I. FINDINGS

At a regular meeting assembled on March 11, 2009, this Commission determined that, based on all of the evidence, including but not limited to the Initial Study, the FEIR, written and oral testimony given at meetings and hearings, and submission of testimony from the public, organizations and regulatory agencies, the following environmental impacts associated with the Project are: (1) less than significant and do not require mitigation; or (2) potentially significant and each of these impacts will be avoided or reduced to a level of insignificance through the identified mitigation measures.

II. RESOLUTION REGARDING ENVIRONMENTAL IMPACTS NOT REQUIRING MITIGATION

This Commission hereby finds that the following potential environmental impacts are less than significant and therefore do not require the imposition of mitigation measures:

A. POPULATION & HOUSING

1. Potential Impact 3.6-1: The potential to induce substantial population growth in an area, either directly or indirectly

a. Overview of Impacts

The proposed project would not include substantial population growth either directly of indirectly.

b. Construction

The maximum number of workers on the project site during construction would be approximately 40. These workers would come from the project region and would not require temporary housing. The project description does not include the development of any housing that may induce population growth. No impacts would occur.

c. Operation and Maintenance

The water pumped from Hay Ranch would be supplementing the Coso geothermal field and would not be made available for any municipal or agricultural uses that could cause immigration to the project area. Operation of the system would be maintained by COC and would not require additional workers that would move to the project area. Operation of the proposed project would not extend the operating life of the

power plant beyond planned operating periods (BLM 2006; Jahns 2007); therefore, the project would not induce substantial population growth either directly or indirectly in any of the communities in the vicinity of the project. There would be no impacts to population.

d. Decommissioning

Decommissioning would involve removing, recycling, or abandoning equipment in place. Workers would come from the surrounding area. No impacts to population and housing would occur.

2. Potential Impact 3.6-2: The potential to displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

a. Overview of Impacts

The project construction, operation and maintenance, and decommissioning would not displace inhabited housing and would not result in construction of replacement housing. (FEIR, p. 3.6-2.)

b. Construction

The proposed project involves removing a metal storage building and two uninhabitable, deteriorated mobile homes from the Hay Ranch property. Neither of these homes provides existing housing or is suitable for habitation. Removal of these buildings would not result in displacement of housing that would necessitate construction of replacement housing. The project would not otherwise displace homes or people. Impacts would not occur. (FEIR, p. 3.6-2.)

c. Operation and Maintenance

Operation would not result in the removal of any housing or displacement of people. There would be no impacts. (FEIR, p. 3.6-2.)

The project would not indirectly displace any houses or farms through impacts to water supply. The ranch at Portuguese Bench relies on artesian wells and springs to water and feed their cattle. Hydrologic studies that were performed for this project show that pumping of groundwater at Hay Ranch would not impact Portuguese Bench (refer to Section 3.8 Hydrology and Water Quality for further analysis of hydrologic impacts). Other wells in the valley, such as at Dunmovin, may become unusable without modification if the water table drops below their existing pump thresholds. Mitigation has been included in Section 3.2 Hydrology and Water Quality (mitigation measure Hydrology-2) that would require COC to refit any existing wells impacted by groundwater drawdown. Impacts would be less than significant. (FEIR, p. 3.6-3.)

d. Decommissioning

Decommissioning would involve removing, recycling, or abandoning equipment in place. This would not have any potential to displace housing. Impacts would not occur. (FEIR, p. 3.6-3.)

B. AGRICULTURAL RESOURCES

1. Potential Impact 3.8-1: Potential to conflict with existing land use designations for agricultural use

The project area does not include lands with a land use designation of "Agricultural (A)", as defined by the Inyo County General Plan. The closest "A" designated lands are located at Coso Junction, and have been fallow since at least 1991 (GBUAPCD 2004). (FEIR, p. 3.8-4.)

Agricultural land use designations in Inyo County allow for agricultural use but also limited agricultural support services, agriculturally-oriented services, agricultural processing facilities, public and quasi-public uses, and certain compatible nonagricultural activities. Construction and operation of the project would not place any facilities on lands designated Agriculture. The project would have no impact on existing land use designations for agricultural use. (FEIR, p. 3.8-4.)

2. Potential Impact 3.8-2: Potential to directly convert a significant amount of farmland to non-agricultural uses

a. Overview of Impacts

Direct conversion of potential farmland would result from using farmland for non-farming uses. Inyo County does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (FMMP 2004). The proposed project would require construction on the Hay Ranch property, which historically was a 300 acre alfalfa farm. (FEIR, p. 3.8-4.)

The proposed project would result in removal of about 5 acres of the 300 acre plot (1.7 percent). This would not be considered significant conversion of farmland and no mitigation is required. (FEIR, p. 3.8-4.)

Indirect effects from groundwater pumping on surrounding agricultural uses are addressed in Potential Impact 3.8-3. Indirect effects of groundwater pumping and use of the existing wells on potential farming on the Hay Ranch property are addressed in Potential Impact 3.8-4. (FEIR, p. 3.8-4.)

b. Construction

Project construction would last approximately 110 days. Construction is temporary and no construction activities for any part of the project would require disturbance of currently operating agricultural or grazing lands. Topsoil would be

stockpiled and spread back over the project area. Construction of facilities on approximately 60.5 acres would not result in the direct conversion of significant amount of farmland to non-agricultural uses. (FEIR, p. 3.8-5.)

c. Operation and Maintenance

Wells, Pump Lift Station, and Substation and Associated Facilities. These project components would occupy less than 5 acres of the Hay Ranch parcel. The lift pump station and associated facilities (including the 250,000 gallon storage tank) would all be located in one area of the Hay Ranch parcel. The 1.5 acre substation site would be located along the eastern boundary of the parcel. The Hay Ranch site is not currently in agricultural use, and has been fallow for over 15 years. The project would use approximately 5 acres of the approximately 300 acres available (1 .7 percent) for potential future farming, so impacts to farmland would be less than significant. (FEIR, p. 3.8-5.)

The project property could still be used for agricultural production in the future. Operation of the facilities on the Hay Ranch property would not significantly impact the use of the property as farmland, as the project would not directly convert the majority of the property to another land use. (FEIR, p. 3.8-5.)

Tanks. The 250,000 gallon water storage tank is located on the Hay Ranch property, as discussed above, and would not have a significant impact on or result in the conversion of a significant amount of farmland to non-agricultural uses. The second 1.5 million gallon tank is located south of Gill Station Coso Road, on CLNAWS property. This tank would not be located on farmland and would not convert farmland to non-agricultural uses. (FEIR, p. 3.8-5.)

Pipeline. The pipeline corridor, other than on the Hay Ranch property, does not traverse any farmlands and would not result in direct conversion of farmland to non-agricultural uses. The pipeline section between the north well and the south well on the Hay Ranch property would be installed underground; therefore, the land above the pipeline could be used for agriculture, were it economical and/or feasible to do so. There would be no direct impacts to farmland. (FEIR, p. 3.8-5.)

d. Decommissioning

Decommissioning would include removing project components and disposing, storing, or recycling them, and abandoning pipeline in place. Decommissioning would not impact farmland and would result in availability of a few more acres on the Hay Ranch property for farming. The substation would not be removed. Decommissioning would not have a direct impact on farmland or directly convert a significant amount of farmland to non-agricultural uses. (FEIR, p. 3.8-5.)

3. Potential Impact 3.8-3: Potential to indirectly convert a significant amount of farmland to non-agricultural uses through removal of water sources, removal of access to water resources, removal of available electricity, or impeding

transportation

a. Overview of Impacts

Indirect conversation of farmland could result from removal of water, electricity, or transportation needed to farm. Construction would not indirectly impact agricultural uses. (FEIR, p. 3.8-5.)

The proposed project could result in some groundwater drawdown in the Rose Valley, including in water wells. However, mitigation measures would reduce impacts to wells to less than significant levels. The project would provide a new substation to the area, which would bring a reliable source of power for farming. The project would not block any major transportation routes that are used by farmers. (FEIR, p. 3.8-5.)

b. Construction

Construction would not have effects that could result in changes in the environment that could result in conversion of farmland to non-agricultural uses. Construction on the Hay Ranch property would be temporary and ground disturbance other than for the lift pump station and substation and associated facilities would be reclaimed. Topsoil would be stockpiled and spread back over the project area. Construction would not use electricity from the existing supply. Instead, power needs would be met by temporary, California Air Resources Board certified, generators and fuel powered motors (such as on construction equipment). Project construction would not block any major transportation routes for agricultural products (US Highway 395 in the project area). Gill Station Coso Road may experience some temporary closures during installation of the project pipeline, but no farms are located along Gill Station Coso Road. Construction would not indirectly impact or result in the conversion of a significant amount of farmland to non-agricultural uses. (FEIR, p. 3.8-6.)

c. Operation and Maintenance

Operation of the entire water extraction and delivery system was thought to have some potential to affect groundwater supplies and therefore agricultural uses in the Rose Valley. (FEIR, p. 3.8-6.) However, hydrology mitigation measures discussed in detail below would reduce groundwater impacts to less than significant levels.

Pumping tests and groundwater modeling was performed for the proposed project in order to assess the extent of groundwater drawdown that may be observed and the timeframe in which drawdown may occur. See Appendix C1 for a discussion of the results of the groundwater pumping test and Appendix C2 for a discussion of the groundwater modeling. (FEIR, p. 3.8-6.)

Coso Junction is across US Highway 395 from a property currently designated as Agricultural but not currently used for agricultural production. This property has two wells on it and is also owned by Coso Operating Company. The wells

may experience drawdown over the course of the proposed project. However, mitigation measures would reduce impacts to wells to less than significant levels. Mitigation has been defined to monitor groundwater levels through the life of the project and to re-equip or re-drill any wells that are impacted by groundwater drawdown caused by the project. (FEIR, p. 3.2-33.) The existing wells would be accessible if farming were to be reinstated on this property in the future. The applicant would assume any costs for deepening those wells for future agricultural activity while in their ownership (per mitigation measure Hydrology-2). Initiation of agricultural operations at that site are at COC's discretion. (FEIR, p. 3.8-6.)

The proposed project includes a power substation and would provide better access to electrical power, if the site were farmed in the future. (FEIR, p. 3.8-6.)

The nearest agricultural land that is currently irrigated is a commercial alfalfa farm located approximately 13 miles north and east of the project site, at Cactus Flats. This farm is in a different groundwater basin than the Hay Ranch Parcel (Cactus Flats basin versus the Rose Valley basin), and water supply at the Cactus Flats alfalfa farm would not be impacted by the proposed project. There are no irrigated croplands south of the Cactus Flats farm within Inyo County. There are no currently irrigated croplands in Rose Valley. (FEIR, p. 3.8-6.)

Ranching would not be impacted by the proposed project. The Davis Ranch, located on Portuguese Bench, relies on artesian water supplies moving along the nearly vertical normal fault on their property. Their water supply would not be influenced by the proposed groundwater extraction project. Portuguese Bench is located at an elevation of approximately 3,882 feet above mean sea level (amsl). Portuguese Bench is also to the west of Hay Ranch, at the edge of the Sierra Nevada Mountains (above the Rose Valley). The Hay Ranch wells are located within the valley and at an elevation about 450 feet below Portuguese Bench. According to the hydrologic analysis (refer to Section 3.2 Hydrology and Water Quality) there would be no impact to the artesian springs at Portuguese Bench from groundwater pumping on Hay Ranch. The springs are fed by water moving along the fault coming off of the Sierra Nevada Mountains and not from the deeper aquifer in Rose Valley. Project operation would not impact ranching. (FEIR, p. 3.8-6.)

d. Decommissioning

Decommissioning would include removing project components and disposing, storing, or recycling them, and abandoning piping in place. Decommissioning would not indirectly impact farmland and would result in availability of a few more acres on the Hay Ranch property for farming. The substation would not be removed and would continue to provide electricity to local users. Decommissioning would not have an indirect impact on farmland or indirectly convert a significant amount of farmland to non-agricultural uses. (FEIR, p. 3.8-7.)

4. <u>Potential Impact 3.8-4: The potential to indirectly impact</u>

future use of the Hay Ranch property as agricultural land or preclude the property from being designated as Prime Farmland in the future

a. Overview of Impacts

Construction is temporary and would not impact the use of the project site in the future as farmland or prevent the property from being designated as Prime Farmland in the future. (FEIR, p. 3.8-7.)

The Hay Ranch property was historically used for alfalfa production. The water source was the existing wells that are currently proposed for water extraction and delivery to the Coso geothermal field. Use of the wells for water transport would not exclude potential use of the same wells to irrigate the Hay Ranch property. Alternatively, new wells could be installed for irrigation, if the owner were to decide to farm the property. Future designation of the property as Prime Farmland is speculative because (i) the land is not designated as prime agricultural lands by the U.S. Department of Agriculture or the State of California and (ii) the land has not been used for farming in the last four years. (See FEIR p. 3.8-2.). The project would not have significant impacts on potential future farming of the property. (FEIR, p. 3.8-7.)

b. Construction

Construction would not indirectly impact future use of the Hay Ranch property as agricultural land or preclude the Hay Ranch property from being designated as Prime Farmland in the future. Construction is short-term (lasting about 120 days for the pumping infrastructure and 12 months for construction of the substation). Topsoil would be stockpiled and replaced and only small amounts of water would be needed. Since construction is temporary and would only occur on a small portion of the overall property, it would not directly or indirectly impact future use of the Hay Ranch property for agriculture or impede a designation as Prime Farmland. (FEIR, p. 3.8-7.)

c. Operation and Maintenance

The Hay Ranch site is not currently in agricultural use, and has been fallow for over 15 years. The project would use approximately 5 acres of the approximately 300 acres available (1.7 percent) for potential future farming, so impacts to the future use of Hay Ranch for agricultural land or Prime Farmland would be less than significant. (FEIR, p. 3.8-7.)

The project property could still be used for agricultural production in the future. Operation of the facilities on the Hay Ranch property would not significantly impact the use of the property as farmland, as the project would not directly convert the majority of the property to another land use. (FEIR, p. 3.8-7.)

The proposed project should not preclude potential future farming of the Hay Ranch parcel or potential future designation as Prime Farmland, although it should be noted that there is currently no farmland designated in Inyo County as Prime

Farmland, Unique Farmland, or Farmland of Statewide Importance. (FEIR, p. 3.8-7.) As explained above, the Hay Ranch parcel is not prime farmland because it is not mapped as such by the U.S. Department of Agriculture or State of California and because the parcel has not been actively farmed in the last four years.

The Hay Ranch parcel is small in comparison to other farms in Inyo County (300 acres, while the largest is about 1,400 acres and the Lubkin Ranch in Lone Pine is approximately 760 acres (Larsen 2007b)) and requires deep groundwater pumping to access water supplies (over 600 feet). The likelihood that it would be designated Prime Farmland is remote. (FEIR, p. 3.8-7.)

According to Section 15125 of the CEQA Guidelines, an EIR must include a description of the existing physical environmental conditions in the vicinity of the proposed project to provide the baseline condition against which project-related impacts are compared. Normally, the baseline condition is the physical condition that exists when the Notice of Preparation is published. The baseline condition is that Hay Ranch is not agricultural land, as defined. The potential for future use of the land for agriculture or a future potential designation of the land as agricultural is speculative and therefore, the project would not have a significant impact on potential future use of the parcel as agricultural land. Prime Farmland status would be determined based on the existing conditions of the parcel and the economic environment in the future. (FEIR, p. 3.8-8.)

d. Decommissioning

Decommissioning would include removing project components and disposing, storing, or recycling them, and abandoning piping in place. Decommissioning would not indirectly impact the use of the Hay Ranch property as farmland in the future and would result in availability of a few more acres on the Hay Ranch property for farming as well as returning the existing water supply to potential agricultural usage. The substation would not be removed and would continue to provide electricity to local users and potentially to the Hay Ranch site if agriculture were resumed. Decommissioning would not have a negative indirect impact on agricultural uses of Hay Ranch. (FEIR, p. 3.8-8.)

C. PUBLIC SERVICES & UTILITIES

1. Potential Impact 3.11-1: The potential to cause significant impacts to or result in the impairment of existing public services

a. Overview of Impacts

The proposed project would not significantly affect public services in the area. Fire, emergency, and police services would be required to service the project during construction, operation, and maintenance. The effect on these services would be minor because they would not substantially increase the need for services. No new personnel and limited new facilities would be installed. Effects would not be considered

significant. (FEIR, p. 3.11-3.)

b. Construction

Construction of the proposed project would not cause significant adverse impacts to any public service providers or their ability to provide services in the region. Construction activities would not require an increased need for fire protection or inhibit fire protection because fire prevention measures would be followed (as discussed in Section 3.10 Hazards and Hazardous Materials). Project construction and staging would occur within the Hay Ranch parcel or along Gill Station Coso Road and would not block any fire access routes (per Mitigation Measure Traffic-3, as listed in Section 3.14 Traffic and Transportation). (FEIR, p. 3.11-4.)

Construction-related activities would not require expansion of schools, parks, or other public facilities because the project construction crews would be small (up to 40 people) and would be drawn from the surrounding area. Use of existing labor would not cause an increase in the need for additional schools or parks. (FEIR, p. 3.11-4.)

