees may be trimmed to the extent necessary to gain access to the work zone. Cutting would be limited to the minimum area necessary and will only be done in areas that do not provide habitat	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to CPUC of measure including submittal of construction contract. CPUC to inspect periodically during	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			for sensitive species. All cleared material/vegetation would be removed out of the riparian zone.		construction in order to ensure measures are being implemented as defined.	
Potential for long-term loss of woody riparian vegetation.	—	BIO-5	Central Valley would compensate for the removal or loss of woody riparian vegetation (trees and shrubs) a minimum ratio of 2:1 (2 acres for every 1 acre removed). Central Valley would purchase mitigation bank credits at a locally approved bank or contribute funds to the National Fish and Wildlife Foundation in lieu fee program. Central Valley would provide written evidence to CPUC and other appropriate resource agencies (e.g., CDFG) that compensation has been established through the purchase of mitigation credits. The amount to be paid would be the fee that is in effect at the time the fee is paid.	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Central Valley would provide written evidence to CPUC and other appropriate resource agencies (e.g., CDFG) that compensation has been established through the purchase of mitigation credits.	CPUC to review and verify written evidence of compensation.	Prior to and during construction.
Potential for disturbance of waters of the United States, including wetlands.	—	BIO-6	To the extent possible, Central Valley would avoid and minimize impacts on waters of the United States, including wetlands, by implementing the following measures. These measures would be incorporated into contract specifications and implemented by the construction contractor: • The project will be designed, to the extent possible, to avoid direct and indirect impacts on waters of the United States, including wetlands. • Construction activities will be avoided in saturated or ponded natural wetlands and drainages during the wet season (spring and winter) to the	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to CPUC of measure including submittal of construction contract.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, will be employed. • Exposed drainage banks and levees above drainages will be stabilized immediately upon completion of construction activities. Other waters of the United States will be restored in a manner that encourages vegetation to re-establish to its pre-project condition and reduces the effects of erosion on the drainage system. • Any trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high water mark (OHWM) of streams will be removed in a manner that minimizes disturbance of the drainage bed and bank. • To the extent possible, in-stream construction within the OHWM of natural drainages crossed by a pipeline alignment will be restricted to the low-flow period (generally April through October). • All activities will be completed promptly to minimize their duration and resultant impacts.			
Potential for disturbing burrowing owl burrows during construction activities.	—	BIO-7	If wildlife surveys indicate that the annual grasslands west of the Glenn-Colusa Canal support potential burrows, Central Valley will retain a qualified biologist to conduct preconstruction surveys for active burrows according to CDFG guidelines. CDFG recommends that preconstruction surveys be conducted at all construction sites (except paved areas) and within a 250-foot-wide buffer zone around the construction site to locate active burrowing owl burrows. If no burrowing owls are detected, then no further actions will be taken. If active burrowing owls are detected, the following measures will be implemented	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Central Valley to retain CDFG-approved qualified biologist to perform surveys.	Central Valley to provide survey report documentation and verification to CPUC of compliance with measure as defined.	Prior to and during construction for all areas identified as suitable burrowing owl habitat.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			by Central Valley: • When destruction of occupied burrows is unavoidable outside the nesting season (September 1–January 31), unsuitable burrows will be enhanced (enlarged or cleared of debris) or new burrows created (installing artificial burrows) at a ratio of 2:1 on protected lands approved by CDFG. Newly created burrows will follow guidelines established by CDFG. • If owls must be moved away from the project construction area, passive relocation techniques (e.g., installing one-way doors at burrow entrances) will be used instead of trapping. At least 1 week will be necessary to accomplish passive relocation and allow owls to acclimate to alternate burrows. • If active burrowing owl burrows are found and the owls must be relocated, Central Valley will offset the loss of foraging and burrow habitat in the project construction area by acquiring and permanently protecting foraging habitat (the acreage would be determined through consultation with CDFG). • If avoidance is the preferred method of dealing with potential impacts, no ground disturbing construction activities will occur within 160 feet of occupied burrows during the non-breeding season (September 1–January 31) or within 250 feet during the breeding season (extends from March through August, peaking in April and May).			
Potential for disturbance of tree-, shrub-, or ground-nesting	—	BIO-8	Central Valley will implement one of the following measures, depending on the specific construction timeframe, to avoid disturbance of tree-, shrub- or ground-nesting birds, such as white-tailed kites,	Central Valley to implement measure as defined and incorporate	Central Valley to provide survey report documentation to	Prior to and during construction for all areas

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
white-tailed kite, northern harrier, loggerhead shrike, and non-special-status migratory birds and raptors.			northern harriers, loggerhead shrikes, and white-faced ibis, and non-special-status migratory birds and raptors. • For project components that are scheduled for construction during the breeding season for these species (generally between February 15 and August 15), a qualified wildlife biologist will be retained to conduct the following focused nesting surveys within the appropriate habitat. • Tree- and shrub-nesting surveys will be conducted in riparian and oak woodland habitats within or adjacent to the construction area to look for white-tailed kite, loggerhead shrike, and other non-special-status migratory birds and raptors. • Ground-nesting surveys will be conducted in annual grasslands and agricultural lands within and adjacent to the construction area to look for northern harrier and other non-special-status migratory birds. The surveys should be conducted within 2 weeks before initiation of construction activities and at any time between February 15 and August 15. If no active nests are detected, then no additional measures are required. If surveys indicate that migratory bird or raptor nests are found in any areas that would be directly affected by construction activities (e.g., the noise associated with construction would substantially exceed ambient noise levels associated with highway/road or agricultural noise), then a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late June to mid-July). The extent of these buffers will be determined by a wildlife biologist, and will depend on the level of noise	commitments into construction contracts.	CPUC of the applicable phase(s) to be prepared by a qualified biologist.	identified as suitable habitat for tree-, shrub-, or ground-nesting birds.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			or construction disturbance, line of sight between the nest and the disturbance, ambient levels of agricultural and highway/road noise and other disturbances, and other topographical or artificial barriers. These factors should be analyzed to make an appropriate decision on buffer distances. Construction activities that are scheduled to begin before the breeding season, (i.e., begin between August 16 and February 15) (pre-existing construction) can proceed. Optimally, all necessary vegetation removal should be conducted before the breeding season (generally between February 15 and August 15) so that nesting birds or raptors would not occur in the construction area during construction activities. If any birds or raptors nest in the project vicinity under conditions existing before construction, then it is assumed that they are habituated (or will habituate) to the construction activities. Under this scenario, the preconstruction survey described previously should still be conducted on or after February 16 to identify any active nests in the vicinity, and active sites should be monitored by a wildlife biologist periodically until after the breeding season or after the young have fledged (usually late June to mid-July). If active nests are identified on or immediately adjacent to the project site, then all nonessential construction activities (e.g., equipment storage and meetings) should be avoided in the immediate vicinity of the nest site, but the remainder of construction activities may proceed. All preconstruction surveys will be documented in a memo to the CPUC to support authorization of the notice to proceed for specific project components.			

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential for impact to elderberry shrubs.	—	BIO-9	Before any ground-disturbing activity, Central Valley will ensure that a minimum 4-foot-tall temporary, plastic mesh–type construction fence is installed at least 20 feet from the driplines of elderberry shrubs that are within 100 feet of the construction area. The fencing will be installed in a way that prevents equipment from enlarging the work area beyond the delineated work area. The fencing will be checked and maintained weekly until all construction is completed. No construction activity, including grading, will be allowed until this condition is satisfied. No grading, clearing, storage of equipment or machinery, or other disturbance or activity may occur until the CPUC environmental compliance monitor has inspected and approved all temporary construction fencing. The fencing and a note reflecting this condition will be shown on the construction plans.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to CPUC of measure including submittal of construction contract. CPUC to inspect periodically during construction in order to ensure measures are being implemented as defined.	Prior to and during construction.
Potential to impact nesting birds during construction.	—	BIO-10	To ensure that possible impacts on nesting Swainson's hawks or their foraging habitat are less than significant, and that unauthorized take of Swainson's hawk does not occur, Central Valley will implement the following measures: a) Preconstruction surveys for nesting Swainson's hawks will be conducted in the project area. These surveys will occur during the breeding season before project activities begin. b) If a Swainson's hawk nest occurs in or adjacent to the project area and could be adversely affected by the increase in ambient noise levels associated with construction, Central Valley will follow CDFG's recommendations for mitigating impacts to Swainson's hawks (CDFG 1994).	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Central Valley to retain CDFG-approved qualified biologist to perform surveys.	Central Valley to provide survey report documentation to CPUC and provide verification to CPUC of compliance with measure as defined.	Prior to and during construction for all areas identified as suitable Swainson's hawk nest habitat.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential to impact western pond turtles.	—	BIO-11	To avoid construction-related impacts on western pond turtles, Central Valley will retain a wildlife biologist to conduct a preconstruction survey for western pond turtles no more than 48 hours before the start of construction activities associated with the 14.7-mile gas pipeline component. The wildlife biologist will look for adult pond turtles. If a western pond turtle is located in the construction area, the biologist will move the turtle to a suitable aquatic site outside the construction area.	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Central Valley to retain qualified biologist to perform surveys.	Central Valley to provide survey report documentation to CPUC and to provide verification to CPUC of compliance with measure as defined.	Prior to and during construction for all areas identified as suitable western pond turtle habitat.
Potential to impact giant garter snake habitat.	—	BIO-12	Because of the nature and scale of anticipated adverse effects on giant garter snakes and their habitat, mitigation and compensation measures presented in this measure were derived primarily from the USFWS's Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat. Mitigation measures also are based on the guidance provided in the Programmatic Formal Consultation for ACOE 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo counties, California (USFWS 1997). Mitigation measures to avoid and minimize effects on the giant garter snake are as follows: • At such time when construction plans are finalized, a biologist will conduct a preconstruction survey for giant garter snake and its habitat at each site where construction activities will occur. This survey will identify and document the specific locations of suitable habitat within or adjacent to proposed construction areas.	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Central Valley to retain USFWS-approved qualified biologist to perform surveys.	Central Valley to provide verification to CPUC of compliance with measure as defined. Central Valley to provide CPUC and USFWS copies of survey maps and documentation prior to construction of the applicable phase(s).	Prior to and during construction for all areas identified as suitable giant garter snake habitat.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			The biologist will be responsible for submitting survey maps and immediately reporting the presence of the species, if found, to the USFWS in order to determine appropriate actions. If giant garter snake habitat is identified during the preconstruction survey identified above, Central Valley will: • Avoid construction activities within 200 feet from the banks of giant garter snake aquatic habitat and confine movement of heavy equipment to existing roadways to minimize habitat disturbance to the maximum extent feasible. • Time construction activities within habitat so that they occur between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened because snakes are expected to actively move and avoid danger. • Inform construction personnel to recognize giant garter snakes and their habitat. Construction personnel should receive worker environmental awareness training prior to undertaking work at construction sites. • Survey the project area for giant garter snakes 24 hours prior to initiating construction activities. After construction has been initiated, a biologist will be available thereafter. If a snake is encountered during construction, the biologist will have the authority to stop all construction activity until appropriate corrective measures can be completed or it has been determined that the snake will not be harmed. A survey of the project area should be repeated if a lapse in construction activity of 2 weeks or greater has occurred. Sightings and acknowledgement of incidental			