Construction would be short term and would not increase the need for police protection because the area is remote and does not have high crime rate. Project construction would have a less than significant impact on public services. (FEIR, p. 3.11-4.)

c. Operation and Maintenance

General police and fire protection services would be required for the proposed project. The increased service would not be considered significant because the project, including the new substation, would not result in any greater than existing need. The project would also include a large water storage tank that could be used for fire suppression if needed. The substation and lift pump station would have a front gate that would be locked to minimize the potential for vandalism and would be visited by SCE and COC staff several times per week. The substation would be grounded to prevent electric shock and surges that could ignite fires. (FEIR, p. 3.11-4.)

The project would be operated and maintained by existing Coso personnel. Operation and maintenance of the proposed project would not require expansion of fire and police protection, schools, parks, or other public facilities. Operation and maintenance of the substation would not significantly affect police and fire protection response times or create higher demand for these public services. Therefore, the proposed project would have a less than significant impact on public services. (FEIR, p. 3.11-4.)

d. Decommissioning

Decommissioning would involve removal of project components

on public lands and abandonment of the pipeline in-place. Decommissioning would not impact public services. (FEIR, p. 3.11-4.)

2. Potential Impact 3.11-2: The potential to have insufficient water supplies available to serve the project from existing entitlements and resources

a. Overview of Impacts

There would be sufficient water supplies available to serve project construction water consumption needs. Operation of the proposed project could utilize water from the Hay Ranch wells. Impacts would not be considered significant. (FEIR, p. 3.11-4.)

b. Construction

Project construction would require water for dust suppression and for potential fire suppression. Water for dust and fire suppression would be supplied by:

- The two wells across US 395 at Coso Junction
- The well at the store at Coso Junction
- The Hay Ranch wells

The project would have one 10,000 gallon water truck on site during construction. Water supply for dust suppression would not require new entitlements. (FEIR, p. 3.11-5.)

c. Operation and Maintenance

Operation of the facility would require minimal water use if the substation mechanical and electrical equipment room includes a bathroom. Water would most likely be supplied to the bathroom through an on-site water storage tank that could be periodically filled with purchased water or possibly water from the wells. Quantities required for the bathroom sink and toilet would be minimal (a few gallons per week) and would not impact water supplies or entitlements. (FEIR, p. 3.11-5.)

The project includes groundwater pumping from existing wells that were formerly used for pumping approximately 3,000 acre-feet per year for agricultural uses (Inyo County 2006a). No new or expanded entitlements are needed for this project; however, the project does have the potential to draw down the groundwater levels in the Rose Valley area. (FEIR, p. 3.11-5.)

The Rose Valley groundwater table is recharged from precipitation and snowmelt that falls on the Sierra Nevada Mountains to the west (see Section 3.2 Hydrology and Water Quality). There may also be some recharge via deeper alluvial or bedrock flow after infiltrating along the mountain flanks or mountain canyons.

Groundwater also enters the northern Rose Valley from Haiwee Reservoir. Depth to groundwater on the Hay Ranch property is approximately 193 feet at the north well and 181 feet at the south well (California Department of Water Resources 1971, 1974). Outflow from the groundwater system is from evaporation and surface flow at Little Lake to the south, and groundwater underflow to the Indian Wells Valley farther south. (FEIR, p. 3.11-5.)

A two-week pump test and groundwater modeling were performed for this project (refer to Appendices C1 and C2) to determine the potential effect of the project on local water levels. The results of the pump test indicate that the project would result in some degree of groundwater table drawdown through time. Current well water use could be impacted after some time, such as in the community of Dunmovin or Coso Junction. Mitigation has been included in Section 3.2 Hydrology and Water Quality that requires COC (the applicant) to either re-equip or redrill any wells impacted by the proposed project. Impacts would be less than significant. This work would occur on or near existing wells in disturbed areas and would not have any additional environmental impacts. (FEIR, p. 3.11-5.)

d. Decommissioning

Decommissioning would involve removal of project components on public lands and abandonment of the pipeline in-place. Decommissioning may require water or other dust palliatives while removing facilities during decommissioning; however, quantities would be small. Decommissioning is not expected to cause adverse impacts to entitlements or water supplies. (FEIR, p. 3.11-5.)

3. Potential Impact 3.11-3: The potential for interruption of other utilities, such as electricity or sewage disposal

a. Overview of Impacts

Construction of the proposed project would have less than significant impacts on other utilities from disruption in electricity service during the substation installation. Operation, maintenance, and decommissioning would not have any significant impacts on utilities. (FEIR, p. 3.11-5.)

b. Construction

Wells, Lift Pump Station, Pipeline, Tanks. Construction of the project elements would require a small amount of electrical power. This power need would be met by temporary, California Air Resources Board certified, diesel generators. Construction of these elements would not impact electric distribution in the project area. No sewage or other utilities would be impacted by the construction of these proposed project elements. (FEIR, p. 3.11-6.)

Substation and Associated Facilities. Installation of the new substation would not require a significant interruption in electric transmission and distribution. Interruption in service to loop-in the new transmission line would take one

night. This would be performed at night because loads on the lines would be the lowest. Permission from the County would be required for any work between the hours of 7:00 p.m. and 7:00 a.m. The disruption in service would last approximately one night and would not be considered significant. The project would not result in significant interruption of utilities during construction. (FEIR, p. 3.11-6.)

c. Operation and Maintenance

Project electrical demand is estimated to be approximately 2.5 MWe. Less then 1 MW of power would be supplied to the local area to residents currently served by the SCE Haiwee Substation. The proposed substation would provide the power and would increase the amount and reliability, availability and stability of electricity available in the project area. Impact to electrical supply and demand from the proposed project would be less than significant. (FEIR, p. 3.11-6.)

The proposed project would also supply water to the Coso geothermal field on CLNAWS to increase the productivity of the power plants, which would positively affect electric supply in the region. At their peak, the power plants generated 270 MW of power. This output has decreased in recent years due to the loss of water in the reservoir from evaporation from plant cooling towers. The water supply would recuperate some of the lost power (but would not expand power capacity beyond its maximum amount). (FEIR, p. 3.11-6.)

Small, local, short-term outages may occur periodically for maintenance.

The mechanical and electrical equipment room may have a bathroom and sink. The wastewater would be serviced either by a vendor through a portable system or the mechanical and electrical equipment room would have a small septic leach field, which would adequately serve the infrequent use of the facility. Operation and maintenance of the proposed project would not have a significant impact on utilities. (FEIR, p. 3.11-6.)

The well water would be injected directly into the geothermal reservoir and would not require treatment. The geothermal reservoir is a water reservoir below the local utilized groundwater table; therefore, the injected water would not impact the local groundwater supply. (FEIR, p. 3.11-6.)

d. Decommissioning

Decommissioning would involve removal of project components on public lands and abandonment of the pipeline in place. The substation would be on property owned by SCE and would not be abandoned. The substation would continue to provide reliable electricity to the local residents in the area. Decommissioning would not impact wastewater, electricity, or other utilities. (FEIR, p. 3.11-6.)

4. <u>Potential Impact 3.11-4: The potential to generate waste beyond the capacity of the service landfill; violate federal,</u>

State, and local statutes and regulations related to solid waste; or generate a nuisance from waste

a. Overview of Impacts

There would be no significant impacts related to the generation of waste for any phase of the proposed project. Remaining landfill capacities would be sufficient for the project and waste production would be minor. (FEIR, p. 3.11-7.)

b. Construction

Waste from the construction phase of the proposed project would include:

- Excavated soils and vegetation unsuitable for reuse
- Two deteriorated mobile homes
- An old metal storage shed
- Asphalt from any removed road for pipeline burial
- Other construction-related waste

COC would donate or sell the old metal storage shed. All other material would be taken to Lone Pine Landfill, which was at 0.7 percent of its capacity in 2000. Employee-generated waste would be removed on a daily basis during construction. The amount of construction waste would not represent a significant impact to the landfill. (FEIR, p. 3.11-7.)

c. Operation and Maintenance

The operation and maintenance of the proposed project would create little waste, generally limited to employee-generated waste at the mechanical and electrical equipment room and control room. This waste would be removed daily from the project site with the workers. No impacts would occur. (FEIR, p. 3.11-7.)

d. Decommissioning

Decommissioning would involve recycling or disposing of the 1.5 million gallon tank and possibly some materials from the Hay Ranch property (i.e. tanks, pumps, etc.). Wastes would be recycled or properly disposed of at a landfill with adequate capacity at the time that the components are disassembled. The one-time disposal would not have a significant impact on landfills and waste collection. (FEIR, p. 3.11-7.)

D. NOISE

1. Potential Impact 3.12-1: The potential to expose persons to or

cause generation of noise levels in excess of standards or otherwise create excessive noise

a. Overview of Impacts

Construction noise would consist of noise generated by equipment. There are no sensitive receptors close enough to the project site to be significantly impacted by construction noise. (FEIR, p. 3.12-6.)

The project operation would create a new stationary noise source. Noise from the substation and pumps would not be perceptible to the nearest sensitive receptors, noise impacts would be less than significant. (FEIR, p. 3.12-6.)

b. Construction

Project-related construction and demolition activities would introduce temporary and intermittent noise from vehicles, earthmoving operations, structural demolition, and heavy equipment operations. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, the distance between construction noise sources and noise sensitive receptors, and the noise environment in which the project is being constructed. Noise generated during the construction period would vary on a day-to-day basis, depending on the specific activities being undertaken at any given time. (FEIR, p. 3.12-7.)

Heavy construction equipment that would be used during construction of the proposed project may generate maximum noise levels up to approximately 95 dBA at a reference distance of 50 feet. Average noise levels for clearing, grading and excavation equipment ranges from 78-84 dBA. (FEIR, p. 3.12-7.)

Noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor. Noise rates for the maximum noise generation and the average noise generation with distance are shown in Table 3.12-5. (FEIR, p. 3.12-7.)

There are no sensitive receptors within 800 feet (where the maximum noise level would be 71 dBA and the average would be 54-60 dBA) of the proposed construction areas, either on the Hay Ranch property, or along Gill Station Coso Road. Closest residents are 3,696 feet away (refer to Table 3.12-2). Noise levels from construction would be about 58 dBA at these residences as compared to the County's noise standard for residential low-density uses of 60 L_{dn}. These residences would not be exposed to excessive noise. (FEIR, p. 3.12-7.)

The suggested maximum noise level in the Inyo County General Plan (2001) for high density rural land uses is 65 Ldn. Conditionally acceptable levels of noise up to 70 dBA are allowed during construction after all noise reduction features and equipment have been identified and all systems implemented. All trucks and equipment would be equipped with standard noise abatement mechanisms, and would be required to

be in proper working order at all times. Medium- and heavy-duty trucks would meet the US EPA, FHWA, and USDOT guidelines for noise pursuant to 40 CFR Part 204. These measures would further minimize already less than significant noise impacts. (FEIR, p. 3.12-7.)

Construction workers would be periodically exposed to noise associated with CLNAWS; however noise from explosions and flyovers is intermittent and is not continuous or persistent enough to have a significant effect on the health of the construction workers. Additionally, Personal Protection Equipment (i.e., earplugs) will be used as required by Cal OSHA (FEIR, p. 3.12-7.)

Noise from construction would be less than significant. (FEIR, p. 3.12-7.)

c. Operation and Maintenance

Wells, Lift Pump Station, and Substation and Associated Facilities. The two production wells located at the Hay Ranch property are already in existence and operational. Each well would be modified by the addition of a down hole shaft driven pump to increase pumping capacity. Pumping of the wells would produce consistent but low levels of sound. The addition of the down hole shaft driven pumps are expected to increase the noise levels produced by the wells, but would not be perceptible at the nearest sensitive receptor located 3,696 feet away. (FEIR, p. 3.12-7.)

The lift pump station would generate low levels of noise that would only be perceptible a few feet from the pump. The nearest sensitive receptors are the residents located over 5,280 feet northwest of the pump station. Based on this distance, noise generated from the operation of the lift pump station would not be perceptible at the nearest receptor. (FEIR, p. 3.12-7.)

The substation would generate consistent but low levels of sound. The applicant has not identified the specific manufacturer of the electrical equipment. Equipment-specific noise levels are not known. Similar substations requiring transformer fans typically generate sound levels of about 66 dBA at 3.3 feet. The noise from the substation would not be perceptible at the property boundaries or at nearest residences. The substation, wells, and lift pump station would generate a new stationary source of noise in the project area; however, this new stationary source of noise would be less than significant because it would not change the noise environment for any sensitive receptors. (FEIR, p. 3.12-7.)

Operations and maintenance of the wells, lift pump station, and substation and associated facilities would require a few trucks and maintenance workers visiting the facilities on a periodic basis. Noise generated would be less than significant and would not be heard by any sensitive receptors due to their distance from the project site. (FEIR, p. 3.12-8.)

Tanks. The operation of the water storage tanks would introduce occasional noise from water pouring into the tanks. Field monitoring during refilling of a

462,000 gallon steel water storage tank for the Montara Water and Sanitary District revealed that noise from that type of operation is audible only within a few feet of the tank during periods of extreme quiet (MHA 2005). Noise generated from the addition of the proposed tank, which is comparable in size and composition would likewise not be expected to be audible more than a few feet from the tank and would not be discernable from existing background noise levels at any of the nearest residences. (FEIR, p. 3.12-8.)

The storage tanks would require periodic maintenance. Noise would be generated by maintenance equipment, vehicles, and workers. Noise would be short-term, periodic, and would not be perceptible to the nearest receptors. Impacts would be less than significant. (FEIR, p. 3.12-8.)

Pipeline. The pipeline, which runs for about 9 miles between the north well at Hay Ranch to the injection site at CLNAWS, is not expected to generate perceptible sound. The applicant has not identified the specific manufacturer of the piping equipment. Equipment-specific noise levels are not known. The pipe would be buried for most of its length. There are no sensitive receptors along Gill Station Coso Road in the vicinity of the pipeline. (FEIR, p. 3.12-8.)

Maintenance would include periodic draining of the pipeline for inspections and repairs; however, most water would be drained back to the storage tanks or to the wells. Small amounts of water may need to be pumped out at air release valves, but the noise would be minimal. Impacts would be less than significant. (FEIR, p. 3.12-8.)

d. Decommissioning

Decommissioning would involve removing or abandoning project components in place. Removing components would require equipment to remove the lift pump station and its foundation. Noise created from such activities would be temporary and intermittent. Noise would be no greater than the noise during construction and would be considered less than significant. (FEIR, p. 3.12-8.)

2. Potential Impact 3.12-2: Potential to expose persons to or cause generation of excessive ground-borne vibration or ground-borne noise levels.

a. Overview of Impacts

Construction and operation of the project would generate some ground-borne vibration. Vibration would be minimal and would dissipate within a short distance. No structures would be impacted. Vibration impacts would be less than significant. (FEIR, p. 3.12-8.)

b. Construction

Project construction would cause some ground-borne vibration, primarily during landform modification activities. The nearest receptors to the project

sites are the residences located approximately 3,696 feet (Graham Road) and 10,031 feet (Gill Station Coso Road) from the nearest proposed construction locations (refer to Table 3.12-2). Ground-borne vibration and ground-borne noise drop off rapidly over very short distances and would not be perceptible thousands of feet away. Construction and demolition activities for construction of the lift pump station, substation and its associated facilities, water tanks, and pipeline would not generate ground-borne vibrations that would affect nearby residences or nearby structures. Impacts would not occur. (FEIR, p. 3.12-9.)

c. Operation and Maintenance

The operation of the wells, lift pump station, water tanks, and pipeline would introduce low levels of ground-borne noise levels. The nearest sensitive receptors are located 3,696 feet away. Ground-borne vibration and ground-borne noise drop off over very short distances and would not be perceptible to the nearest receptor. Operation of the substation would not introduce ground-borne vibration or ground-borne noise levels. Minimal vibration from the cooling fans on the transformers would dissipate within 50 feet, and there are no sensitive receptors within this distance. Maintenance of the facilities would require a few periodic truck trips. Vibration would be minimal. Impacts from operation and maintenance would not occur. (FEIR, p. 3.12-9.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. Some ground-borne vibration would occur from component and foundation removal, but would not be detectable by the nearest sensitive receptors. Ground-borne noise would not be significant. Impacts would be less than significant. (FEIR, p. 3.12-9.)

III. RESOLUTION REGARDING ENVIRONMENTAL IMPACTS MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT

This Commission hereby finds that with the implementation of mitigation measures, the Project will have less than significant impacts in the following categories:

A. HYDROLOGY & WATER QUALITY

1. Potential Impact 3.2-1: The potential to deplete groundwater supplies in a manner that would result in substantial effects to existing groundwater supplies or users

a. Overview of Impacts

The project would include water use during construction of the proposed pipeline. No significant construction-related impacts to the groundwater resources of Rose Valley are anticipated. (FEIR, p. 3.2-32.)

Full project development would involve extracting groundwater from the two Hay Ranch wells at a combined total rate of up to 4,839 acre-ft each year for the planned project duration of 30 years. With mitigation, any impact associated with groundwater table drawdown will be reduced to a level of less than significant (see below). Impacts to groundwater users in the Indian Wells Basin, which receives groundwater underflow from the Rose Valley, would be less than significant, as underflow from Rose Valley is only a small portion of the water budget for the groundwater in Indian Wells Valley. (FEIR, p. 3.2-33.)