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			take will be reported to the USFWS immediately. • Confine clearing to the minimum area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project area as an environmentally sensitive area. This area should be avoided by all construction personnel. • Ensure any dewatered habitat remains dry for at least 15 consecutive days after April 15 and prior to excavating or filling the dewatered habitat. • Remove temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions after construction activities. Restoration work may include such activities such as replanting species removed from banks or replanting emergent vegetation in the active channel.			
Potential to impact giant garter snake habitat.		BIO-13	Central Valley will compensate for temporary disturbance of giant garter snake habitat. This mitigation will be determined through consultation with USFWS and ACOE and provided in the Biological Opinion. Based on a review of the Biological Opinions that were issued for the Wild Goose Gas Storage Expansion and Pacific Gas and Electric (PG&E) Colusa Generating Station Projects, the USFWS will likely require a 1:1 ratio for temporary impacts to giant garter snake habitat. This mitigation ratio is consistent with the USFWS Programmatic Formal Consultation for ACOE 404 Permitted Projects with Relatively Small Effects on Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties, California (USFWS 1997).	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Central Valley to provide a copy of the final Biological Opinion to the CPUC prior to construction of the applicable phase(s).	Central Valley to provide verification to CPUC of compliance with measure as defined.	Prior to construction for all areas identified as suitable giant garter snake habitat.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			The Biological Opinion will be provided to the CPUC to support their issuance of a notice to proceed for project components that support suitable giant garter snake upland and aquatic habitat.			
Potential to impact vernal pool fairy shrimp and vernal pool tadpole shrimp habitat.	—	BIO-14	Central Valley will avoid potential direct and indirect disturbance of vernal pool fairy shrimp and vernal pool tadpole shrimp habitat by implementing the following measures: • The on-site biological monitor will be present during ground disturbance activities occurring west of the Glenn-Colusa Canal to ensure that habitat is avoided and will have the authority to stop all construction activities that may result in the destruction of habitat. • Central Valley will prohibit all activities within 250 feet of suitable seasonal wetland habitat (unless there is a physical barrier such as a road or berm that eliminates a hydrologic connection and potential for indirect impacts to habitat during the winter months). This would include alteration of topography, dumping, burning, burying of garbage or fill materials, construction of access roads, placement of stormwater drains, and the use of pesticides or other toxic chemicals.	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Central Valley to retain qualified biologist to perform monitoring.	Central Valley to provide verification to CPUC of compliance with measure as defined.	Prior to and during construction for all areas identified as suitable vernal pool fairy shrimp and vernal pool tadpole shrimp habitat.
Potential to impact giant garter snake habitat.	BIO-1	—	Central Valley will implement all conditions and measures stipulated within the Biological Opinion to be issued by the U.S. Fish and Wildlife Service (USFWS) at the conclusion of the Section 7 consultation with the U.S. Army Corps of Engineers (ACOE) to minimize and/or avoid take and direct and indirect impacts on giant garter snake. A copy of the final Biological Opinion shall be submitted to the CPUC prior to any construction that would impact giant garter snakes or habitat potentially supporting	Central Valley to implement this measure as defined and incorporate commitments into construction contracts. Central Valley to provide a copy of the final Biological Opinion to	Central Valley to provide verification of compliance with measure as defined. CPUC to review final Biological Opinion.	Prior to construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			this species, as evidence of the commitment by Central Valley to implement all conditions and measures contained therein.	the CPUC prior to construction of the applicable phase(s).		
Potential to impact the valley elderberry longhorn beetle.	BIO-2	—	Central Valley will implement all conditions and measures stipulated within the Biological Opinion to be issued by the USFWS at the conclusion of the Section 7 consultation with the ACOE to minimize and/or avoid take and direct and indirect impacts on valley elderberry longhorn beetle (VELB). A copy of the final Biological Opinion shall be submitted to the CPUC prior to any construction that would impact VELB or habitat potentially supporting this species as evidence of the commitment by Central Valley to implement all conditions and measures contained therein.	Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts. Copies of the final Biological Opinion will be provided to the CPUC prior to construction of the applicable phase(s).	Central Valley to provide verification to the CPUC of compliance with measure as defined. CPUC to review the final Biological Opinion.	Prior to construction.
Potential for impacts to wetlands.	BIO-3	—	Central Valley shall submit documentation of Section 404 wetland fill authorization to the CPUC prior to the start of construction. All conditions, stipulations, and measures to avoid, minimize, and/or mitigate for impacts to wetlands and other waters of the U.S. described and contained within the authorized permit shall be implemented by Central Valley, as approved by the CPUC. Documentation verifying the approved ACOE fill permit and associated conditions shall be presented to the CPUC prior to any project construction that would impact wetlands and other waters of the U.S. as evidence of the commitment by Central Valley to implement all conditions and measures contained therein.	Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts. Copies of the Section 404 authorization will be provided to the CPUC prior to construction of the applicable phase(s).	Central Valley to provide verification of compliance with measure as defined. CPUC to review the Section 404 authorization.	Prior to construction.
Potential for wildlife to be	BIO-4	—	In order to prevent potential impacts to wildlife that may fall into open construction trenches associated	Central Valley to implement mitigation	Central Valley to provide verification	Prior to and during

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
trapped in ditches due to trenching activities during construction.			with the connecting pipelines, the trenches shall be either covered with plywood, tarps, metal plates, or some other similar material, with the edges covered by soil, on a daily basis or will be backfilled on a daily basis. If the trenches are to be left open, escape ramps will be constructed at no more than 1,000-foot intervals along the sidewalls of the trench with at least one ramp placed at either end of the trench. The escape ramps must be at a 2:1 slope or less and may be constructed of any material (e.g., soil, wooden boards) so long as the ramps are placed immediately adjacent to a sidewall. Escape ramps shall also be placed within any bore pits that will remain open during construction activities. The spacing and design of the ramps shall consider the location and dimension of the bore pits and shall be at the discretion of the monitoring biologist. In addition to installing escape ramps, the full-time biological monitor that will be on site during all construction activities will conduct regular surveys of all open pits and trenches, beginning in the morning prior to construction activities and throughout the day, in search of any wildlife that may have fallen into the bore pits or open trenches. Any animals observed in the bore pits or trenches will be guided up available escape ramps or will be captured and moved out of the construction area. This survey effort will be documented by the biologist in the daily log and reported to the CPUC at the end of the week. If a state-listed or federally listed species (such as giant garter snake) requires removal from the bore pit or trench, this handling effort will be subject to the conditions of the Biological Opinion.	measure as defined and incorporate commitments into construction contracts.	to CPUC of measure including submittal of construction contract. Survey efforts will be documented by the biologist in the daily log and reported to the CPUC at the end of each week.	construction.
Construction of the proposed project	—	CR-1	Prior to construction, Central Valley will retain the services of a professional archaeologist to conduct	Central Valley to retain a qualified	The qualifications of the qualified	During ground-breaking

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
could affect undiscovered cultural resources.			on-site pedestrian inspections of those portions of the project area that are not flooded and that are considered by the archaeologist to have the potential to have archaeological deposits, and which have not already been subjected to archaeological inspection. Any identified cultural resources will be recorded on standard Department of Parks and Recreation site record forms. The archaeologist will consult with Central Valley to determine methods of avoiding impacts (such as boring under the resource or routing around the resource) on any potentially significant cultural resources that are identified as a result of these additional investigations. If any potentially significant cultural resources cannot be avoided, then additional documentation and data recovery efforts will be implemented by a qualified archaeologist in consultation with CPUC, ACOE, and the State Historic Preservation Officer. Additional documentation will include preparation of formal National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) evaluations of recorded resources.	archaeologist to perform construction monitoring. Archaeologist to provide completed site forms to Central Valley and CPUC. Central Valley to provide additional documentation, as necessary, to CPUC, ACOE, and the State Historical Preservation Office (SHPO).	archaeologist shall be provided to the CPUC at least 2 weeks prior to construction. CPUC to review completed site forms.	activities in all construction areas.
Construction of the proposed project could affect undiscovered cultural resources.	—	CR-2	Central Valley and its construction contractor will take the steps specified below during project construction. A qualified archaeological monitor will inspect all ground-disturbing activities associated with pipeline construction preparation. Construction preparation will include removal of topsoil in agricultural areas, formation of berms to restrict flooding, and grading of staging areas. If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are discovered inadvertently during ground-disturbing activities, work will stop in the area of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment	Central Valley to retain a qualified archaeologist to perform construction monitoring. Central Valley to contact county coroner if human remains are found. Coroner to contact Native American Heritage Commission (NAHC)	The qualifications of the qualified archaeologist shall be submitted to the CPUC prior to construction. CPUC and Central Valley monitor to ensure work is suspended upon discovery of resources to ensure avoidance of all	During ground-breaking activities in all construction areas.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			measures in consultation with CPUC, the State Historic Preservation Officer, and other appropriate agencies. In the event that human remains are encountered, Applicant Proposed Measure CR-3 will be implemented.	if appropriate.	significant cultural resources. If avoidance is not possible upon conclusion of evaluations, data recovery research program exhausts potential of site to yield further important information.	
Construction of the proposed project could affect undiscovered cultural resources.	CUL-1	—	In the event that any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, such as chipped or ground stone, historic debris, building foundation, or human bones, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find. If any find is determined to be significant, representatives of Central Valley, CPUC, and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation, with the ultimate determination to be made by the CPUC. All significant cultural materials recovered shall be subject to scientific analysis; professional museum curation, as necessary; and a report prepared by a specialist according to current professional standards. In considering any suggested mitigation proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the CPUC and Central Valley shall determine whether avoidance is	If necessary during monitoring, Central Valley's archaeologist to prepare ADRP and meet with and submit to CPUC for review within 2 weeks of discovery. Central Valley to implement data recovery as specified in ADRP.	CPUC and Central Valley monitor to ensure work is suspended upon discovery of resources to ensure avoidance of all significant cultural resources. CPUC to review completed ADRP. If avoidance is not possible upon conclusion of evaluations, data recovery research program exhausts potential of site to yield further important information.	During ground-breaking activities in all construction areas.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is carried out. If the CPUC, in consultation with the qualified archaeologist, determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, Central Valley will: • Re-design the project to avoid any adverse effect on the significant archeological resource; or • Implement an archeological data recovery program (ADRP), unless the qualified archaeologist determines that the archeological resource is of greater interpretive use than research significance, and that interpretive use of the resource is feasible. If the circumstances warrant an ADRP, such a program shall be conducted. The project archaeologist and the CPUC shall meet and consult to determine the scope of the ADRP. The archaeologist shall prepare a draft ADRP that shall be submitted to the CPUC for review and approval. The ADRP shall identify how the proposed ADRP would preserve the significant information the archeological resource is expected to contain. That is, the ADRP shall identify the scientific/historical research questions that are applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in			