With mitigation, impacts on water availability at Little Lake Ranch, located 9 miles south of the project area will be reduced to a level of less than significant. Mitigation has been defined to monitor groundwater levels through the life of the project and to re-equip or re-drill any wells that are impacted by groundwater drawdown caused by the project. (FEIR, p. 3.2-33.)

Effects to water levels in Little Lake and the surrounding springs and wetlands are discussed under Potential Impact 3.2-2. (FEIR, p. 3.2-33.)

b. Construction

Construction of the project would consist of installing downhole pumps in the two existing Hay Ranch wells, installing permanent electrical service to the two well heads, and constructing a water delivery pipeline and storage tanks from the Hay Ranch property for approximately 9 miles east, to the Coso geothermal field. Water would be needed primarily for dust control and concrete mixing during construction. Construction is estimated to take approximately 110 days. Daily water needs would be unlikely to exceed 15 truckloads (approximately 45,000 gallons), which can be obtained from wells owned by COC at Coso Junction, or the Coso Ranch south well (located opposite the Coso store). These wells are currently used to provide water by the truck load to the nearby pumice mine operation. (FEIR, p. 3.2-33.)

The increased groundwater demand during construction (at 45,000 gallons per day or approximately 30 gpm on a continuous basis) would have no measurable impact on other groundwater users in the valley. The total volume of groundwater (approximately 15 acre-feet) potentially consumed during construction of the project would have no significant impact on water resources in the valley because the amount of groundwater available is several thousands of acre-feet. During the pumping test performed in November and December 2007, about 88 acre-ft of water was pumped and applied to the surface on the Hay Ranch property with no measurable effect to wells off of the Hay Ranch property (see Appendix C1 for pumping test description and results). (FEIR, p. 3.2-33.)

The construction contractor may also elect to install a small temporary pump in one of the Hay Ranch wells to supply construction water. The impact of pumping either one of the Hay Ranch wells at a rate of 30 gpm during construction is unlikely to occur off of the property. No other groundwater would be needed during construction. Impacts would be less than significant. (FEIR, p. 3.2-33.)

c. Operation and Maintenance

With mitigation, any potential impacts from groundwater pumping and subsequent transfer of that groundwater from one basin (Rose Valley) to another (Coso Basin) will be reduced to a level of less than significant. Potential impacts to groundwater users are discussed below for users within Rose Valley and Indian Wells Valley to the south. (FEIR, p. 3.2-33.)

Operation of the substation and associated facilities (buildings), water storage tanks, and pipeline would not have an impact on groundwater supplies beyond the actual groundwater pumping. These project components would create approximately 3 acres of new impervious surface; however, given the vast amount of undeveloped acreage in the area, recharge to groundwater would not be significantly impacted. The substation would include a mechanical and electrical equipment room that may have a bathroom facility. A few gallons of water per day would be required for the bathroom facility and would likely be stored in a small tank near the facility and produced by the Hay Ranch wells or another nearby supply (e.g., the Coso Store well, or the Coso Ranch well, or purchased). Water use for domestic purposes at the facilities would not significantly impact groundwater supplies in the project area. (FEIR, p. 3.2-34.)

Potential Impacts to Groundwater Users within Rose Valley. The number of existing groundwater users in the valley is limited due to limited development in the area. An estimated 40 acre-ft/yr of groundwater is currently produced from groundwater wells in Rose Valley. Dunmovin area may have as many as 30 domestic wells. Other wells include those owned by LADWP, Cal-Pumice, Coso Ranch (north and south well), northern and southern Coso Junction store well, and the Caltrans well at Coso Junction. At the south end of Rose Valley, the Red Hill well on Cinder Road is believed to be used for domestic purposes. Wells on the Navy property in Rose Valley, including the Lego well, well G-36, and well 18-28. There are also water wells on Little Lake property. Not all of the wells in the valley are in use. (FEIR, p. 3.2-34.) Additionally, the Hay Ranch Property, on which the proposed Project's pumping wells would be located, has historically been used for agricultural production of over seven tons of alfalfa per acre. (Draft EIR p. 3.8-1.) This use required pumping of several thousand acre-feet of water per year, and resulted in the consumptive use of approximately 3,000 acre-feet of groundwater per year. (County of Inyo Water Department Memo to Water Commission dated January 21, 2009 at p. 2.) This agricultural use has ceased since Coso acquired the Hay Ranch property.

Numerical groundwater flow modeling analysis was conducted to evaluate potential impacts of project operation on groundwater levels throughout the valley. The flow modeling analysis is described in Appendix C2. A four-layer model was constructed, with Layers 1 and 2 representing recent alluvial sediments, Layer 3 the Coso Lake Bed, and Layer 4 the Coso Sand unit. The upper layer is simulated as an unconfined aquifer and the three lower layers simulated as confined units. In general, Layers 1 and 2 have substantially higher values of hydraulic conductivity in the model and most of the groundwater flow occurs in these upper layers. (FEIR, p. 3.2-34.)

The range in predicted drawdown impacts reflects uncertainty in assumed values for aquifer specific yield (a measure of the aquifer's ability to release groundwater from storage); low specific yield values result in greater drawdown in groundwater levels that would occur and would be observed sooner than if the aquifer has a high specific yield. Higher specific yield values result in less drawdown with time and less drawdown farther from the pumped wells. There may be additional uncertainty associated with the existing limited knowledge of the transmissivity, recharge, and evapotranspiration values. (FEIR, p. 3.2-34.)

These estimates of predicted drawdown may be conservative because of several conservative assumptions used in the model:

1. The groundwater flow into Rose Valley from Owens Valley is presumed to be underestimated (see water budget discussion associated with Table 3.2-3)

2. The model does not include any flow from Coso Basin, although the isotopic studies showed that there is evidence of geothermal fluids in the Little Lake area

3. The estimate of evapotranspiration from the Little Lake area is high

4. The model assumes a low precipitation recharge rate from the Sierra Nevada mountains west of the valley

5. The model neglects potential precipitation recharge from the Coso Range on the east side of the valley and neglects precipitation recharge falling directly on the valley floor

6. The model uses a low estimate for groundwater underflow from Owens Valley to the north. (FEIR, p. 3.2-34.)

In contrast, uncertainties in the value of specific yield could cause the predicted drawdown values to be somewhat greater than predicted. Uncertainties in transmissivity, recharge and evapotranspiration could cause the predicted drawdown to be either higher or lower. The effect of uncertainties in the model results is discussed later. (FEIR, p. 3.2-36.)

Groundwater-yielding sediments encountered in Rose Valley consist primarily of sand and gravel interbedded with clays. Most of the groundwater is expected to be produced from the more readily drainable sand and gravel horizons. Published values of specific yield (Johnson 1967; Morris and Johnson 1967) range from 2 percent for clay to 35 percent for well-graded gravels. Because specific yield could not be determined from the pumping test data, a range of values corresponding to expected high, medium, and low values of 30, 20, and 10 percent for model Layer 1 were used in the groundwater modeling that was conducted for this impact analyses. The deeper hydrostratigraphic units (model Layers 2, 3, and 4) were represented by lower values of

storage coefficient (specific yield), which reflect confined aquifer conditions (see Appendix C-2 for a more complete discussion). (FEIR, p. 3.2-36.)

Groundwater table drawdown would increase with time following startup of the project. The modeling results indicate that, depending on aquifer specific yield, the impact of pumping at Hay Ranch would take more time to develop at locations farther from Hay Ranch. At locations farther from Hay Ranch, the maximum drawdown may develop after pumping at Hay Ranch has stopped. The maximum drawdown on the Hay Ranch property is predicted to occur at the end of the 30 year project pumping period, whereas the time at which the predicted maximum drawdown occurs is delayed for areas farther south of Hay Ranch. The maximum predicted drawdown at wells at Little Lake (9 miles south of Hay Ranch) is expected to occur up to 30 years after pumping at Hay Ranch stops. This delay period is also dependent on specific yield. The delay would be shorter for lower specific yield values and longer for higher specific yield values. (FEIR, p. 3.2-36.) Even though some delay in drawdown effects may be present, "the trigger points have been established using the model to prevent a greater than 10% decrease in flows to Little Lake from ever occurring." (FEIR [HMMP] p. 3-6.) Accordingly, "requiring that observed drawdown values over time be kept below these defined trigger levels would provide an early warning system, allowing for the system operations to change, to reduce or stop pumping before maximum acceptable drawdown levels" occur. (*Ibid*.)

With mitigation, groundwater pumping and transfer would have a less than significant impact on other groundwater users in Rose Valley. Due to the low level of predicted groundwater table drawdown (less than 10 feet), water supply wells at the south end of Rose Valley may not need any equipment changes. Although well construction details were not available for most of the wells in the valley, most of the wells appear unlikely to need to be deepened because the maximum drawdown predicted off the property is less than 40 feet and most wells have a water column of 100 feet or more. However, for wells in the Dunmovin area and in Coso Junction, existing pumps might have to be set at lower depths, or existing pumps might need to be replaced with pumps with greater lift capacity. (FEIR, p. 3.2-36.)

Mitigation described below requires that the applicant fund any well adjustments through the life of the proposed project for any existing wells that lose their current functionality as a result of the proposed project. The mitigation would reduce impacts of the proposed project on access and use of existing wells in the Rose Valley to less than significant levels. Monitoring would also occur to track groundwater drawdown as a result of the proposed project in order to determine when and if mitigation would be needed. (FEIR, p. 3.2-39.)

Hydrology-1: The project applicant shall finalize and implement the Draft Hydrological Monitoring and Mitigation Program (HMMP) included in Appendix 1 of the FEIR. (FEIR, p. 3.2-39.)

Hydrology-2: Mitigation for effects to groundwater wells in Rose Valley shall depend upon the specific characteristics of each well, and the use of the well.

The applicant shall use monitoring data and the numerical groundwater flow model described in Appendix C2 to track groundwater levels throughout the valley. The applicant shall work with the County Water Department to identify wells that may be affected by groundwater drawdown as the project progresses. The evaluation of wells depths and uses in the Rose Valley as compared with groundwater drawdown shall be made semi-annually and reported to the Inyo County Water Department. The owner of any wells that may potentially be impacted within the six months after an evaluation shall be contacted by the applicant to assess the need for additional pumping equipment on the well or deepening of the well. The applicant shall be responsible for the cost of equipping or deepening wells that are impacted by groundwater drawdown as a result of the proposed project. The applicant would also bear the cost of any additional energy costs required to pump the wells. The applicant shall also evaluate any wells that are brought to the attention of the applicant by the user to evaluate if groundwater drawdown from the proposed project is impacting the well. If it is determined by the County or by the applicant (using well monitoring data and modeling) that the well in question is being impacted by the proposed project, the applicant shall fund the necessary adjustments to the well to secure the previous uses of the well. Disputes as to the cause of well water drawdown or appropriate corrective measures shall be resolved by the County. (FEIR, p. 3.2-39.)

Potential Impacts to Groundwater Users in Indian Wells Basin

Although the project would result in a reduction in the amount of groundwater flowing south to the Indian Wells Valley, impacts to groundwater users in Indian Wells Valley, which receives groundwater underflow from the Rose Valley, would be less than significant. Underflow is only a small portion of the groundwater budget in Indian Wells Valley. The predicted reduction in groundwater underflow to Indian Wells Valley ranges from 377 acre-ft/yr at a specific yield of 30% to 1,300 acre-ft/yr at a specific yield of 10% at the full project development rate and 30 year project duration. These values are less than 3% of the total recharge of 46,000 acre-ft per year estimated by Williams (2004) for the Indian Wells Valley. With mitigation, for example in the form of reducing or ceasing Hay Ranch pumping after 1.2 years of pumping (discussed in Potential Impact 3.2-2), even less impact to groundwater users in Indian Wells Valley is predicted. (FEIR, p. 3.2-39.)

d. Decommissioning

Decommissioning would involve removing above ground project components, including the tanks and the equipment on the Hay Ranch property, and abandoning the pipeline in-place. Pumping of the Hay Ranch wells would terminate and no more water would be transported out of the basin as part of the proposed project. Impacts to groundwater drawdown would cease in much of the valley as the aquifer begins to refill; however, due to the lag effect in the more distant portions of the valley, such as Little Lake, some additional drawdown will occur for a few years following cessation of pumping. The lag effect could continue for as much as 30 years after pumping before the maximum drawdown is reached, based on modeling results. Groundwater levels would eventually rise throughout the valley; however due to the lag

effect discussed above, groundwater levels in the more distant areas, such as the south end of the valley, would recover more slowly and could take more than 30 years to recover fully after pumping ceases. The rate of groundwater table elevation recovery also depends on aquifer specific yield; as depicted on Figure 3.2-15, groundwater elevation would recover more quickly if specific yield is low (10%) than if it is high (30%). Groundwater recovery throughout the valley would occur more rapidly if less groundwater was withdrawn for the project (e.g., if the project was terminated early or Hay Ranch pumping rates were reduced before the end of the 30 year project life). As discussed above, the trigger points and monitoring well system provide an early warning system that will assure that no significant drawdowns occur, even assuming that there is some lag time between cessation of pumping and maximum observed drawdown levels. Impacts of decommissioning itself would be less than significant. (FEIR, p. 3.2-40.)

2. Potential Impact 3.2-2: The potential to substantially reduce the amount of water available to surface water bodies at Little Lake Ranch and to other areas in the Rose Valley

a. Overview of Impacts

Construction would not have impacts on surface waters or springs because only a relatively small amount of water is needed for dust suppression and other construction activities. There are no surface waters near the project site that would be used as a water supply for construction or that could be impacted by construction. (FEIR, p. 3.2-40.)

During the operation phase and post-operation recovery phase, the principal potential impacts to surface water flows include possible reduction or elimination of spring or siphon well/spring flows in certain locations and the reduction in water available to Little Lake Ranch. (FEIR, p. 3.2-40.)

Because they are located at much higher elevations than the groundwater table in the Rose Valley aquifer, the Tunawee Canyon and the Davis spring/siphon well at Portuguese Bench, as well as Rose Spring, located 2 miles north of the proposed project are, are unlikely to be impacted by the proposed project. However, numerical modeling analysis indicates long term operation of the project could impact water levels and surface water discharge on the Little Lake Ranch property. (FEIR, p. 3.2-40.) The HMMP (as described in mitigation measure Hydrology-1) would be implemented to monitor and identify potential effects to water availability at Little Lake Ranch. (FEIR, p. 3.2-40.)

Mitigation for the effects of pumping at Hay Ranch is defined in Mitigation Measure Hydrology-4 and includes:

1) Monitoring and recalibration of the groundwater model to improve model predictions. The model recalibration shall be conducted within the first year, and then at a frequency of every 5 years or less for the duration of pumping operations, as needed or as directed by the Inyo County Water Department. The

recalibration shall be conducted sooner if actual drawdown in two or more monitored wells is at least 0.25 feet higher than predicted by the model for those locations. New predicted drawdown values shall be calculated based on the recalibrated model, and an evaluation shall be made whether reduced pumping rates and/or duration is necessary.

2) Reducing pumping rates and/or duration after project startup as determined by the Inyo County Water Department based on a more accurate model and triggers defined to prevent the threshold of significance from being reached. (FEIR, p. 3.2-40.)

Mitigation would reduce potential impacts to water availability at Little Lake Ranch and surrounding surface waters, wetlands, and springs to less than significant levels. (FEIR, p. 3.2-40.)

b. Construction

Construction of the project is unlikely to impact surface waters, springs, or surface water discharge rates at Little Lake because of the short duration (110 days), relatively small amount of groundwater potentially needed for construction related purposes, and distance (over 9 miles) from the project well locations. Groundwater may be used for dust suppression at an estimated maximum of 15 acre feet over the course of the project construction. Pumping tests in November and December 2007 withdrew about 88 acre-feet of water and applied it to the surface with no discernable impact to surface springs or waters off of the Hay Ranch property. Construction water use would not impact water levels in surface waters or springs. (FEIR, p. 3.2-41.)

c. Operation and Maintenance

The principal impact in Rose Valley from operation and maintenance of the proposed project would be from groundwater table drawdown off the property resulting from removing groundwater from the Hay Ranch property and transporting it outside the Rose Valley groundwater basin (to the Coso Basin). However, as discussed above, mitigation measures will reduce potential drawdown impacts to a level of less than significant. Operation of the substation and associated facilities (buildings), water storage tanks, and pipeline would not have an impact on surface water supplies unrelated to groundwater pumping. (FEIR, p. 3.2-41.)

Springs, siphon wells, and surface waters in the project region include:

- Tunawee Canyon Spring at Portuguese Bench
- Davis Spring and siphon well at Portuguese Bench
- Rose Spring
- Little Lake, springs, and siphon well. (FEIR, p. 3.2-41.)

Potential Impact to Springs. The Tunawee Canyon and the Davis spring/siphon well at Portuguese Bench would not be impacted by the proposed project because they are located at much higher elevations than the groundwater table in the Rose Valley aquifer. Portuguese Bench is located approximately 600 feet in elevation above the groundwater table level at the Hay Ranch property. The well at the Davis Ranch was monitored during the November/December 2007 pumping tests and no effects were identified (see Appendix C1). Given the artesian flow at the wells on Portuguese Bench, proximity to the Sierra Nevada, and elevation of over 600 feet above groundwater level at Hay Ranch, water supplying the wells at Portuguese Bench is not hydrologically dependent on the water in the Rose Valley. The springs and wells on Davis Ranch and Portuguese Bench would not be impacted by the proposed project. (FEIR, p. 3.2-41.) Nonetheless, and as described above, should any impact result, mitigation measure Hydrology-2 requires that Coso lower wells and take other mitigating actions at its own cost "to secure the previous use of wells" that are impacted by Project pumping.

Rose Spring, located approximately 2 miles north of the Hay Ranch property at an elevation of 3,580 feet amsl, is apparently perched groundwater and is approximately 300 ft above the local elevation of the groundwater table in the aquifer. Because it is perched far above the water table, it is unlikely to be impacted by the proposed project. The source of water for the spring is derived from Sierra Nevada mountain front precipitation and groundwater underflow from Owens Valley, neither of which is likely to be impacted by pumping at Hay Ranch. Recent monitoring indicates that there is currently no surface water flowing at Rose Spring (EREMICO 2008). (FEIR, p. 3.2-41.)

Potential Impacts to Water Availability at Little Lake Ranch. Impacts to Little Lake Ranch could occur through substantially reduced water availability to Little Lake and/or through substantially reduced water flow to the lower ponds. (FEIR, p. 3.2-41.) However, as discussed below, implementation of mitigation measures will reduce potentially significant impacts to less than significant levels. (FEIR, p. 3.2-47.)

Surface water flows on the Little Lake Ranch property are sustained entirely by groundwater inflow that rises to the surface in the area. The source of the groundwater that discharges to Little Lake is estimated to be primarily (more than 80%) from Sierran recharge to Rose Valley coming from the west, in addition to some groundwater upwelling from the Coso Basin to the east (as much as 250 acreft/year) and some amount of underflow from the north of Rose Valley (an estimated 898 acre-ft/yr). (FEIR, p. 3.2-41.)

The groundwater beneath the Hay Ranch property primarily originates as precipitation recharge in the Sierra Nevada Mountains north and west of the property with some contribution from groundwater underflow from north of Rose Valley and upwelling geothermal water from the Coso Range. The groundwater elevation and flow rate towards Little Lake Ranch could be reduced by pumping at Hay Ranch. Flow rates towards Little Lake Ranch could be reduced because pumping at Hay Ranch would capture some of the groundwater flow from Owens Valley and the Sierran recharge in the

north end of the valley. Capture of water at Hay Ranch could create northerly groundwater table gradients near Hay Ranch that could reduce the natural southerly groundwater gradients towards the south end of the valley where Little Lake is located. (FEIR, p. 3.2-42.)

Table 3.2-6 provides a breakdown of the sources of water captured by the Hay Ranch wells at the full project development rate of 4,839 acre-ft/year, based on modeling results. The results indicate that capture of groundwater at Hay Ranch that normally flows toward the Little Lake Gap would reduce groundwater elevations and groundwater flow rates towards Little Lake. The model results indicate that at the full design rates, the project would reduce groundwater flow and table elevation on the Little Lake property. (FEIR, p. 3.2-42.)

Relationship between Groundwater and Surface Water at Little Lake Ranch. Groundwater table drawdown at the Little Lake Ranch property would likely reduce water available to the lake, which could potentially cause water levels in the lake and ponds to fall. However, implementation of mitigation measure Hydrology-3 along with Hydrology-4 would reduce potentially significant impacts to less than significant levels. (FEIR, p. 3.2-47.) One stated goal of the 2000 Habitat Restoration and Improvement Plan (ULLR 2000) is to protect and increase the effective use of surface water on the ranch. The plan outlines methods to further increase the property's wetland acreage and total surface area of impounded water through better control of water flowing through the property. A substantial decrease in the lake size due to reduced availability of groundwater would negatively impact habitat restoration efforts and would be considered a potentially significant effect. (FEIR, p. 3.2-42.) However, mitigation has been defined to monitor groundwater levels through the life of the project and to re-equip or re-drill any wells that are impacted by groundwater drawdown caused by the project. (FEIR, p. 3.2-33.)

Bauer (2002) found that the groundwater elevation in the well on the north shore of Little Lake (Little Lake North Dock well) was consistently 3 feet higher than the lake level, indicating that the lake gained water from the aquifer year-round. These data suggest that groundwater table drawdown of 3 feet or more could reverse the direction of water exchange such that the lake would begin losing water to the aquifer and cause a reduction in surface area. There is about 1 foot of natural variation in groundwater level at the North Dock well (Bauer 2002). (FEIR, p. 3.2-42.)

The modeling results indicate that, depending on aquifer specific yield, the impact of pumping at Hay Ranch takes greater time to develop at locations farther from Hay Ranch. At locations farther from Hay Ranch, the maximum drawdown may develop after pumping at Hay Ranch has stopped. The maximum drawdown on the Hay Ranch property near the production wells is predicted to occur at the end of the 30 year project pumping period, whereas the predicted maximum drawdown at Little Lake, 9 miles south of Hay Ranch, may not appear for up to 30 years after pumping at Hay Ranch stops (as shown on Figure 3.2-15). This delay period is also dependent on specific yield and is shorter for low specific yield and longer for high specific yield. The predicted changes in groundwater table drawdown at the northern end of Little Lake (North Dock

well) with time during and after the 30 year project life are shown in Figure 3.2-16. The currently predicted drawdown at Little Lake North Dock well for full project pumping at a rate of 4,839 ac/ft per year for 30 years ranges from 3 to nearly 8 feet depending on assumed specific yield. Drawdown greater than 3 feet could result in a reverse in the natural flow pattern and could drain the lake, which would be a significant impact. Even drawdowns of less than 3 feet in the vicinity of Little Lake could cause a reduction in lake level and the surface area of the lake because groundwater flow to the lake would decrease as the hydraulic gradient to the lake decreased. A reduction in the amount of groundwater discharging to the lake could cause the water budget in the lake to be in deficit, potentially resulting in a significant drop in lake level and reduction in surface water area, which would be considered a significant effect. (FEIR, p. 3.2-43.) However, with implementation of mitigation measures, these impacts will be less than significant.

Groundwater Flow Reduction towards the Little Lake Gap. Pumping as proposed at Hay Ranch could also result in reduction in the amount of groundwater flowing towards Little Lake Gap. Implementation of mitigation measure Hydrology-3 along with Hydrology-4 would reduce potentially significant impacts to less than significant levels. (FEIR, p. 3.2-47.) Groundwater discharge towards the Little Lake Gap would be reduced from the current estimated value of 4,200 acre-ft/yr to between 2,500 and 3,700 acre-ft/yr at the full project pumping rate (4,839 acre-ft/yr) and duration (30 years). The effect of full project development on water table level in the vicinity of Little Lake is shown on Figure 3.2-17. (FEIR, p. 3.2-43.)

A reduction in groundwater flow could also impact the discharge rates from the lake, which currently flows over the weir into the lower pond areas during the winter and spring months. A reduction in groundwater flow could also reduce the discharge rate of water from the lower siphon well and Coso Spring, located about 1/4 mile south of the Little Lake weir. The spring and siphon well are about 20 feet lower in elevation than the northern end of the lake, so groundwater drawdown here would be much less than in the northern end of the lake (refer to Appendix C2). Because of the damming of Little Lake, the water table elevation is somewhat buffered below the lake, and the springs tend to flow year round, even when the lake is not discharging over the weir. (FEIR, p. 3.2-43.)

The Little Lake Ranch habitat restoration effort receives, on average, less than 25% of the water it uses for irrigating the lower property from discharge from Little Lake. The bulk of the water used for downstream restoration efforts comes from Coso Spring and the siphon well. Data from Bauer (2002) indicates that, when the lake stops discharging over the weir, the groundwater continues to discharge from the spring and siphon well. In 1997, there were 3 consecutive summer months when there was no downstream flow from Little Lake. During that time, Coso Spring had its highest monthly flows (2,000 acre-ft/yr). If the Hay Ranch project causes reduction in groundwater flows towards Little Lake, it will reduce the amount of groundwater coming to the surface on the Little Lake Ranch property. As a result, the discharge rate from Little Lake would likely decrease and groundwater that previously surfaced at the lake would likely surface farther south on the property at the siphon well and Coso Spring (increasing the proportion of water discharging from the spring and siphon well

compared to the lake). (FEIR, p. 3.2-43.)

Although the amount of groundwater surfacing on the property could be reduced under full pumping rates and project duration, implementation of mitigation measure Hydrology-3 along with Hydrology-4 would reduce potentially significant impacts to less than significant levels. (FEIR, p. 3.2-47.). A relatively small reduction in the flow rate and overall saturated thickness of the aquifer caused by water table lowering could cause water that previously surfaced to remain below ground. Reduced groundwater flow rates through the lower part of the property would reduce the amount of water that Little Lake Ranch would have to perform their restoration efforts, which could be considered a significant impact. (FEIR, p. 3.2-45.)

Definition of a Significant Impact to Water Availability at Little Lake Ranch. Defining thresholds of significant effects to the environment by attempting to measure or predict those effects on vegetation around Little Lake Ranch was considered and rejected. The Little Lake area is highly manipulated. Water levels of the Little Lake reservoir are manually controlled. The vegetation surrounding the area south of Little Lake is manipulated by removing undesirable species, planting others and by moving water to various areas where managers intend to promote vegetation. As a result, there is no natural background condition against which to measure effects. Additionally, by moving water around the property, vegetation may be encouraged in areas not currently highly vegetated and discouraged in areas now heavily vegetated if management objectives for the restoration project shift. Therefore, by necessity, it is most appropriate to emphasize measuring impacts to the amount of water that is available to the restoration project, rather than biological indicators. (FEIR, p. 3.2-45.)

The potential effect of groundwater pumping at Hay Ranch includes reduced groundwater flows towards the Little Lake property. This could result in a reduction in water available in the lake as well as in the downstream pond areas. Implementation of mitigation measures will reduce potentially significant impacts to less than significant levels. (FEIR, p. 3.2-47.) Identifying the connection between groundwater withdrawal on the Hay Ranch property and effects on surface water and water availability at Little Lake Ranch is difficult given current limitations in the understanding of the aquifer and groundwater system in the Rose Valley. The hydrologic model and existing data on the relationship between groundwater levels and water levels in Little Lake provide the best scientific basis, at present, for determining how pumping could impact the lake. (FEIR, p. 3.2-45.)

Pumping would result in a propagation of groundwater drawdown through the Rose Valley over time. Even after pumping ceases, effects would continue to propagate through the valley. In order to determine project effects, a significant impact at Little Lake must first be defined and then related to groundwater pumping and corresponding groundwater level drawdowns throughout the valley. (FEIR, p. 3.2-45.)

A benchmark of no more than a 10% decrease in discharge to Little Lake has been determined to be the “tolerance” level at the lake in order to prevent significant impacts to water availability at the lake. This groundwater flow rate reduction

trigger level of 10% has been set such that the observed variation in flow rates at Little Lake would remain largely within the natural envelope already experienced on the property. Groundwater table elevations and gradients in the area vary seasonally. Bauer (2002) found that for three months of 1997 discharge from Little Lake ceased. A reduction in groundwater discharge to the lake of up to 10% may extend the period that water does not flow from the lake, but during that timeframe water would still be expected to flow from the siphon well and Coso Spring. Coso Spring currently supplies water to the lower ranch area 75% of the time and, in particular, when overflow stops from Little Lake (Bauer 2002). (FEIR, p. 3.2-45.)

The lower pond areas, south of Little Lake, must also receive water to maintain the wetlands. The outflow from the spring, siphon well, and the lake that is not evaporated or consumed by plants infiltrates back into the ground. The amount of water estimated to be reentering the aquifer at the south end of the property may be as much as 3,000 acre-ft/yr, which could be manipulated to create more surface water in the lower ponds. A 10% maximum decrease in groundwater discharge to Little Lake would still allow for the vast majority of the groundwater to be available for creation of surface water features (e.g., ponds) prior to infiltration back into the aquifer. Currently, some surface waters overtop the Little Lake weir system during period of heavy precipitation, and some volumes of surface water are sold by Little Lake to a local business. Restoration efforts outlined in the 2000 plan focused on methods to capture currently flowing water prior to its infiltration back into the ground at the south end of the property. (FEIR, p. 3.2-46.)

The habitat restoration/creation efforts at Little Lake have been designed for large scale fluctuations in water availability. If the proposed project does not reduce groundwater levels by more than 10%, then it is expected that water would flow from the siphon well and Coso Spring such that downstream areas would have enough water to maintain the manipulated wetland habitats on the property. Flow over Little Lake weir may decrease or cease for a longer period of time than it does now on average. The habitat between the weir and the siphon well is usually subject to a period of ceased flows from the lake (Bauer 2002) and is, therefore, adapted to it. As long as groundwater levels fell just a few inches in this area, plants could grow deeper roots to adapt. When water begins to flow again, the area would again inundate and the wetland plants would thrive again. A 10% or less decrease in flows would allow for continued maintenance of wetland plants and habitat restoration efforts. (FEIR, p. 3.2-46.)

The project as proposed would cause a greater than 10% decrease in groundwater inflow to Little Lake based on the existing data and results of the existing model. This would be considered a significant impact. Mitigation includes establishing monitoring points and trigger levels throughout the valley such that, if actions were taken when those levels were reached, they would prevent Little Lake from ever experiencing more than a 10% loss in water availability due to groundwater pumping at Hay Ranch. (FEIR, p. 3.2-46.)

Mitigation and Monitoring. Based on existing knowledge of the Little Lake area and the groundwater system in the area, triggers throughout the valley

that would indicate an eventual 10% decrease in flow to the lake, shall be established using the model. Mitigation has been defined to monitor water levels through the life of the project and to re-equip or re-drill any wells that are impacted by groundwater drawdown caused by the project. (FEIR, p. 3.2-33.) Mitigation includes establishing monitoring points throughout the valley that if actions were taken when those levels were reached, would prevent Little Lake from ever experiencing more than a 10% loss in water availability due to groundwater pumping at Hay Ranch. (FEIR, p. 3.2-46.)

The trigger points are established based on the groundwater drawdown level that could cause a significant impact at Little Lake. Current data suggests that the groundwater aquifer is 3 feet higher than the lake level. A 10% decrease in head would result in 10% decrease in water flow to the lake. This is currently believed to be 0.3 feet of groundwater drawdown at the north end of Little Lake. (FEIR, p. 3.2-46.)

This 0.3 feet of drawdown at the Little Lake North Dock well is not the main monitoring point, but a calibration point for the model. The calibration point is necessary to establish the equivalent drawdown in areas up-valley, such that if those triggers up-valley are reached, mitigation must be implemented to prevent an eventual decrease of groundwater flow to Little Lake greater than 10%. The North Dock well is a complex location for monitoring due to its proximity to the lake and the fact that it is so far from the Hay Ranch wells. Additionally, maximum drawdown in the North Dock well would occur long after cessation of pumping at Hay Ranch. The amount of groundwater table drawdown seen at any point throughout the valley would depend mainly upon how close the point is to the Hay Ranch production wells. A 10% decrease in groundwater elevation at the north end of Little Lake would appear as a larger drawdown in groundwater levels in wells closer to Hay Ranch than in those farther from Hay Ranch. Monitoring must occur closer to Hay Ranch, in order to ensure that the lake never reaches more than 10% decrease in groundwater inflow. (FEIR, p. 3.2-46.)

The existing groundwater model predicts that, with a specific yield value of 10%, a maximum of 10% reduction in groundwater inflow to Little Lake (this is currently benchmarked to a drawdown of 0.3 feet in the Little Lake North Dock well) would occur following pumping at Hay Ranch at proposed pumping rates for a period of approximately 1.2 years. The model predicts that this maximum drawdown would occur as much as 30 years after the cessation of pumping at 1.2 years, due to the large distance (9 miles) from the pumping. Other locations closer to Hay Ranch would likely record their maximum drawdown after much shorter periods of time, as shown in Table 3.2-7. For example, if pumping ceases at 1.2 years, at the Cal Pumice well, the model predicts that maximum drawdown (7.1 feet) would be reached at approximately 1.25 years, at Coso Ranch North Well a maximum drawdown of 2.5 feet would be reached at 3 years, and at the Red Hill Cinder Road Well, the maximum drawdown would be expected to be 0.7 feet at approximately 12 years. (FEIR, p. 3.2-47.) As discussed above, the County's mitigation program takes the lag time between pumping activities and drawdown into account through the monitoring plan and the conservative trigger points. Thus, even with some lag time, no significant impact will result. (FEIR [HMMP] p. 3-6.)

Mitigation, therefore, allows initiation of pumping for the project

at the proposed project pumping rate, until drawdown trigger levels are reached at one or more monitoring locations throughout the valley (Table 3.2-7). Model predictions indicate that the trigger levels could be reached in as little as 1.2 years; however, some conservative assumptions that are built into the model may extend this pumping period considerably longer, if actual decreases in the groundwater level occur more slowly than predicted. The trigger points have been established using the model to prevent a greater than 10% decrease in flows to Little Lake from ever occurring. Triggers are also further described in the HMMP in Appendix C4. Monitoring should occur monthly for at least three years, with results reported to the County within 2 weeks of data collection. After three years, if water levels are decreasing more slowly than predicted, the applicant can petition the County to reduce the measurement frequency to quarterly. (FEIR, p. 3.2-47.)

Data collection in the first few months to years would lead to a better understanding of the relationship between pumping at Hay Ranch and groundwater table drawdown throughout Rose Valley and at Little Lake. Pumping may continue as long as the project does not result in a significant decrease in groundwater available at Little Lake. (FEIR, p. 3.2-47.)