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical.			
Construction of the proposed project could affect undiscovered Native American human remains.	—	CR-3	If human remains of Native American origin are discovered during project construction, it will be necessary to comply with state laws relating to the disposition of Native American burials, which fall under the jurisdiction of the Native American Heritage Commission (NAHC) (Public Resources Code, Section 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains, until the following occurs: • The Colusa County Coroner has been informed and has determined that no investigation of the cause of death is required • If the remains are of Native American origin: o The descendents of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code, Section 5097.98 o NAHC is unable to identify a descendant or the descendant fails to make a recommendation within 24 hours after being notified by the NAHC.	Central Valley to contact county coroner if human remains are found. Central Valley and coroner to contact NAHC.	CPUC and NAHC to review extraction plan if needed. CPUC and Central Valley monitor to ensure work is suspended upon discovery of resources to ensure avoidance of all significant cultural resources. If avoidance is not possible upon conclusion of evaluations, data recovery research program exhausts potential of site to yield further important information. The qualifications of the qualified archeologist shall be provided to the CPUC.	During ground-breaking activities in all construction areas.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential impact paleontological resources during construction.	—	CR-4	Central Valley will implement the following measures to avoid potential impacts on buried or previously unidentified paleontological resources. ***Conduct paleontological resource training.*** As part of the preconstruction environmental training program, construction workers will be provided an overview of the paleontological resources that could occur in the project area. The training will be conducted to help construction workers to (1) identify potential paleontological resources encountered during excavation, and (2) review procedures in the event that a potential fossil is found. Specifically, the training may include a discussion of the following: • Fossil identification (the paleontologist may present example fossils to the workers) • The prohibition of collecting or intentionally disturbing fossils • Stopping all excavation and ground-disturbing work within 100 feet of the find • Procedures for notifying supervisors and site monitoring staff • A discussion of the paleontologist's authority to redirect or stop certain work operations • An overview of the actions that the paleontologist may take to identify the sensitivity of a fossil and to recover and curate a fossil. ***Stop work if paleontological resources are discovered during construction.*** If a vertebrate fossil is discovered during construction, the contractor will stop work immediately in the area of the find until a qualified professional vertebrate paleontologist can assess the nature and importance of the find and recommend a course of action in	Central Valley to provide training as part of the Worker Training Program.	CPUC to inspect periodically to prevent destruction of non-renewable Paleontologic resources. CPUC to review and approve monitoring results report that provides the fossils found and their significance.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			consultation with CPUC and other appropriate agencies. If the fossil is determined to be of scientific importance, the course of action will involve preparation, recovery, and museum curation of the fossil. The course of action may also include preparation of a report for publication describing the find. Central Valley will be responsible for ensuring that the recommendations of the paleontologist regarding treatment and reporting are implemented.			
Exposure of people or structures to ground acceleration or shaking, which could damage project components.	—	GEO-1	Central Valley will retain a qualified professional geologist or geotechnical engineer to perform a site-specific seismic analysis for the project. The analysis will develop estimated peak ground accelerations and response spectra for the pipeline crossing site. The analysis will use geologic and seismic parameters, including distances to faults, major historical earthquakes, regional seismicity, and subsurface conditions.	Central Valley to implement measures as defined and provide copies of geotechnical evaluations to the CPUC prior to construction of the applicable phase(s).	CPUC to verify that design has incorporated specific conditions to remediate seismic stress impacts.	Prior to construction.
Exposure of people or structures to ground acceleration or shaking, which could damage project components.	—	GEO-2	Central Valley will retain an expert in steel pipeline response to earthquakes who will use the results from the ground acceleration and liquefaction study (APM GEO-1) to assess the gas pipeline response to seismic, ground shaking, liquefaction, dynamic compaction, lateral spreading, and strains due to seismic wave propagation. The results and any recommendations contained in this analysis will be used in the design of the pipeline.	Central Valley to implement measure as defined and to retain expert. Central Valley to submit results and any recommendations to CPUC for review and approval prior to construction of the applicable phase(s).	CPUC to review results and verify that design has incorporated specific conditions to remediate seismic stress impacts.	Prior to construction.
Project structures and facilities could be damaged as a result of seismically	—	GEO-3	Central Valley will ensure that the project is constructed in accordance with all applicable state and county building and construction codes and ordinances related to earthquake safety and structural stability during ground shaking for	Central Valley to implement measure as defined. Central Valley to submit final design and	CPUC to verify that design has incorporated specific conditions to remediate	Prior to construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
induced ground shaking.			aboveground structures. In addition, Central Valley will install safety vibration sensors in all relevant equipment to shut down operations should an earthquake occur that is of a magnitude that could jeopardize the integrity of the facilities. To support the project design, geotechnical soil borings will be performed to the extent necessary to determine the seismic structural design and construction requirements prescribed in the 2007 California Building Code (CBC).	geotechnical borings results to CPUC and DOGGR for their review and approval prior to construction of the applicable phase(s).	impacts related to earthquake safety and structural stability.	
Exposure of people or structures to seismic related ground-failure, including liquefaction, which could damage project components.	—	GEO-4	Central Valley will conduct site-specific geotechnical studies and implement special construction in liquefaction-prone and expansive soil areas. Where appropriate, the measures listed below will be incorporated into the final facilities design: • Excavation and removal or recompaction of liquefiable soils • In situ ground densification • Ground modification and improvement • Deep foundations • Reinforced shallow foundations • Reinforced structures to resist deformation during liquefaction.	Central Valley to implement measure as defined and submit site-specific geotechnical analysis to CPUC for review and approval prior to construction of the applicable phase(s).	CPUC to verify that design has incorporated specific conditions to remediate impacts caused by liquefaction-prone and expansive soils.	Prior to construction.
Potential for landslides or slumping at channel and canal pipeline crossings.	—	GEO-5	Central Valley will ensure that the project is constructed in accordance with all applicable state and county building and construction codes and ordinances related to creek, drainage, and canal crossings. A qualified geologist and geotechnical engineer will be retained to evaluate the stability of the slopes or the pipeline design depth relative to existing slopes, or both, within these water drainages and canals.	Central Valley to implement measure as defined. Central Valley to submit final design to CPUC and California Department of Conservation, Division of Oil, Gas, and Geothermal	CPUC to verify that design has incorporated specific conditions as defined.	Prior to construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
				Resources (DOGGR) for their review and approval prior to construction of the applicable phase(s).		
Potential hazardous substance spills during construction.	—	HAZ-1	The construction equipment used for the proposed project will require periodic maintenance and refueling. To reduce the potential for contamination by spills, no refueling, storage, servicing, or maintenance of equipment will be allowed within 100 feet of sensitive environmental resources. No refueling or servicing will be allowed without the placement of absorbent material or drip pans underneath the vehicle to contain spilled fuel. Any fluids drained from the machinery during servicing will be collected in leak-proof containers and taken to an appropriate disposal or recycling facility. If such activities result in spilling or accumulation of a product on the soil, the contaminated soil will be assessed and disposed of properly. Under no circumstances will contaminated soils be added to a spoils pile. Mobile refueling trucks likely will be used for on-site refueling of construction equipment. The refueling trucks will be independently licensed and regulated to haul and dispense fuels to ensure that the appropriate spill prevention techniques are implemented. All maintenance materials (oils, grease, lubricants, antifreeze, and similar materials) will be stored at off-site staging areas. If these materials are required during field operations, they will be placed in a designated area away from site activities and sensitive resources.	Central Valley to incorporate measure as defined and incorporate into construction contracts.	CPUC to ensure that commitments have been incorporated into construction contract specifications. CPUC to inspect periodically to ensure measure is being implemented.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			During construction, vehicles and equipment not in use will be parked or stored at least 100 feet from water bodies, wetlands, known archaeological sites, and other sensitive resource areas. These areas will be identified on the construction drawings, as appropriate. All washdown activities will be conducted at least 100 feet from sensitive environmental resources.			
Potential hazardous substance spills during construction.	—	HAZ-2	Central Valley will prepare a comprehensive Construction and Operation Safety and Emergency Response Plan that includes hazardous substance control, worker health and safety, incident response, and fire prevention and management. Each of these plan elements is briefly described below. The plan will be prepared prior to construction and will be submitted to the CPUC for review and approval. ***Release of Hazardous Substances and Emergency Response Element.*** This element of the plan will include measures that will be implemented if an accidental release occurs or if any subsurface hazardous materials are encountered during construction and during future operation of the facility. The provisions outlined in this plan will include telephone numbers of county and state agencies and primary, secondary, and final clean-up procedures. The plan will include the following measures to address hazardous materials generated from construction-related activities: • Diesel fuel and petroleum-based lubricants will be stored only at designated staging areas. • All hazardous material spills or threatened releases—including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of	Central Valley to prepare a Construction and Operation Safety and Emergency Response Plan as defined.	Central Valley to provide CPUC copies of all plans developed in compliance with hazardous materials regulations at least 30 days prior to construction of the applicable phase(s). CPUC to review Construction and Operation Safety and Emergency Response Plan to ensure compliance with measure.	Prior to issuance of grading permit(s).

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			the quantity spilled—must be reported immediately if the spill has entered or threatens to enter a water of the state, has caused injury to a person, or threatens injury to public health. ***Sudden Uncontrolled Release of Natural Gas and Emergency Response Element.*** This element of the plan will include measures that will be implemented if there was a failure or rupture of a pipeline or compressor station component during future operation of the facilities. The provisions outlined in this plan will include a callout procedure with telephone numbers of local fire and police responders, as well as county and state agencies. The plan will address public safety measures, emergency evacuation routes, and traffic control. Coordination and training with other parties like PG&E and the local fire and police departments will also be part of this plan. ***Worker Health and Safety Element.*** This element of the plan will include provisions that establish worker training. This portion of the plan will also establish security measures to prevent unauthorized entry to cleanup sites and to reduce hazards outside the investigation/cleanup area. It will also address gas leaks, methods of evacuation, and general protection measures. ***Fire Prevention and Management Element.*** To minimize the potential fire risks during summer construction activities, this element of the plan will identify fire management measures that will be implemented during construction and operation. The plan will include the notification procedures and emergency fire precautions listed below: • All internal combustion engines, stationary and mobile, will meet applicable regulatory standards.			

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			• Light trucks and cars with factory-installed (type) mufflers, in good condition, may be used on roads where the roadway is cleared of all vegetation. • "No Smoking" signs and fire rules will be posted at the contractor field offices and areas visible to employees during the fire season. • Equipment parking areas and small stationary engine sites will be cleared of all extraneous flammable materials. • Fire extinguishers will be installed at the compressor station and metering station. • Employee training in use of extinguishers and communication with the local fire departments will be provided to all personnel.			
Potential for impact to the public or environment due to use of hazardous materials.	HAZ-1	—	Central Valley and/or the project contractor will contain drilling mud and cuttings from well drilling and HDD in portable tanks and will remove and dispose of these at approved facilities for this type of waste.	Central Valley to incorporate measure as defined and incorporate into construction contracts.	Central Valley to document compliance with this measure. CPUC to ensure that commitments have been incorporated into construction contract specifications. CPUC to inspect periodically to ensure measure is being implemented.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential for impact to the public or environment due to use of hazardous materials.	HAZ-2	—	All personnel working at the compressor station and remote well pad site will be trained in general and specific hazardous chemical safety issues and response procedures.	Central Valley to implement this measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to CPUC of worker training program and compliance with measure as defined.	Prior to construction.
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-3	—	In the event that soils suspected of being contaminated, based on visual or olfactory evidence or from portable chemical monitoring devices, are removed during excavation activities along the pipeline corridor, the excavated soil will be tested and, if contaminated above soil action levels, shall be disposed of at a licensed waste facility. Any excavated areas which have an odor due to contaminated soil will be covered while one or more samples are being tested to determine the level of contamination. The presence of known or suspected contaminated soil or groundwater will require the supervision of testing and investigation by a licensed professional geologist or engineer, as appropriate, to meet state and federal regulations.	Central Valley to implement measure. Central Valley to retain a licensed professional geologist or engineer, as appropriate to perform testing.	CPUC to verify to ensure that potential exposure of workers, the public, or the environment to hazardous materials in contaminated soil has been minimized.	During construction.
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-4	—	If asbestos-cement pipe (ACP) is encountered during construction, the pipe will be removed by hazardous materials trained employees from the construction work area and stockpiled to the side. Containment and removal may be carried out simultaneously with the continuation of construction to the extent possible.	Central Valley to implement measure as defined.	Central Valley to document compliance with this measure and provide verification to the CPUC.	During construction.
Potential for impact to the public or environment due	HAZ-5	—	If existing underground structures cannot be avoided, structures will be crossed by boring or ditching under them unless the owner of the structures allows them to be removed or the natural gas pipeline to be	Central Valley to implement measure as defined and incorporate into	CPUC to ensure that commitments have been incorporated into	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
to release of hazardous materials into the environment.			installed over them. The trench will be hand-dug in areas in close proximity to existing pipelines and other structures. A minimum clearance of 1 foot shall be maintained, where feasible, between such lines or structures and the line being laid, unless otherwise specified. Special procedures, such as placement of protective materials between the pipeline and existing structure, will be followed to protect existing structures where this clearance is not feasible.	construction contracts.	construction contract specifications. CPUC to inspect periodically to ensure measure is being implemented.	
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-6	—	Central Valley will prepare and implement a Gas Monitoring Plan prior to construction. The Gas Monitoring Plan will address the type and frequency of gas monitoring well tests, both surface and in shallow soils; the frequency of wellhead inspections by a qualified operator; monitoring requirements for abandoned wellheads; and reporting requirements. The Gas Monitoring Plan will be submitted to the California Department of ~~Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR)~~ Toxic Substances Control (DTSC). DTSC will review results of the Gas Monitoring Plan and request implementation of any additional monitoring that is required as a result of the information obtained. ~~for approval; a~~A copy will be submitted to the CPUC. Dudek will be responsible for monitoring natural gas at shallow depths near the ground surface. The four primary elements of this gas monitoring plan are: 1. Establish a baseline or background level for natural gas at the surface prior to storage operations. This will allow comparison and sound evaluation of future project-related gas monitoring results. 2. Periodically measure for levels of detectable gas at predetermined surface locations. This will allow the	Central Valley to prepare a Gas Monitoring Plan as defined, and submit to ~~DOGGR~~ DTSC for review, and approval. A copy will also be submitted to the CPUC.	~~DOGGR~~ DTCS review of the Gas Monitoring Plan. ~~to ensure compliance with measure.~~ Central Valley to provide copy of the plan and verification of submittal to ~~DOGGR~~ DTSC and CPUC.	Prior to construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			storage operator to ascertain whether the levels of gas detected at the surface, if any, have increased noticeably above the previously established background levels. It is expected that small variations may occur, which may not individually rise to any significant level, but trends over several sample periods could provide an indication of a change that requires further investigation. 3. Quantify and, if necessary, qualify any changes in an attempt to identify the source. First, based on sampling and testing of gas samples, determine whether the gas quality signature is similar to the native gas production in the area or to pipeline gas. Gas in the storage reservoirs will be almost exclusively pipeline gas with components that should be relatively easy to identify compared to native gas. 4. Based on any specific changes observed, Central Valley shall respond to the data and corresponding analysis with additional testing, surveillance, or mitigation, as appropriate. If the data indicates that any detected surface gas is from the storage operation, then a plan will be developed to identify the leaking pipeline, well, or reservoir, including procedures to further test and correct the situation. The overall gas monitoring plan will be evaluated after 5 years to determine its future usefulness. The monitoring plan will consist of the following features: • Permanent monitoring/testing sites at the project remote well pad site and compressor station site • Leakage surveys at predetermined locations at least once each year • Utilization of standard, industry-approved gas			

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			measurement equipment • Field personnel trained on gas sampling methods and instrumentation, identifying stressed vegetation, and other indicators of potential leakage.			