The types of data that would be collected to better understand and estimate sustained pumping rates after one year are fully described in the HMMP provided in Appendix C4. Within approximately 1 year of initiation of pumping, or less if trigger levels are reached sooner, the groundwater flow model should be recalibrated to the observed drawdown in groundwater levels, to allow for more accurate estimation of how long the pumping can continue without exceeding drawdown trigger levels and causing a significant reduction in water available to Little Lake, the springs, and wetlands. A qualified person approved by Inyo County Water Department and funded by the applicant would evaluate the results of the first year of data collection, would recalibrate the model, and working with the Inyo County Water Department and the applicant, and would estimate the duration of pumping that would keep impacts below the defined trigger levels. Recalibration of the model would also be necessary later, if pumping continues significantly longer than 1.2 years, as needed and appropriate to help understand the timing and magnitude of future drawdown of groundwater levels throughout the valley. (FEIR, p. 3.2-47.)

Implementation of mitigation measure Hydrology-3 along with Hydrology-4 would reduce potentially significant impacts to less than significant levels. (FEIR, p. 3.2-47.)

Hydrology-3: Monitoring shall occur at a frequency that is sufficient to detect important changes and trends in water levels. Monitoring shall occur monthly, at a minimum, at all monitoring points, following project start-up. The data shall be collected and analyzed by a qualified person approved by Inyo County Water Department and provided by the applicant. Monitoring reports shall be prepared by the applicant and submitted to Inyo County Water Department within 20 days of data collection. After two years, monitoring shall occur quarterly. Reports shall also be provided to a designated recipient at Little Lake Ranch, Inc. Two new monitoring well clusters, each with three wells with screened intervals at three different depths, located

approximately 700 feet south of the Hay Ranch North Wells, and 700 feet south of the South Well, respectively, shall be installed by the project applicant, and as approved by the Inyo County Water Department. An additional new water table monitoring well shall be installed by the applicant and as approved by Inyo County Water Department, approximately midway between Coso Junction and the Cinder Road Red Hill well, to provide additional monitoring capability in this area. (FEIR, p. 3.2-48.)

The monitoring program also includes reassessment of model-predicted impacts and recalibration of the groundwater model by a qualified person approved by the Inyo Count Water Department, and provided by the applicant. After a period of one year of pumping, observed groundwater level changes shall be compared with predicted groundwater level changes in order to assess the accuracy of the model-predicted drawdown. If the observed water level changes at two or more of the selected monitoring points differ from predicted values (trigger levels) at those locations by at least 0.25 feet at any point in time, or a maximum acceptable drawdown is reached at a designated monitoring point, or as judged appropriate by Inyo County Water Department, the model shall be re-calibrated and the predicted impacts to groundwater levels re-forecast with the re-calibrated model. If the model results change with recalibration, the mitigation strategy shall be updated in response to new forecasts of potential impacts to groundwater, potentially including reducing the duration or rate of pumping, or other mitigation measures as described in the HMMP. Additional re-calibration is expected to be needed after one year, as monitoring continues and water level changes are detected farther down Rose Valley. Additional re-calibration of the model shall be conducted as appropriate following the criteria outlined above (i.e., if the predicted water level in two or more wells differs from observed water level drawdown by at least 0.25 feet or more, or one or more maximum acceptable drawdown levels in wells all across the valley are exceeded). (FEIR, p. 3.2-49.)

Because surface water bodies at the Little Lake Ranch property are likely sensitive to changes in groundwater elevation and groundwater flow rate, the monitoring plan also identifies trigger levels that indicate when a significant impact (defined as a substantial reduction in water to Little Lake) will likely occur unless mitigation measures are implemented to reduce the pumping rate and/or duration of pumping. The plan includes the implementation of mitigation measures (namely, Hydrology-2 and Hydrology-4) to reduce any potentially significant impacts to less than significant levels. (FEIR, p. 3.2-49.)

Hydrology-4: The applicant shall be allowed to pump the project at the full proposed pumping rate until a time when and if the predicted groundwater drawdown trigger levels are exceeded at two or more of the designated Rose Valley monitoring points by at least 0.25 feet, or if a maximum acceptable drawdown level is exceeded in any monitoring point. (FEIR, p. 3.2-49.)

During the first year, a qualified person, approved by Inyo County Water Department and provided by the applicant, shall conduct the studies described in Hydrology-1 and Appendix C4 of this EIR in order to recalibrate the groundwater model to the early groundwater data. The groundwater model shall be recalibrated in order to

more accurately understand the relationship between groundwater pumping, reduction in groundwater elevations across the valley, and availability of water at Little Lake. Pumping rates and duration of pumping shall be determined based on the results of the model and the observed water table drawdown. At no time shall projected results of pumping result in a greater than 10% decrease in groundwater inflow to Little Lake (estimated to be equivalent to a 0.3-foot drawdown in groundwater head at the northern end of Little Lake) unless new data collected in the vicinity of Little Lake indicates that a larger decrease of head would not result in a greater than 10% decrease in groundwater inflow to Little Lake or substantially deplete the water availability to the springs. (FEIR, p. 3.2-49.)

The revised pumping rate and duration shall be approved by the Inyo County Water Department. The recalibration shall occur within one year after project startup to ensure adequate time is available to make adjustments to the pumping schedule if necessary, to ensure significant impacts do not occur. The model shall be calibrated to the new drawdown data collected since project startup. Based on the results of the recalibrated model, a revised schedule for pumping and revised trigger levels shall be determined that will not be expected to cause a greater than 10% decrease in groundwater inflow to Little Lake. A revised plan for pumping rate and/or duration of pumping shall be submitted with full documentation to the Inyo County Water Department by the end of the 1st year of pumping. Pumping can continue as long as trigger levels in designated monitoring points that prevent a significant impact are not exceeded, and other signs of substantial impact on surface water bodies (Little Lake, springs, and wetlands) are not observed, as determined by a qualified person approved by Inyo County Water Department provided by the applicant. (FEIR, p. 3.2-49.)

An alternative option to minimize impacts to Little Lake could include pumping for one or more years at full scale and model recalibration as prescribed above; however, then reducing pumping to a lesser degree and/or allowing pumping for a longer period of time along with implementing a groundwater diversion plan at Little Lake. The diversion system would include additional pumping from an existing well at the Little Lake Ranch property, if feasible, or construction of a new well. Water would be piped from the well location along existing unpaved roads to the lake where it would be discharged. Water would be withdrawn at the minimum rate necessary to sustain water availability to Little Lake and the lower pond areas. The pumping amount and duration for a water diversion at Little Lake would be determined by a qualified person approved by the Inyo Count Water Department, and provided by the applicant, based on the recalibrated model. Diversion would only be effective and implementable to minimize effects to less than significant levels if it was:

- Feasible given the availability of water at Little Lake and would not result in impacts to existing springs (e.g., Coso Spring)
- Agreed upon with Little Lake Ranch and the applicant
- Funded by the applicant

- Required for a reasonable timeframe (i.e., 20 years) that ensured accountability and funding by the applicant to mitigate all effects. (FEIR, p. 3.2-50.)

If any of the above criteria are not met, then pumping would be scaled back or terminated based on model recalibration as previously described. If determined feasible, the applicant shall use biological and archaeological monitors during all ground disturbance activities associated with the construction of the augmentation plan components. The applicant shall also be responsible for obtaining any required permits for the diversion plan at the time that it is designed and implemented. (FEIR, p. 3.2-50.)

Depending on the permeability of lake bed sediments (which is currently unknown), groundwater diversion on the property may slightly raise or lower the groundwater table beneath Little Lake. If more permeable sediments are present, more water will seep back into the aquifer through the lake bottom. If less permeable sediments are present, less groundwater will seep back into the aquifer beneath the lake and drawdown may increase over and above the drawdown created by Hay Ranch well operation. However, if less groundwater seeps back into the aquifer, less groundwater will need to be diverted to maintain the lake level. Flow diversion would not likely impair spring or siphon well flow because most of the groundwater would be returned to the aquifer or pond system by way of seepage from the lake bottom or infiltration losses from the outfall stream. (FEIR, p. 3.2-50.)

Diversion by pumping groundwater from one of the Little Lake Ranch wells into the lake reportedly has been conducted in the past; however, details of previous water diversion efforts were not available for review. The modeling indicated that pumping a well near the south end of the lake or farther south on the Little Lake Ranch property would minimize impacts on Little Lake. The currently unused Little Lake Hotel well was reportedly artesian indicating that it is completed below the groundwater table in a confined groundwater-bearing zone. Extraction from the Hotel well or from the depth interval screened by that well, south of Little Lake, would minimize impacts to the lake and shallow groundwater. (FEIR, p. 3.2-50.)

Use of a biological and archaeological monitor during construction of the augmentation plan would minimize potential impacts to biological and cultural resources. Use of a monitor would allow sensitive resources to be avoided. Impacts to biology and cultural resources would likely be less than significant due to the scale of the project (which would likely include a 20-foot long pipeline) and the fact that access and construction would occur in previously disturbed areas. The applicant would also arrange for the appropriate electrical upgrades, and fund the cost of supplying and maintaining the electrical power, well, and pump equipment, if needed, at Little Lake Ranch to support pumping. The timing of the implementation of the proposed temporary augmentation plan is defined and would be determined through implementation of the HMMP prescribed in mitigation measure Hydrology-1. (FEIR, p. 3.2-50.)

It should also be noted that the applicant is subject to all

regulations as stated in the Inyo County Code, Chapter 18.77.045 and 18.77.055, which allows for the CUP to be challenged if at any time if conditions of the permit are not being implemented or pumping is proven to be "causing unreasonable effect on the overall economy or environment of Inyo County." The permit could be modified or revoked as a result. Conditions of the code also help to minimize the potential for potentially significant impacts associate with the project. The final decision on any modifications to the CUP shall be in compliance with the Inyo County Code. (FEIR, p. 3.2-50.)

d. Decommissioning

Decommissioning would involve removing above ground project components, including the tanks and the equipment on the Hay Ranch property, and abandoning the underground pipeline in-place. Pumping of the Hay Ranch wells would terminate and no more water would be transported out of the basin as part of the proposed project. (FEIR, p. 3.2-50.)

Impacts to groundwater levels from decommissioning would cease; however, there is a time lag for drawdown caused by the previous operations of up to 30 years or more after pumping has ceased. Groundwater levels would begin rising back to predevelopment levels following the time lag. Groundwater levels are expected to continue to decrease for a period of time following cessation of project pumping, as previously described, in areas in the southern part of the valley. Mitigation measure Hydrology-4 requires monitoring during pumping to ensure that trigger levels for groundwater drawdown in all monitoring wells will not be exceeded even after pumping ceases. Impacts would be less than significant with implementation of this measure. (FEIR, p. 3.2-51.)

3. Potential Impact 3.2-3: The potential to cause a significant alteration in the temperature or water levels of the surface features at Coso Hot Springs through injection of additional water into the Coso geothermal reservoir

a. Overview of Impact

Construction of the proposed project would have no impact on the Coso Hot Springs. Project operation has the potential to impact the hot springs. The Coso Hot Springs have been monitored closely since the beginning of geothermal production in 1988. On-going numerical modeling has been performed to understand the relationship between changes in Coso Hot Springs and geothermal development. Observed variations in hot springs may or may not be a result of the existing geothermal operations, although strong evidence supports a relationship where reduced pressure in the geothermal field creates an increase in the size of the steam cap. This increased steam cap is believed to have influenced the hot springs, making them initially increase in water level and temperature right after geothermal activity commenced in the late 1980s. The proposed project involves injecting water into the system, which theoretically could counter the pressure differential and result in a decrease or stabilization of the steam-dominated

portion of the reservoir and a decrease (or stabilization) in water level and temperature in the hot springs. These changes could make the hot springs closer to their pre-geothermal development condition. (FEIR, p. 3.2-51.)

The geothermal system is highly complex and also influenced by many natural factors. Negative changes to the hot springs are not expected as a result of the proposed project. The monitoring program established at the beginning of the development of the Coso geothermal resource and specified in the original 1979 MOA between CLNAWS, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation records physical changes in the Hot Springs. This existing, ongoing monitoring program provides a safeguard for the Hot Springs by providing a long history of the physical conditions at the Hot Springs before the project and a record of the physical conditions through the life of the project. (FEIR, p. 3.2-51.)

b. Construction

Construction would have no hydrologic impacts on the Coso Hot Springs. Construction would occur on the surface, 2.5 miles from the Coso Hot Springs and would not involve the geothermal reservoir or result in impacts to the reservoir. (FEIR, p. 3.2-51.)

c. Operation and Maintenance

Project operation includes injection of groundwater into the existing geothermal field in the Coso range at a rate of approximately 4,839 acre-ft/yr (or 3,000 gpm of water or 1,500 kph) into the reservoir. The water would be added to the existing injection system, which is designed to distribute the water at multiple locations within the reservoir in order to maximize the production from the injection and minimize cooling or ponding of injected water. Evaluation of the effectiveness of the injection program would continue throughout the project and adjustments would be made as additional information is gathered. (FEIR, p. 3.2-51.)

Injection may or may not have an impact on the nearby Coso Hot Springs. The hot springs are made up of a series of pools located 2.5 miles from the proposed injection site. The hot springs are believed to be created by brine and steam that condenses at it reaches the surface, which travels along the Coso Wash Fault. The springs are a site of Native American interest and included in the National Register of Historic Places (refer to Section 3.5 Cultural Resource). Concerns regarding the potential effects of the project on the Coso Hot Springs include potential changes to the temperature, water levels or appearance of the Coso Hot Springs, and related surface manifestations of the Coso geothermal system as a result of the proposed injection into the geothermal reservoir. (FEIR, p. 3.2-52.)

The Coso Hot Springs have been monitored continuously since geothermal production began in 1988. The monitoring results suggest that water temperatures and average water levels in Coso Hot Springs South Pool have increased over time. South Pool water levels stabilized rapidly; however, temperatures increased

until 1993, then decreased in 2002 (Figure 3.2-18, Geologica 2007). (FEIR, p. 3.2-52.)

Elsewhere in the Coso Hot Springs area, steam manifestations have both increased (Pipeline and Fault Line fumaroles) and decreased (Devil's Kitchen). Water levels in wells east of the hot springs have decreased in area, but remained steady after the initial change (Coso #1), while wells west of the Coso Hot Springs (4P and 37-4TCH) have increased in area following the initial change. Many of the changes since the onset of geothermal reservoir production have been abrupt and erratic, whereas reservoir production has been relatively steady. Changes in chemistry of the monitored surface manifestations are variable, but generally reflect a decrease in brine component of the water making up the surface manifestation relative to the steam or steam condensate component. (FEIR, p. 3.2-52.)

Steam flows in wells, water levels in wells, and surface manifestations reflect seasonal (and sometimes diurnal) variations (Geologica 2007). Changes to surface manifestations do not appear to correlate temporally with available injection data. Nor do they correlate with changes in rainfall or seismic events (Geologica 2005; 2006; 2007). (FEIR, p. 3.2-52.)

Innovative Technical Solutions, Inc. (ITSI) prepared an independent analysis of the hot springs in April 2007 for the Geothermal Program Office of the US Navy. The purpose of the study was to investigate and model a possible connection between geothermal production and changes observed at the Coso Hot Springs since 1988. The report prepared by ITSI in 2007 suggests that there is a correlation between the increase in the steam zone within the reservoir and increased steam flow up the Coso Wash Fault. Increases in temperatures and water levels in the South Pool are related to increased steam discharge based on numerical simulation. Changes in chemistry (Geologica 2005; 2006; 2007), and stable isotopes (Adams 2004) also suggest increased geothermal reservoir steam discharge at the surface. (FEIR, p. 3.2-52.)

There has been extensive study of the relationship of the Coso Hot Springs to the geothermal reservoir and local groundwater, particularly studies initiated by the Navy (including Erskine and Lofgren 1989, Guler, 2002, Williams, 2004 and ITSI 2007). Most studies indicate that there is no dilute low-temperature groundwater overlying the reservoir (Adams et al. 2000). Although there is some evidence of geothermal discharge to groundwater systems south to Indian Wells Valley and west towards Rose valley (Williams 2004), the relationship of the developed portion of the geothermal system to surrounding groundwater appears to be limited by no-flow boundaries such as the Coso Wash Fault and a mineralogical cap (ITSI 2007). (FEIR, p. 3.2-52.)

Stable isotopic signatures of Coso Geothermal fluids have been evaluated for purposes of identifying the source of the geothermal fluids (Figure 3.2-19). The High Sierras (Fournier and Thompson 1980) and the Coso Range (Williams and McKibben 1990) have been identified. Isotopic signatures of fluid samples from the surface studies also suggest that waters from the surface manifestations are affected by

boiling or have a slightly different source. (FEIR, p. 3.2-52.)

A steam zone is believed to have developed in the reservoir as a result of pressure decline related to a net mass deficit from the geothermal reservoir (ITSI 2007). The proposed project would reduce the net mass deficit by approximately 1,500 kph from 50 percent to less than 20 percent, thereby slowing or reducing this change. Projected overall reservoir behavior based on reservoir modeling by Coso (personal communication 2008) indicates that production declines would slow, suggesting pressure support, and enthalpy would stabilize or decrease, suggesting the impact of injection related to the proposed project on the geothermal reservoir is most likely to reduce the growth of the steam zone within the reservoir. (FEIR, p. 3.2-53.)