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-7	—	Central Valley will conduct annual temperature logging inside injection/withdrawal well and observation well casings. A temperature tool will be run into each injection and observation well to measure temperature anomalies. In the event that anomalous temperature gradients are identified, or if elevated gas concentrations are detected in the shallow soils during monitoring conducted as part of Mitigation Measure HAZ-6, Central Valley will further investigate to determine the cause and source of the anomaly. In the event there is a casing integrity issue, practicable steps will be taken in a concerted effort to minimize the impact of the leak until repairs can be made. Leaks will be repaired as soon as possible in the case of a leak that is potentially hazardous to human health, as soon as reasonable without causing additional hazards, and documentation will be sent to DOGGR no later than 4 months after leak detection. A copy of the documentation will be submitted to the CPUC.	Central Valley to implement measure as defined, and submit documentation to DOGGR for review and approval.	DOGGR review of documentation to ensure compliance with measure. Central Valley to provide copy of documentation and verification of submittal to DOGGR to CPUC.	During operation; documentation to be sent to DOGGR and CPUC no later than 4 months after leak detection.
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-8	—	If routine surface or subsurface gas monitoring indicates that a well may be leaking (e.g., methane concentrations above baseline levels gas bubbles, distressed vegetation), Central Valley will report it immediately to the DOGGR and implement the appropriate remedial actions in consultation with the DOGGR. Central Valley will submit all well remediation and repair records to the DOGGR.	Central Valley to implement measure as defined, and submit documentation to DOGGR for review and approval.	DOGGR review of documentation to ensure compliance with measure. Central Valley to provide copy of documentation and verification of submittal to DOGGR to CPUC.	During operation.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-9	—	• Inspect produced-water storage tank(s) for integrity/leakage on an annual basis. • Meter produced and injected formation water; periodically reconcile produced versus injected formation water quantities. • Construct secondary containment berm around tank(s). • Leak/pressure testing of the casing from below the base of freshwater to ground surface to verify that under injection pressures the well cannot leak saline fluid into the freshwater aquifer zones.	Central Valley to implement measure as defined, and submit documentation to DOGGR for review and approval.	DOGGR review of documentation to ensure compliance with measure. Central Valley to provide copy of documentation and verification of submittal to DOGGR to CPUC.	Containment berm constructed prior to operation. Inspections and testing during operation.
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-10	—	• Proper gas well design. The primary aquifer protection mechanism is structurally sound, leak-free casing, and there is a competent cement bond across the base of freshwater with either the surface casing or the injection/production casing. The well design is regulated by DOGGR. Verification of adherence to well design is accomplished by inspection and by running cement bond logs after construction is completed. • Periodic monitoring for indications of leakage. This includes annual temperature logging of the wells, which will detect vertical formation fluid/gas movement within the borehole area above the zone of intent. • Well work to repair casing and/or annular cement seal leakage if detected.	Central Valley to implement measure as defined, and submit documentation to DOGGR for review and approval.	DOGGR review of documentation to ensure compliance with measure. Central Valley to provide copy of documentation and verification of submittal to DOGGR to CPUC.	Prior to construction and monitoring and repairs during operation.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Potential for project to result in a safety hazard for people residing or working near a private airstrip.	HAZ-11~~9~~	—	During construction, Central Valley will coordinate with the adjacent airstrip landowner and implement measures to avoid conflicts with air traffic or crop spraying activities.	Central Valley to implement measure as defined.	Central Valley to document compliance with this measure and provide verification to the CPUC. CPUC to inspect periodically to ensure measure is being implemented.	During construction.
Potential to violate water quality standards or waste discharge requirements.	—	HYDRO-1	The reclamation effort will involve restoration of temporarily disturbed areas (where necessary) and installation of erosion control measures to comply with County grading permits and the NPDES permit from the State Water Board. Central Valley will prepare a SWPPP that describes when, where, and how such site reclamation will occur. Site-specific erosion control measures (nonvegetative or mechanical techniques) will be determined on a site-specific basis as part of this SWPPP. As part of the SWPPP, erosion and sediment control measures will be implemented to reduce the amount of soil that is displaced or transported from a land area and to control the discharge of soil particles that are displaced or transported. The standard control measures and practices listed below will be implemented during and after construction to reduce accelerated soil erosion and sedimentation impacts to a less-than-significant level: • Remove only the vegetation that it is absolutely necessary to remove • Avoid off-road vehicle use outside the work zone • Avoid excessive trips along the ROW or access	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to receive approval of plans from Colusa County Public Works Department. Central Valley to provide verification to CPUC of measure, including submittal of construction contract at least 2 weeks prior to construction of the applicable phase(s).	Prior to issuance of grading permit.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			roads • Instruct all personnel on stormwater pollution prevention concepts to ensure that all are conscious of how their actions affect the potential for erosion and sedimentation • Perform initial cleanup • Compact subsurface backfill material • Apply an appropriate seed mix, where determined necessary, in nonagricultural areas and through coordination with the landowner. Construction inspectors will be on site during all construction activities and will reinforce the importance of confining all vehicular traffic to the existing ROW and access roads.			
Potential to violate water quality standards or waste discharge requirements.	—	HYDRO-2	Prior to construction of the gas pipeline, Central Valley will prepare a dewatering and discharge plan that describes the methods of dewatering and filtering the trench and hydrostatic test water, general locations where groundwater and hydrostatic test water will be discharged, and monitoring methods to ensure that surface waterways are not affected by the discharged water. A copy of this plan will be submitted to the CPUC for review and approval prior to its implementation.	Central Valley to prepare a dewatering and discharge plan as defined.	CPUC to review dewatering and discharge plan to ensure compliance with measure prior to construction of the applicable phase(s).	Prior to construction.
Potential to degrade water quality.	HYDRO-1	—	Central Valley shall develop and implement a groundwater monitoring plan that will include both pre-injection and post-injection monitoring of groundwater quality to identify any seepage of stored natural gas into the groundwater aquifers. In the event that stored natural gas is detected above the reservoir, Central Valley shall immediately consult with DOGGR and the Central Valley Regional Water Quality Control Board (RWQCB) to determine the	Central Valley to prepare a groundwater monitoring plan as defined, and as necessary, coordinate with DOGGR and RWQCB.	Central Valley to monitor groundwater and provide reports to DOGGR and RWQCB. CPUC to review groundwater monitoring plan to ensure compliance	Prior to construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			appropriate remedial action required, including depressurization of the reservoir or other appropriate measures approved by DOGGR and the RWQCB. The monitoring and any potential remediation shall be under the supervision of DOGGR and RWQCB.	Commitments of plan shall be incorporated into construction contract.	with measure.	
Construction activities would temporarily increase local noise levels.	—	NOI-1	Central Valley will incorporate the following measures into the construction contract specifications to reduce and control noise generated from construction-related activities such that construction noise does not exceed 60 dBA-Lmax between 7:00 p.m. and 7:00 a.m. weekdays and all day on Sundays and legal holidays at adjacent residences. • Prohibit noise-generating construction activity within 900 feet of occupied dwelling units between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and all day on Sundays and legal holidays, unless written approval is obtained from the resident. • Ensure that all construction equipment has sound-control devices no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust. • Implement appropriate additional noise-reducing measures as may be necessary, including but not limited to: o Changing the location of stationary construction equipment o Shutting off idling equipment o Providing local enclosures or barriers around noise-generating equipment o Rescheduling construction activity o Notifying nearby residents in advance of construction work.	Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts.	CPUC to ensure that restrictions have been incorporated into construction contracts. CPUC to inspect periodically for evidence of successful compliance with measure as defined.	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
Construction activities would temporarily increase local noise levels.	NOI-1	—	Central Valley will incorporate specifications to reduce and control noise generated from construction-related activities such that general construction noise Monday through Saturday, 7:00 a.m. to 7:00 p.m., does not exceed 75 dBA Leq(h) at noise sensitive receptors (e.g., occupied residences, churches, schools) into the project construction contract.	Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts.	CPUC to ensure that restrictions have been incorporated into construction contracts. CPUC to inspect periodically for evidence of successful compliance with measure as defined.	Prior to and during construction.
Construction activities would temporarily increase local noise levels.	NOI-2	—	Prior to drill rig set up activities and prior to commencement of nighttime activities, Central Valley will meet with nearby noise sensitive areas (NSAs) to explain the project schedule and planned well site activities. In the event that noise attributable to drill rig activities becomes objectionable and if it exceeds applicable criteria, Central Valley will offer temporary relocation or compensation.	Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to CPUC of measure, including a communication log that provides details of concerns raised by nearby sensitive areas and Central Valley's action plan to address concerns. The communication log shall be provided to CPUC on a weekly basis.	Prior to and during construction.
Construction activities would temporarily increase local noise levels.	NOI-3	—	Central Valley shall install a minimum 12-foot-tall temporary noise barrier around three sides of the drill rig during drilling activities at proposed observation well Zumwalt-2. The actual height of the noise barrier may vary depending on the selected drill rig; however, the noise barrier material shall have a minimum sound transmission class (STC) rating of	Central Valley to implement mitigation measure as defined and incorporate commitments into construction	Central Valley to provide verification to CPUC of measure through written report prepared by an acoustician who	Prior to and during construction.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			20. The open side of the noise barrier shall face away from the adjacent closest residence and the noise barrier shall reduce noise levels to 55 dB Ldn or less at the adjacent closest residence.	contracts.	documents compliance. Central Valley and CPUC to verify noise levels at closest residence are 55 dB Ldn or less.	
Construction would temporarily disrupt recreational activities.	—	REC-1	Prior to finalizing the pipeline construction schedule and engineering plans, Central Valley will contact the Sacramento and Delevan National Wildlife Refuges (NWRs) and landowners to discuss the pipeline construction schedule and appropriate measures that could be implemented to reduce the impact on seasonal recreation activities (hunting and bird watching). Measures that may be implemented to ensure that construction does not conflict with fall/winter hunting season and birding on the adjacent wildlife refuges and private properties are listed below: • Restrict construction activities to certain locations and times of day (avoiding early mornings and evening in hunting areas) • Post signs that notify recreationists of construction activities • Mail and post fliers that notify the public of construction activities.	Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts.	CPUC to verify consultation with the NWRs and landowners through meeting notes, and review of project implementation in the field.	Prior to finalizing the pipeline construction schedule and engineering plans, and during construction.
Detours, road and lane closures.	—	TRA-1	Central Valley will prepare a construction traffic plan to minimize short-term construction-related impacts on local traffic. These measures will include installation of temporary warning signs at appropriate locations along major road intersections. The signs will be placed at strategic locations near points of access and will be removed after all construction-	Central Valley to prepare construction traffic plan as defined.	Central Valley will obtain approval of construction traffic plan from Colusa County Public Works Department to ensure traffic	Prior to issuance of grading permit(s).

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
			related activities are completed. The plan will include (but may not be limited to) the measures listed below: • Coordinate with Colusa County on any lane or road closures, if needed to construct improvements • Install traffic control devices • Provide alternate routes (detours), as necessary, to route local traffic around roadway construction • Provide notification of any road closures to residents in the vicinity of construction • Provide access to driveways, private roads, and agricultural roads outside the immediate construction zone • Consult with emergency service providers and develop an emergency access plan for emergency vehicle access in and adjacent to the construction zone.		flows would be generally maintained without severe congestion. Approval from Colusa County and the construction traffic plan(s) shall be provided to CPUC prior to construction of the applicable phase(s).	
Road and lane closures.	TRA-1	—	The emergency access plan prepared as part of APM TRA-1 shall include providing access to residences along the pipeline alignment. Requirements of the plan shall include advanced notice, between 2 and 4 weeks prior to construction, by mail to adjacent property owners and emergency service providers as to where property access would be blocked, excavation plating, emergency vehicles being granted access via one open lane, short detours, and alternate routes.	Central Valley to implement measure. Central Valley to incorporate measure into construction contracts.	Central Valley will provide documentation of coordination efforts with affected adjacent property owners and emergency service providers to CPUC. Central Valley to provide CPUC with construction notices for review and approval at least 60 days prior	Prior to and during construction for all locations where temporary road or lane closures are required.

Table 6-1 (Continued): Mitigation Monitoring Program Table

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing of Action and Location
					to construction. Notices to provide advanced notice of construction activities in order to limit disruption impacts.	
Potential for discharge to not meet local water quality requirements.	U-1	—	All discharges shall be in compliance with local, state, and federal regulations pertaining to wastewater disposal. Approval shall be obtained from the Central Valley RWQCB prior to discharging water produced by dewatering and hydrotesting of pipelines.	Central Valley to implement measure as defined. Central Valley to incorporate measure into construction contracts. RWQCB approval to be submitted to CPUC.	CPUC to ensure that commitments have been incorporated into construction contracts. CPUC to verify RWQCB approval of dewatering and hydrotesting activities thereby minimizing the potential for water quality degradation.	Prior to and during construction.

Note: "—" indicates data is not applicable.

6.10 REFERENCES

14 CCR 15000–15387 and Appendix A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

California Public Resources Code, Section 21000–21177. California Environmental Quality Act, as amended.

USFWS (U.S. Fish and Wildlife Service). 1997. "Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California." Letter report from W.S. White (USFWS) to A. Champ (ACOE), November 13, 1997.

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