Although changes in surface manifestations described above correlate temporally with the onset of geothermal development, the direct relationship between development of the resource at Coso and the variation in the physio-chemical character of the Coso Hot Springs such as South Pool is less clear. ITSI (2007) suggests that the development of the steam zone has produced increase steam discharge along the Coso Wash Fault and the rise in water levels and temperatures in South Pool are related to increased steam discharge to the surface. This correlation is not unreasonable and has been suggested for correlations between changes in surface manifestations and development of other geothermal fields (Sorey 2000). However, the changes in South Pool have occurred in abrupt steps with some reversals (see Figure 3.2-3b) and the growth of the vapor zone in the reservoir has been more gradual than changes in South Pool. (FEIR, p. 3.2-53.)

Geothermal development may or may not have produced observed changes to the Coso Hot Springs. If the observed changes at Coso Hot Springs are related to an increasing steam zone within the reservoir related to geothermal development, the proposed project would likely reduce or reverse those changes by reducing the development of the steam zone. (FEIR, p. 3.2-53.)

Impacts to the surface manifestations of the Coso geothermal system related to the project would be minimal because:

1) Connection to the reservoir appears to be indirect

2) The proposed project would increase liquid injection and decrease the net withdrawal related to geothermal development thereby minimizing the pressure decrease-related development (or possibly reversing) of a vapor-dominated zone within the reservoir. By minimizing changes in the reservoir from the existing geothermal project, changes to the surface manifestations that may be connected to the reservoir would be minimized. (FEIR, p. 3.2-54.)

Therefore, depending on the level of connection, this project will act to minimize additional changes because the goal of the project is to support reservoir

pressure and therefore the project is unlikely to create changes in surface manifestations. (FEIR, p. 3.2-54.)

Potential impacts to the hot springs from the original Coso Geothermal Power Development fall under the existing 1979 MOA between CLNAWS, the SHPO, and the Advisory Council on Historic Preservation (refer to Appendix E). This MOA addresses development of geothermal resources on Navy fee-acquired land within the Coso known geothermal resource area (KGRA). The proposed project is part of the development of the Coso KGRA; therefore, it falls under this MOA. The MOA includes consultation and although this project is not expected to have a significant impact on Coso Hot Springs, the existing monitoring program provides both a long baseline of physical conditions as well as monitoring over the life of the project. This existing monitoring program includes acquisition of appropriate data to monitor changes to the Hot Springs over the life of the project presenting additional safeguard for the Hot Springs and an agreement for handling any changes to the hot springs. With implementation of measures in the MOA, the project is not expected to have a significant impact on Coso Hot Springs. No mitigation for the proposed project is needed. The 1979 MOA is included in Appendix E to this EIR. (FEIR, p. 3.2-55.)

d. Decommissioning

Decommissioning would involve removal of project equipment on public land and abandonment of the pipeline in place. Equipment on the Hay Ranch property would be removed and disposed of, stored, or recycled. Injection would cease just prior to the decommissioning phase. Some changes may occur to Coso Hot Springs after project decommissioning; however, changes would be a result of restoration of natural conditions and would therefore not be significant. Decommissioning would have less than significant impacts on the Coso Hot Springs. (FEIR, p. 3.2-55.)

4. Potential Impact 3.2-4: The potential to substantially alter the existing drainage pattern in the project area in a manner which would result in substantial erosion or siltation on- or off-site

a. Overview of Impacts

Grading, foundation work, installation of drainage structures, and surface activities would result in temporary disturbance of approximately 60.5 acres of native vegetation and soils, and could result soil erosion and siltation of on and off-site drainages. These potential erosional impacts would be mitigated to less than significant levels through implementation of a SWPPP and implementation of an erosion control plan. Impacts would be less than significant. Project operation would have less than significant impacts on existing drainages and erosion or siltation. Some water discharge may be performed for pipeline maintenance, but it would be minimal and would not cause substantial siltation of existing waterways. (FEIR, p. 3.2-55.)

b. Construction

Wells. Wells would require the installation of down hole pumps and equipment and would have no potential to substantially alter existing drainage patterns on the project site that could result in erosion or siltation. Installation of the down hole pumps would not require any ground disturbance. (FEIR, p. 3.2-55.)

Lift Pump Station, Substation and Associated Facilities, and Tanks. Construction of these components would require about 6 acres of ground disturbance. With the exception of the 1.5 million gallon high point tank, all other facilities would be constructed on the Hay Ranch property. Drainage on the Hay Ranch property is to the south due to the gentle slope of the property in that direction. Construction would not change the existing drainage pattern such that substantial erosion or siltation would occur off-site. (FEIR, p. 3.2-55.)

Any exposed soils remaining after the construction of the station would be revegetated in accordance with COC's approved revegetation plan to minimize soil erosion. The lift pump station area would be finish-graded to provide for drainage to the southeast (the direction of natural slope on the parcel). A SWPPP would be implemented for the entire project as required by law to avoid erosion impacts due to drainage. Implementation of the mitigation measure Geology-1, which requires an erosion control plan would also reduce potential impacts to less than significant levels. (FEIR, p. 3.2-55.)

Pipeline. Construction of the pipeline route would require approximately 53.5 acres of ground disturbance. Grading would be minimized, particularly in the steeper areas near the high point tank, by constructing the right-of-way perpendicular to the contours. At the completion of pipeline construction, the right-of-way would be restored by finish grading with installation of water bars, and application of erosion protection in accordance with COC's approved revegetation plan to minimize effects to drainage. All fill slopes would receive erosion protection by redistribution of topsoil and application of a standard desert seed mixture at a rate of 25 pounds per acre. There are no perennial drainages in the vicinity of the pipeline route. (FEIR, p. 3.2-56.)

c. Operation and Maintenance

Wells, Lift Pump Station, Substation and Associated Facilities, and Tanks. These facilities would not alter drainage in the project area that could lead to substantial siltation off-site. These facilities would add about 3 acres of impervious surface. Water runoff would follow natural drainage patterns and would not result in substantial erosion of soil. The high point tank includes an overflow drain, which would be directed to an existing drainage. Soil erosion may occur at this point, depending on the quantity of water that could be released from the tank. To minimize soil erosion at either tank from periodic water releases, mitigation measure Geology-2 would be implemented, which requires stabilizing tank outlets with rip rap to minimize soil loss and sedimentation. (FEIR, p. 3.2-56.)

The tanks have sensors and alarm systems that are manned at the power plant 24 hours per day to minimize overflow and to identify emergency situations or failures. Catastrophic failure of either tank could cause soil erosion, particularly at the high point tank, which is larger and located on a hill. The potential for catastrophic failure is low and the impact is considered less than significant. (FEIR, p. 3.2-56.)

Pipeline. Maintenance of the pipeline may require some small discharges of water from air release valves along the pipeline. Erosion and sedimentation could occur from drainage of the pipeline for maintenance. These discharges would be small quantities (tens of gallons) of water directed towards the natural drainage adjacent to the road. If maintenance requires excavating portions of the pipeline, mitigation measure Geology-1 would be implemented to minimize erosion to less than significant levels. (FEIR, p. 3.2-56.)

Decommissioning

Decommissioning would involve removing or abandoning equipment in place. Minimal soil disturbance would be involved with the project decommissioning to remove foundations. The ground would be revegetated according to COC's approved revegetation plan. Mitigation measure Geology-1 would also be implemented. The proposed buried pipeline would be abandoned in place. Impacts would be less than significant with the appropriate measures. (FEIR, p. 3.2-56.)

5. Potential Impact 3.2-5: The potential to cause substantial flooding that could result in damage to life or property

a. Overview of Impacts

The proposed project would not cause flooding from construction, nor would operation result in a significant potential to cause or be damaged by floods. Impacts related to flooding and flooding hazards are less than significant. (FEIR, p. 3.2-56.)

b. Construction

Construction would not cause substantial flooding. Some water would be used for dust suppression; however only small quantities would be applied to disturbed surfaces. Flooding would not occur. (FEIR, p. 3.2-56.)

c. Operation

Haiwee Creek runs south along the east side of US Highway 395, portions of which are identified as a Zone A Flood Zone. None of the structures of the proposed project are within the 100-year flood hazard area as mapped on the federal Flood Hazard Boundary Map or the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 060073 1925B, dated September 4, 1985. If the creek

flooded greater than the 100-year event as mapped by the FEMA projections, portions of the Hay Ranch property could experience minor flooding. The probability of this magnitude storm event occurring is so remote as to be less than significant. There are no inhabited structures or residences on the Hay Ranch site, nor along the 9 mile pipeline route. (FEIR, p. 3.2-57.)

The Hay Ranch wells are at elevation 3,437 feet amsl and the south spillway of Haiwee Reservoir is at an elevation of 3,760 feet amsl. The reservoir holds approximately 28,000 acre-feet of water. The dam is located approximately 4 miles north of the Hay Ranch property and the terrain from the dam to Hay Ranch is a relatively broad, open plain. If the dam suffered catastrophic failure, floodwaters would inundate the substation and nearby pipeline corridor, and damage structures as far away as Coso Junction. Therefore, the substation and portions of the pipeline corridor could suffer major flood damage. The substation would immediately become inoperable and pose no threat to workers or nearby residences or businesses. No element of the proposed project would lead to increased probability of a catastrophic failure of Haiwee Dam, and, the probability of a catastrophic failure is so remote as to be considered less than significant. (FEIR, p. 3.2-57.)

The project includes two water storage tanks, one holding 150,000 gallons and the other holding 1,000,000 gallons. Failure of these tanks would cause localized ponding on the Hay Ranch property and in the region of the high point tank. The tanks are designed to prevent catastrophic failure, including equipment that detects water level and leaks. The likelihood of catastrophic failure of the tanks is so remote that it is considered less than significant. Leakage of the pipeline could also cause some localized flooding; however, equipment would monitor pressures in the pipeline and regular inspection and maintenance would minimize the chances of pipeline failure that could result in localized flooding.

d. Decommissioning

Decommissioning would involve removal of project equipment on public land and abandonment of the pipeline in place. Decommissioning would minimize the potential for localized flooding since the project would no longer pump, store, or deliver water. There would be no flooding related impacts from project decommissioning. (FEIR, p. 3.2-57.)

6. **Potential Impact 3.2-6: The potential to cause a violation of water quality requirements or otherwise degrade existing water quality in the area or impact drinking water and drinking water supplies**

a. Overview of Impacts

Substantial withdrawals of water could potentially cause changes in groundwater flowpaths, such that the source of water at a particular well could be from a different area with a different water quality. However, given the scale of the area, it

appears unlikely that changes in groundwater flow paths will be far-ranging enough to cause significant changes in the quality of groundwater. No significant impacts to surface water or groundwater quality are expected during construction or as a result of operation of the project. (FEIR, p. 3.2-57.)

b. Construction

Construction is not anticipated to have any impact to groundwater or surface water quality. The groundwater table is located more than 200 feet below ground surface along the pipeline alignment; spills or releases from construction equipment are unlikely to migrate down to the water table in sufficient volume as to impact groundwater quality. No perennial surface water bodies are located within or down gradient of the construction and therefore there impacts to surface water quality from construction are unlikely. (FEIR, p. 3.2-57.)

c. Operation and Maintenance

Operation of the proposed project is unlikely to have any significant impact on groundwater or surface water quality. The groundwater extracted by the Hay Ranch wells would primarily come from drainage of saturated soil pore space in the recent alluvial sediment deposits near the wells and to a lesser extent, groundwater inflow from Owens Valley and mountain front precipitation recharge in the Sierra Nevada range. (FEIR, p. 3.2-58.)

Groundwater flowing towards Little Lake Gap, currently, and after project startup, primarily comes from mountain front precipitation recharge entering the basin at locations downgradient (south) of the Hay Ranch with a smaller component of groundwater flowing downgradient (southward) within the valley aquifer. The mountain front recharge has good water quality (total dissolved solids <500 mg/L, see section 3.2.3. The valley aquifer water is higher in dissolved solids relative to mountain front recharge (total dissolved solids > 500 mg/L). Operation of the Hay Ranch project would have no effect on the chemical character of Sierra Nevada mountain front recharge; consequently, the project is unlikely to impact the quality of groundwater flowing towards Little Lake Gap and as seen in the surface manifestions (i.e., springs, siphon wells, Little Lake, and surrounding ponds and wetlands). (FEIR, p. 3.2-58.)

If the inflow to the southern part of Rose Valley from groundwater flowing downgradient within the valley aquifer is reduced, it is possible that the dissolved solids of groundwater flowing southward towards Little Lake Gap may be slightly reduced. By reducing the component of inflow of saline valley basin water relative to dilute mountain recharge water, the dissolved solids of groundwater in the Little Lake area may decrease, improving water quality. Effects to water dependent vegetation are addressed in Section 3.4 Biological Resources. (FEIR, p. 3.2-58.)

d. Decommissioning

Decommissioning would involve removal of project equipment on public land and abandonment of the pipeline in place. Decommissioning would not

impact water quality since it would result in the restoration of natural conditions in the aquifer. The groundwater table is located more than 200 feet below ground surface along the pipeline alignment; spills or releases from demolition equipment are unlikely to migrate down to the water table in sufficient volume as to impact groundwater quality. (FEIR, p. 3.2-58.)

7. Findings

a. **With the implementation of mitigation measures, the Project will have a less than significant impact on hydrology and water quality. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan. These mitigation measures specifically address the potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.**

- **Hydrology-1: The Hydrological Monitoring & Mitigation Program (HMMP) included in Appendix 1 of the FEIR shall be finalized and implemented.**
- **Hydrology-2: Groundwater wells located in Rose Valley, and which are affected by the project, will be monitored according to the provisions of the HMMP and such wells and/or equipment will be modified as necessary to allow such wells to function at current levels.**
- **Hydrology-3: Monitoring and data collection shall occur at a series of monitoring wells established by the project for that purpose, and drawdown trigger threshold levels shall be established for each such well in order to protect Rose Valley groundwater supplies. Monitoring shall occur at a frequency sufficient to detect important changes and trends in water levels.**
- **Hydrology-4: Pumping shall cease or decrease, at the direction of the Inyo County Water Department, if trigger levels are exceeded at two or more of the monitoring wells by at least 0.25 feet, or if a maximum acceptable drawdown level is exceeded in any monitoring point.**
- **Geology-1: An erosion control plan shall be prepared and implemented to the satisfaction of CLNAWS and the BLM to mitigate for any potential impact to CLNAWS and BLM lands.**
- **Geology-2: If erosion is seen at the drain points at the water storage tanks, the areas at the tank outlets shall be stabilized with rock rip rap to minimize loss of soil.**

Findings per State CEQA Guidelines Section 15091:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

The project will be required to monitor groundwater levels in a network of wells that will provide an early warning system, and allow for mitigation in the form of a shortened duration of pumping, to avoid significant impacts. Impacts to groundwater wells would be mitigated. The applicant would be responsible for lowering pumps or deepening wells in Rose Valley that are impacted by groundwater withdrawal from Hay Ranch.

Springs at Portuguese Bench and Rose Spring would not be impacted by the proposed project because these springs are located at higher elevations and, most likely, their source of water is predominantly Sierran recharge. Impacts to springs (not associated with Little Lake) would not occur.

Little Lake Ranch is a private property that includes wetlands and open water habitat, which is continually maintained, and is used for recreational hunting. The property is located nine miles south of Hay Ranch. The lake, surface waters, and springs at Little Lake Ranch are sourced completely by groundwater. A substantial reduction in the amount of water available at Little Lake is defined as greater than 10% reduction in water available to the surface features at Little Lake.

Mitigation has been defined that includes reducing the duration of pumping to ensure that Little Lake Ranch does not experience a reduction in flow greater than 10% as a result of the proposed project. Mitigation includes implementation of a Hydrologic Monitoring and Mitigation Program, which establishes groundwater drawdown trigger levels throughout the Rose Valley. The plan specifies that if these trigger levels are reached, specific actions must be taken to prevent Little Lake from experiencing a reduction in flows into the lake greater than 10%; the plan would therefore reduce potentially significant effects to less than significant levels.

Coso Hot Springs have been monitored closely since several years prior to the beginning of geothermal production in 1988. Ongoing numerical modeling has been performed to understand the relationship between changes in Coso Hot Springs and geothermal development. The proposed project involves injecting water into the geothermal system, which theoretically could counter the pressure differential that the system is currently experiencing and result in a decrease or stabilization of the steam-dominated portion of the reservoir and a decrease or stabilization in water level and

temperature in the hot springs. These changes could make the hot springs closer to their pre-geothermal development condition. Negative changes to the hot springs are not expected as a result of the proposed project. The monitoring program established prior to the beginning of the development of the Coso geothermal resource and specified in the original 1979 MOA between CLNAWS, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation, records physical changes in the Hot Springs. This existing, ongoing monitoring program provides a safeguard for the Hot Springs by providing a long history of the physical conditions at the Hot Springs before the project, and a record of the physical conditions through the life of the project.

The project would not have significant impacts on water quality, or alter existing drainage systems in the project area.

B. GEOLOGY & SOILS

1. Potential Impact 3.3-1: Potential to expose people or structures to substantial adverse effects from seismic hazards such as rupture of a known earthquake fault, seismic shaking, liquefaction, or landslides.

a. Overview of Impacts

Since the greater Eastern Sierra region is generally considered geologically active, most projects in the area could be exposed to some risk from geologic hazards such as earthquakes. Possible seismic hazards exhibit several forms. These include surface rupture, strong ground motion or shaking, and ground failures such as liquefaction. Impacts would have a higher potential to occur during the operation phase of the project than the construction phase. Due to the nature of the project, these potential impacts are considered less than significant. (FEIR, p. 3.3-9.)

b. Construction

The risk of a major seismic event during construction is low. Impacts of seismic-related hazards during construction would be less than significant. Most seismic impacts would be related to the design, operation, and maintenance of the facilities, as discussed below. (FEIR, p. 3.3-10.)

c. Operation and Maintenance

Project operation and maintenance impacts could include effects to structures from strong ground motion or shaking, surface rupture, or ground failures such as liquefaction. The project structures would be mostly unmanned so impacts to humans from seismic events would be less than significant. (FEIR, p. 3.3-10.)

A high potential exists for the wells, lift pump station, substation and associated facilities, tanks, and pipeline to experience the effects of strong to very strong ground motion or shaking during the project lifetime due to a large magnitude earthquake on an active fault within the project region. All of these structures would be

constructed in compliance with the Uniform Building Code (UBC) Level IV as it relates to earthquake hazards in order to minimize structure damage during an earthquake. The potential impact is considered less than significant. (FEIR, p. 3.3-10.)

The project area is located outside any identified Alquist-Priolo Earthquake Fault Zone areas. There is no other substantial evidence of a known fault on the Hay Ranch property or along the 50- foot wide, 9-mile pipeline corridor. The project site lies approximately 2.5 miles west of the Airport Lake Fault Zone, which is a designated Alquist-Priolo fault hazard zone; however, this fault hazard zone does not cross the project area. Minor faults exist in the project vicinity, but are not known to cross the proposed pipeline route or intersect any proposed project component. Ground rupture is not expected to occur within the project area. The potential for ground rupture by faulting on the project site is less than significant. (FEIR, p. 3.3-10.)

The wells on the Hay Ranch property are over 150 feet deep before they reach groundwater. Earthquake-induced liquefaction would not be an issue in the project area because of the depth to saturated soils. (FEIR, p. 3.3-10.)

The potential for earthquake-induced failure of slopes underlain by presently stable bedrock during a future large earthquake in the region is considered low. Hay Ranch and a portion of the pipeline corridor are on relatively flat ground. The portion of the pipeline route in the Coso Range does not cross known landslides and there is no indication of historical landslides at or near the project site as observed during a reconnaissance site visit in October 2007. The pipeline and all other constructed structures would not be built on slopes exceeding 30 percent, in compliance with the Inyo County General Plan. Impacts due to landslides would not occur. (FEIR, p. 3.3-10.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. The risk of a major seismic event during decommissioning is low. Impacts of seismic-related hazards during decommissioning would be less than significant. (FEIR, p. 3.3-10.)

2. Potential Impact 3.3-2: Potential to induce earthquakes that could cause significant damage to people or structures

a. Overview of Impacts

Injection of water into the geothermal system at the Coso Geothermal field could induce microseismic activity as has been shown by studies of injection in other geothermal areas (Stark 1992; Enedy et al. 1992; Kirkpatrick et al. 1999; Smith et al. 2000; Stark 2003). Seismic events would likely be too small to cause significant impacts or damage to structures. (FEIR, p. 3.3-10.)

b. Construction

Construction of the project and its components would not induce

earthquakes. (FEIR, p. 3.3-11.)

c. Operation and Maintenance

The operation of the proposed project includes injection of cool water (most often less than 37 degrees Celsius (98.6 0F)) into the Coso geothermal field. Injection of cool water in enhanced geothermal systems has been recently studied in terms of causing induced seismic activity, particularly at The Geysers, a geothermal production field located near Santa Rosa, California (Majer 2004). The operators at The Geysers inject wastewater from the City of Santa Rosa to supplement the geothermal reservoir. A white paper was recently prepared by E.L. Majer (Majer 2004), entitled Induced Seismicity and Enhanced Geothermal Systems, based on research of injection-induced seismicity at The Geysers. The paper was prepared for the Center for Computational Seismology at the Ernest Orlando Lawrence Berkeley National Laboratory in Berkeley, California. Majer found that for deep induced microearthquakes occurring after the 1980s there seems to be a consensus that these are correlated to local injection rates with some time lag (Stark 1992; Enedy et al. 1992; Kirkpatrick et al. 1999; Smith et al. 2000; Stark 2003). Stark (1992) showed that plumes of microearthquakes are clustered around many injection wells, and the seismic activity around each injection well correlates with its injection rate. (FEIR, p. 3.3-11.)

Mossop and Segall (2004) hypothesized that injection-induced microearthquakes are probably caused by thermo-elastic perturbation due to cold-water injection into a hot reservoir. When cool water flows into hot rock fractures, the fracture faces contract by cooling, loosening the frictional forces across the fractures and thereby allowing stress release by seismic slip. Although Mossop and Segall (2004) studied other mechanisms (e.g., loss of effective stress due to hydraulic pressure in the fracture), they concluded that it is the temperature contrast between the injected water and the hotter rock fracture surfaces that is probably the dominant mechanism driving injection-induced seismicity at the example location that they studied (The Geysers). (FEIR, p. 3.3-11.)

Majer also concluded that induced seismicity in geothermal regions can not be assumed to be automatically linked on a one to one basis with injection. There are many different mechanisms within geothermal regions that are interacting to affect the seismicity. In most areas that are prime candidates for enhanced geothermal activities, the potential reservoir possesses one or all of the following characteristics: it is either hot, has a low fluid content, low permeability, has a high content of undesirable gases, and is in a tectonically active area. All of these properties may either interact to increase the seismicity as the system is affected by injection or withdrawal, or may constructively interact to have a smaller effect on seismicity. Seismicity at The Geysers has been shown to increase at the outset of injection. As time has proceeded the overall energy release is actually decreasing. This is not surprising if the system is coming to equilibrium after each injection perturbation. Induced seismicity has been shown to occur in many geothermal areas as injection is started or increased. However, as been observed at The Geysers this seismicity is on a field-wide basis as well as associated with individual injection wells. (FEIR, p. 3.3-11.)

In a number of geothermal fields and potential geothermal fields in the U.S. the induced seismicity activity or potential for seismicity seems to be below the significant damage potential (less than 5.0). This is for several fundamental reasons,

1. There are no faults close enough to create a large damaging event

2. If there are large faults near by, then it is usually the case that large events are initiated at depth (3 to 6 miles), and most geothermal production and injection activities are shallower than 3 miles, thus making it difficult to trigger a large event

3. In many cases there may be no negative effects if the seismicity is small or the geothermal area is remote. (FEIR, p. 3.3-12.)

Injection of brine and condensate has been part of the development at the Coso geothermal field since the beginning of the project. The Navy Geothermal Program Office (GPO) in conjunction with the field operator has been conducting a seismological monitoring program at the geothermal field using a 16-station Digital Seismic network. Results indicate that an active fracturing process that can be related to injection and circulation of fluids has produced an extensive amount of microseismicity. At Coso and at many geothermal fields, this induced seismicity is primarily located along pre-existing fractures (Feng and Lees 1998). This microseismicity occurs in a context of extremely active regional seismicity probably related to active tectonic setting. (FEIR, p. 3.3-12.)

The injection of cool water into the geothermal system at the Coso geothermal field may induce some microseimicity, as suggested by recent research. The seismic effects would be less than significant because the induced seismicity would not likely be large enough to cause substantial damage (for the reasons stated above). The project area is remote enough such that small seismic events would also not cause significant damage. Residences are over 10 miles from the injection area. Impacts would be less than significant. (FEIR, p. 3.3-12.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. Neither of these activities would induce earthquakes. Impacts would not occur. (FEIR, p. 3.3-12.)

3. <u>Potential Impact 3.3-3: Potential to expose people or structures to substantial adverse effects from volcanic hazards</u>

The last known eruption in the Coso volcanic field was approximately 40,000 years ago. The area is potentially active and the chance of an eruption within the lifetime of the project is low. Impacts are not expected to occur during construction, operation, or decommissioning. (FEIR, p. 3.3-12.)

4. Potential Impact 3.3-4: Potential to cause soils hazards such as damage to structures from expansive or compressible soils, cause erosion of soils that could lead to instability or loss of important soils, or result in subsidence

a. Overview of Impacts

Soils impacts from construction are primarily related to erosion. Grading, foundation work, installation of drainage structures, and surface activities would result in temporary disturbance of approximately 60.5 acres of native vegetation and soils, and could result in soil erosion impacts. These potential erosion impacts would be mitigated to less than significant levels. (FEIR, p. 3.3-12.)

Potential operational impacts associated with soil hazards include impacts to structures from compressible or expansive soils, impacts to topsoil from erosion, and impacts related to ground subsidence rates from groundwater pumping and injection. Potentially significant impacts would be mitigated to less than significant levels. (FEIR, p. 3.3-12.)

b. Construction

Wells. The two wells already exist on the Hay Ranch property. Construction would be limited to installation of two down-hole shaft-driven pumps. This construction would not require ground disturbance and impacts relating to soil erosion or other soil hazards would not occur. (FEIR, p. 3.3-13.)

Lift Pump Station. The construction of the lift pump station involves approximately 4.75 acres of ground disturbance. Minimal grading would occur and the area would be stripped of vegetation where the station would be constructed. Any exposed soils remaining after the construction of the station would be revegetated in accordance with COC's approved revegetation plan to minimize soil erosion. The lift pump station area would be finish-graded to provide for drainage to the southeast (the direction of natural slope on the parcel). A Storm Water Prevention Pollution Plan (SWPPP) would be implemented for the entire project as required by law to avoid erosion impacts due to drainage (refer to discussion in 3.2 Hydrology and Water Quality). Impacts would be reduced to less than significant levels with appropriate project plans. (FEIR, p. 3.3-13.)

Substation and Associated Facilities. The construction of the substation and its associated facilities would require approximately 0.5 acres of ground disturbance related to cut and fill and grading. COC's revegetation plan would be implemented as specified in the project description and impacts would be less than significant. (FEIR, p. 3.3-13.)

Tanks. Two water storage tanks would be constructed: a 250,000 gallon tank on the Hay Ranch property and a 1.5 million gallon tank on CLNAWS lands. Less than 1 acre of soils would be disturbed for construction of these tanks. COC's revegetation plan would be implemented wherever necessary to reduce erosion impacts

on the Hay Ranch property to less than significant levels. Implementation of the following mitigation measure would reduce potential impacts on CLNAWS lands to less than significant levels. (FEIR, p. 3.3-13.)

Geology-1: An erosion control plan shall be prepared and implemented to the satisfaction of CLNAWS and the BLM to mitigate for any potential impact to CLNAWS and BLM lands. (FEIR, p. 3.3-13.)

Pipeline. The proposed project would include the construction of a mostly-buried 9 -mile water transmission pipeline. Approximately 53.5 acres of soils would be disturbed for construction of the pipeline. Grading would be minimized, particularly in the steeper areas near the high point tank, by constructing the right-of-way perpendicular to the contours. At the completion of pipeline construction, the right-of-way would be restored by finish grading with installation of water bars, and application of erosion protection in accordance with COC's approved revegetation plan. All fill slopes would receive erosion protection by redistribution of topsoil and application of a standard desert seed mixture at a rate of 25 pounds per acre. The buried pipeline would be placed in an envelope of sand bedding to minimize drainage from backfill operations. (FEIR, p. 3.3-13.)

With implementation mitigation measure Geology-1 and previously described project plans, impacts related to erosion of topsoil and other soils would be less than significant. (FEIR, p. 3.3-13.)

c. Operation and Maintenance

Wells. The wells would be pumped at an average rate of 3,000 gallons per minutes (gpm) and a maximum rate of 4,000 gpm. Operation of the wells would have no impacts related to compressible or expansive soils, nor would it cause erosion. (FEIR, p. 3.3-13.)

Ground subsidence or collapse could occur from withdrawal of fluid from unconsolidated sediments, poorly consolidated rock, or clay-rich basins. The well driller's logs (California Department of Water Resources 1971; California Department of Water Resources 1974) show that the soils in the project area are stable alluvial materials as expected from alluvial fan deposits and stream deposits. The Rose Valley basin is not filled with compressible clay, which would be more prone to subsidence. Subsidence, however, is related to resulting drawdown and not the change in aquifer volume. The drawdown in the immediate vicinity of the pumped wells could be sufficient to cause subsidence if the soils consisted of compressible clays or poorly-consolidated sediments; however, the sediments are well consolidated and not clay-rich. Subsidence in the Rose Valley is generally not expected due to the coarse-grained and highly consolidated nature of the deposits. Impacts would be less than significant. (FEIR, p. 3.3-13.)

Groundwater pumping could not result in significant reductions in surface water levels in Rose Valley, as described in Section 3.2 Hydrology and Water

Quality. Concern has been expressed that reductions in surface waters would increase soil erosion in the valley. However, mitigation has been included in Section 3.2 Hydrology and Water Quality to monitor groundwater drawdown, with contingency plans to prevent surface water impacts (primarily at Little Lake) from groundwater drawdown. With implementation of the mitigation in Section 3.2 Hydrology and Water Quality, surface waters would not be significantly impacted and wind blown soil erosion would not increase. (FEIR, p. 3.3-14.)

Lift Pump Station and Substation and Associated Facilities. The lift pump station would add only a small area of new impervious surface to the project area. Drainage at the project site would be directed as overland sheet flow along the natural slope of the property. The substation would add some additional impervious surface but would have a gravel base and would also drain to the southeast. Due to the small amount of new impervious surface associated with the lift pump station (less than 4.75 acres) and the gradual slope of the land and infrequent rain, sheet flow runoff should not cause substantial soil erosion. (FEIR, p. 3.3-14.)

Soils in the project area are generally coarse grained with small clay content and are not expansive; therefore the lift pump station and substation would not be impacted by expansive soil conditions. Compressible soils can be an issue for heavier features such as the substation; however, the substation site would be graded and compacted to 90 percent relative compaction to minimize any structural damage that could occur from compression. Soils hazard impacts would be less than significant for operation and maintenance of the lift pump station and substation. (FEIR, p. 3.3-14.)

Tanks. The tanks would add a small area of impervious surface. Water runoff would follow natural drainage patterns and would not result in substantial erosion of soil. The high point tank includes an overflow drain, which would be directed to an existing drainage. Soil erosion may occur at this point, depending on the quantity of water that could be released from the tank. To minimize soil erosion at either tank from periodic water releases, the following mitigation measure would be implemented. (FEIR, p. 3.3-14.)

Geology-2: If erosion is seen at the drain points at the water storage tanks, the areas at the tank outlets shall be stabilized with rock rip rap to minimize loss of soil. (FEIR, p. 3.3-14.)

The tanks have sensors and alarm systems that are manned at the power plant 24 hours per day to minimize overflow and emergency situations or failures. Catastrophic failure of either tank could cause soil erosion, particularly at the high point tank, which is larger and located on a hill. The potential for catastrophic failure is low and the impact is considered less than significant. (FEIR, p. 3.3-14.)

Soils in the project area are generally coarse grained with low clay content and are not expansive; therefore, the tanks would not be impacted by expansive soil conditions. Compressible soils can be an issue for heavier features such as the tanks; however, the tank sites would be graded and compacted to 90 percent relative compaction

to minimize any structural damage that could occur from compression. (FEIR, p. 3.3-14.)

Pipeline. Erosion of topsoil could occur from drainage. Maintenance of the pipeline may require some small discharges of water from air release valves along the pipeline. These discharges would be small quantities of water directed towards the natural drainage adjacent to the road. If maintenance requires excavating portions of the pipeline, mitigation measure Geology-1 would be implemented to minimize loss of topsoil. Operation of the facilities would not result in damage or loss of topsoil. (FEIR, p. 3.3-14.)

The pipeline would not be impacted by expansive soils, compressible soils, or other soil hazards. The pipeline's integrity would be periodically inspected and regularly maintained to minimize impacts that could cause pipeline failure and resultant soil damage and erosion. Impacts would be less than significant. (FEIR, p. 3.3-14.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. Minimal soil disturbance would be involved with the project decommissioning to remove foundations. The ground would be revegetated according to COC's approved revegetation plan. Mitigation Measure Geology-1 would also be implemented. The proposed buried pipeline would be abandoned in place. Impacts would be less than significant with the appropriate measures. (FEIR, p. 3.3-15.)

5. Potential Impact 3.3-5: Potential to cause slope instability that could threaten life or property

The project would not be constructed or operated on slopes greater than 30 percent. Maximum slopes are 24 percent. Construction is not expected to cause slope instability. The stable nature of the soils indicates that they are not prone to landslides. The pipeline would be buried and the high point tank would be placed on top of a small hill. The tank would be placed within a reinforced concrete ring. The tank would not induce or be threatened by landslides. Decommissioning would not lead to slope instability. The project would not cause impacts related to slope instability. (FEIR, p. 3.3-15.)

6. Potential Impact 3.3-6: Potential to result in the loss of availability of a known mineral resource or loss of availably of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan

There are no known mineral resources within the project area. There would be no impact to mineral resources. (FEIR, p. 3.3-15.)

7. Potential Impact 3.3-7: Potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

There are no paleontological resources expected to occur in the project area. No unique geologic features are present. Impacts would not occur. (FEIR, p. 3.3-15.)

8. Findings

a. **With the implementation of mitigation measures, the Project will have a less than significant impact on geology and soils. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan and the Hydrological Mitigation and Monitoring Plan. These mitigation measures specifically address the potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.**

- **Geology-1: An erosion control plan shall be prepared and implemented to the satisfaction of CLNAWS and the BLM to mitigate for any potential impacts to CLNAWS and BLM lands.**
- **Geology-2: If erosion is seen at the drain points at the water storage tanks, the areas at the tank outlets shall be stabilized with rock rip rap to minimize loss of soil.**
- **Hydrology-1: The Hydrological Monitoring & Mitigation Program (HMMP) included in Appendix 1 of the FEIR shall be finalized and implemented.**
- **Hydrology-2: Groundwater wells located in Rose Valley, and which are affected by the project, will be monitored according to the provisions of the HMMP and such wells and/or equipment will be modified as necessary to allow such wells to function at current levels.**
- **Hydrology-3: Monitoring and data collection shall occur at a series of monitoring wells established by the project for that purpose, and drawdown trigger threshold levels shall be established for each such well in order to protect Rose Valley groundwater supplies. Monitoring shall occur at a frequency sufficient to detect important changes and trends in water levels.**
- **Hydrology-4: Pumping shall cease or decrease, at the direction of the Inyo County Water Department, if trigger levels are exceeded at two or more of the monitoring wells by at least 0.25 feet, or if a maximum acceptable drawdown level is exceeded in any monitoring point.**

Findings per State CEQA Guidelines Section 15091:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

The proposed project would involve ground disturbance for installation of the lift pump stations, the substation and its associated facilities, the water storage tanks, and the pipeline. The potential for erosion associated with this construction would be potentially significant. COC has proposed a revegetation plan to aid in erosion control. Further mitigation has been defined in this EIR. Mitigation includes preparation and implementation of an erosion control plan to mitigate any impacts related to construction to less than significant levels.

Operation of the water tanks could also potentially cause erosion. The high point water storage tank has an overflow drain. Operation of the overflow drain and discharge of water to the existing drainage could cause erosion of the existing drainage. Mitigation to ensure stabilization of the areas of the tank outlets with rock rip rap would prevent erosion and reduce operational impacts related to erosion to less than significant levels.

C. BIOLOGICAL IMPACTS

1. Potential Impact 3.4-1: The potential to adversely and substantially impact native vegetation, general wildlife, or wildlife movement

a. Overview of Impacts

The project construction, operation, and decommissioning would cause some temporary and permanent disturbance to native vegetation and common wildlife. However, with implementation of mitigation measures, these impacts will be less than significant. The vegetative communities in the project area are common throughout the project region. Construction areas would be reseeded and revegetated after construction. The facilities on the Hay Ranch property would be landscaped with native vegetation. The project would not have a significant impact on native vegetation. The project could spread invasive species since it is a linear project. Mitigation has been incorporated to minimize the potential for spread of invasive species. (FEIR, p. 3.4-26.)

Some common small wildlife could be harmed during construction; however, due to the abundance of these species in the project region,

impacts to a few individuals would be considered less than significant. Wildlife movement would not be impacted during project construction or operation. (FEIR, p. 3.4-26.)

b. Construction

Wells, Lift Pump Station, Substation and Associated Facilities. Construction of the wells, lift pump station, and substation and associated facilities would occur on the Hay Ranch property. The predominant native vegetative communities on the property include saltbush scrub and creosote bush-white bursage scrub. These communities are widespread and common throughout the Mojave Desert. Construction of these project components would temporarily disturb about 5 acres on the Hay Ranch property, which is a small area compared with the overall occurrence of these vegetation communities in the project region. Construction areas not permanently covered with structures or hardscape would be revegetated with an approved native seed mix after construction. (FEIR, p. 3.4-26.)

New ground disturbance in the project area may increase invasive weed species and/or individuals on-site. Invasive species include cheat grass (Bromus tectorum), red brome (Bromus madritensis sp. rubens), Mediterranean grass (Schismus spp.), red-stemmed filaree (Erodium cicutarium), flixweed (Descurainia sophia), and tumble-mustard (Sisymbrium altissimum). Most of these species are widespread and abundant in the project area; however, further spread could be considered a significant impact. Mitigation measure Biology-1 would be implemented to minimize spread of invasive species to less than significant levels. (FEIR, p. 3.4-26.)

Biology-1: All project vehicles shall be washed down daily at an approved wash down location. Wash-down water areas shall be lined to contain all wash-down water and shall not be located within 100 feet of an existing water body. The wash-down water shall be allowed to evaporate and the remaining condensate and liner shall be property disposed of in a landfill. Construction workers shall be made aware of wash-down requirements for personal vehicles used along the construction corridor and of the designated wash down areas. (FEIR, p. 3.4-26.)

Some common small wildlife species, such as mice, lizards, and snakes, could be injured or killed by construction equipment and construction activities. Most individuals would scatter due to construction noise. Loss of a few individuals would not be considered significant because of the abundance of the species in the project area and region. There are similar habitats surrounding the project site for species to disperse during construction. Impacts would be less than significant. Wildlife movement would not be impacted during construction because there would be room for movement surrounding the construction site. (FEIR, p. 3.4-26.)

Tanks and Pipeline. Construction of the project pipeline and the 1.5 million gallon tank would cause temporary disturbance to native vegetation and wildlife over an area of approximately 54 acres. The native vegetative communities along the length of the pipeline route and at the high point tank site include saltbush scrub and

creosote bush-white bursage scrub (similar to the Hay Ranch property). These species are common. Vegetation removal for pipeline and tank construction would not have a significant impact on native vegetation. (FEIR, p. 3.4-27.)

Pipeline and tank construction could also cause the spread of some non-native, invasive species. Disturbed areas along the pipeline route would be reseeded with an approved mix after construction to counter some establishment of non-native, invasive species. Implementation of mitigation measure Biology-1 would further minimize the spread of invasive species. (FEIR, p. 3.4-27.)

Common wildlife could also be injured or killed during construction. Loss of a few individuals may occur due to traffic along the roadway. Impacts to a few individuals of common species would not be considered significant. Wildlife movement would not be inhibited by project construction. Pipeline construction would occur in segments. Most animals would be able to travel around or over the construction sites and most would travel at night or early morning when construction is not occurring. The impact of pipeline and tank construction would be temporary, and would not significantly impact wildlife or wildlife migration. (FEIR, p. 3.4-27.)

c. Operation and Maintenance

Wells, Lift Pump Station, Substation and Associated Facilities. Construction of these components on the Hay Ranch property would result in permanent removal of about 5 acres of vegetation. The Hay Ranch property was formerly used for agriculture, which removed about 300 acres of native vegetation. Vegetative communities on the project parcel are common in the region and impacts of permanent removal of about 5 acres would be less than significant. The substation and lift pump station would be landscaped with native vegetation. Impacts to native vegetation would be less than significant. (FEIR, p. 3.4-27.)

Operation and maintenance would not likely harm wildlife. There is abundant surrounding habitat for common species. Permanent removal of about 5 acres of vegetation would not adversely impact wildlife species in the area. (FEIR, p. 3.4-27.)

Operation and maintenance would require travel to the Hay Ranch property a few times per week. Vehicles would use existing roads and unpaved roads to access the wells, lift pump station, and substation. The spread of invasive species would be minimal and less than significant. (FEIR, p. 3.4-27.)

Tanks. The 250,000 gallon tank is discussed above. Operation and maintenance of the 1.5 million gallon tank located on CLNAWS land would result in permanent removal of about 0.75 acres of vegetation. This is a small quantity compared with the amount of similar habitat found in the region. Impacts to native vegetation would be less than significant. Operation and maintenance would not result in the spread of invasive species. Only a few vehicles would access the area periodically for maintenance and inspections. The tank is located adjacent to Gill Station Coso Road, so vehicles would likely park alongside the road for access. Wildlife would not be impacted

by operation and maintenance. No new ground disturbance would occur and tank filling generates little noise (refer to Section 3.12 Noise), and would not disturb general wildlife populations in the area. (FEIR, p. 3.4-27.)

Pipeline. The pipeline would be buried for all but a few small sections of the route; about 500 feet in length would not be buried. The pipeline would be buried to about 3 feet in depth and the construction area above the pipeline reclaimed and reseeded. Native vegetation should reestablish over the pipeline within a few seasons. Maintenance could result in some limited ground disturbance if sections of pipeline need to be excavated for repair. Impacts to native vegetation would be limited and localized to a small stretch of pipeline. Removal of vegetation would be temporary and the area would be reseeded after repair to restore natural grade and vegetation. Impacts would be less than significant. Maintenance may also include periodically draining the pipeline back to the tanks and/or wells. Residual water in the pipeline after back draining would be released through the 18 air release valves using pumps. Volumes of water released from each site would be on the order of a few tens of gallons. Water would be directed to natural drainage ways. Water release would not scour out or otherwise harm native vegetation. (FEIR, p. 3.4-28.)

Pipeline operation and maintenance would not cause the spread of invasive species. Operation of the pipeline would include some inspections but these would occur from the roadway and on foot. (FEIR, p. 3.4-28.)

Operation of the pipeline would not harm general wildlife. The area of the pipeline would be reseeded and would revegetate within a few seasons, making it accessible to common wildlife once again. Wildlife migration would not be impacted. About 500 feet of pipeline would be installed above ground and the pipeline is 20 inches in diameter. Animals would be able to move freely over, under, and/or around the pipeline. (FEIR, p. 3.4-28.)

d. Decommissioning

Decommissioning would include removal of project components and abandonment of the pipeline in-place. Areas would be reseeded with a native seed mix after component removal on public lands. Decommissioning would increase the amount of native vegetation in the area and would have a positive impact on native vegetation and wildlife. (FEIR, p. 3.4-28.)

2. Potential Impact 3.4-2: The potential to adversely and substantially impact a special status species

a. Overview of Impacts

Project construction, operation, and decommissioning have some potential to impact special status species. However, with implementation of mitigation measures, these impacts will be less than significant. Federally and state listed threatened or endangered species in the project area include the desert tortoise and the Mohave

ground squirrel. These species, as well as other special status species, could be harmed during project construction by vehicle travel and ground disturbance. Mitigation has been included to minimize impacts to special status species during construction. Measures include avoidance where possible and relocation, as well as employee training prior to construction and monitoring during construction. (FEIR, p. 3.4-28.)

Project operation would result in the temporary loss of 53.5 acres of potential habitat and the permanent loss of about 7 acres of potential habitat for desert tortoise and Mohave ground squirrel (the entire project area is assumed to be Mohave ground squirrel habitat). 6.25 acres of permanent loss would be on private land, 0.03 acres on BLM managed lands, and 0.75 acres would be on CLNAWS land. Compensation for Mohave ground squirrel is included in the existing mitigation plan for the geothermal development for the 0.75 acres of loss on BLM and the 0.03 acres on BLM managed lands. The plan was evaluated under CEQA in 1988 and is applicable for all geothermal projects associated with geothermal development at Coso and within the Coso KGRA. The goal of the mitigation program was to eliminate grazing pressure by cattle on the food source for the Mohave ground squirrel. Cattle can adversely affect the ground squirrels directly by competing for the limited forage or indirectly by trampling ground squirrel burrows and reducing shrub cover necessary for ground squirrel thermoregulation and protection from predators. The plan effectively preserved several acres of Mohave ground squirrel habitat, allowing for 2,193 acres of habitat disturbance associated with geothermal projects. Implementation of this plan minimizes effects to Mohave ground squirrel from the proposed project to less than significant levels. Six acres of land would be debited from the total mitigation credit acreage. Temporarily disturbed habitat would be restored to natural conditions after construction to minimize impacts to Mohave ground squirrel habitat. The mitigation plan does not provide compensation for permanent disturbance on private lands. The approximately 6.25 acres of permanent disturbance on private lands would require an Incidental Take Permit under section 2081 of the Fish and Game Code and compensation (at a 3:1 ratio) for loss of habitat prior to construction. (FEIR, p. 3.4-28.)

The project would also result in temporary and permanent loss of habitat for desert tortoise. Portions of the project fall under different plans for the compensation of lost desert tortoise habitat based on surface management. With compensation as described, impacts to habitat for desert tortoise and Mohave ground squirrel would be considered less than significant. (FEIR, p. 3.4-29.)

b. Construction

Construction of all project components could have the potential to impact the following federal and/or State listed threatened or endangered species:

- Desert tortoise
- Mohave ground squirrel

The project construction could also impact several special status plant, reptilian, mammalian, and avian species as listed on Table 3.4-1 and Table 3.4-2. (FEIR, p. 3.4-29.)

Mohave Ground Squirrel. Mohave ground squirrels are known to occur in areas adjacent to the project site, and the entire project area supports Mohave ground squirrel habitat (all project components). Any ground-disturbing activities could take an indeterminate number of Mohave ground squirrels. Animals could be trapped underground in burrows or in above ground middens, or crushed by project equipment. In addition, approximately 53.5 acres of habitat for these species would be temporarily disturbed during construction of project components. This habitat disturbance may be significant for species with limited ranges such as the Mohave ground squirrel. (FEIR, p. 3.4-29.)

Project impacts are expected to be potentially significant for Mohave ground squirrels, a species listed as threatened under the California Endangered Species Act. However, with implementation of mitigation measures, these impacts will be less than significant. Although it is unlikely that the loss of habitat for this project would jeopardize the continued existence of Mohave ground squirrels throughout its range, the project site is surrounded by mostly undisturbed native desert habitat, much of which is presumably occupied by Mohave ground squirrels. (FEIR, p. 3.4-29.)

Mitigation for Mohave ground squirrel impacts during construction would include a training program as described in mitigation measure Biology-5 and several of the measures listed in mitigation measure Biology-6. Additionally, compensation mitigation for temporary and permanent impact to Mohave ground squirrel habitat on public lands is covered under the existing Mohave Ground Squirrel Mitigation Plan for development of the Coso Known Geothermal Area (KGRA). This plan was developed in 1988. The plan effectively preserved several acres of Mohave ground squirrel habitat in anticipation of up to 2,193 acres of disturbance associated with geothermal development in the Coso KGRA. The BLM identified that up to 2,193 acres of land could be disturbed in order to develop the geothermal resources in the Coso KGRA, which could impact the Mohave ground squirrel. The mitigation program was designed by the BLM, CLNAWS, and the CDFG to compensate for the 2,193 acres of Mohave ground squirrel habitat that could be impacted on CLNAWS lands and 35 acres outside of the CLNAWS boundary. The compensation land is located on CLNAWS and includes exclusion of grazing species to enhance the Mohave ground squirrel population over the area. The program has included monitoring over the last 26 years and is still in effect for additional habitat losses associated with geothermal development in the area. To date 474.69 acres of surface disturbance of the permitted 2,193 acres on CLNAWS, and 0 acres of the 35 acres for public lands off of CLNAWS had been used (Brock, personal communication 2008). The 53.5 temporary acres of impact would be restored after construction. The Navy would account for project associated impacts according to the provisions of the plan. Thirty-three acres of the 35 acres of disturbance allowed on public lands outside of CLNAWS would be deducted and 15.8 acres of the remaining 1,718.31 acres of disturbance allowed on CLNAWS lands would be deducted. Impacts

from habitat loss would be less than significant. The mitigation plan was evaluated under both NEPA and CEQA in 1988 and remains in effect. Implementation of this plan minimizes effects to Mohave ground squirrels to less than significant levels. (FEIR, p. 3.4-29.)

Permanent impacts to 6.25 acres of private lands that include Mohave ground squirrel habitat would be mitigated through providing compensation according to mitigation measure Biology-7. the measure requires a 3:1 replacement ratio for lands permanently disturbed. This ratio incorporates both the impacts to Mohave ground squirrel and desert tortoise. With implementation of this measure, impacts to Mohave ground squirrel would be less than significant. Additionally, an Incidental Take Permit under Section 2081 of the CDFG Code would be required for Mohave ground squirrel.

Desert Tortoise

Wells, Lift Pump Station, Substation and Associated Facilities. These project components would be constructed on the Hay Ranch property. (FEIR, p. 3.4-30.)

Live desert tortoises have been found in the California desert from below sea level to elevations of 7,300 feet, but the most favorable habitat occurs from 2,000 feet amsl to about 3,300 feet amsl (Navy 2004). Desert tortoises could occur in very low numbers on the Hay Ranch property. The property is considered disturbed as it was formerly used for agricultural production. The property is not ideal habitat because of its elevation of about 3,400 feet, but could provide some habitat and may support some desert tortoise. Therefore, as previously stated, presence of the desert tortoise is assumed for this EIR. The project would result in about 5 acres of permanent habitat loss on the property for construction of these components. Individual tortoises may be injured or killed during construction activities. (FEIR, p. 3.4-31.)

The following mitigation measures would be implemented prior to and during construction of all project components. Implementation of these measures during construction would reduce construction related impacts to desert tortoise to less than significant levels. (FEIR, p. 3.4-31.)

Biology-2: Pre-Construction Tortoise Surveys. To prevent take of desert tortoises, an authorized biologist shall survey the project site prior to construction to identify individual tortoises that may be within or very near project boundaries. Because adult tortoises are most likely to be active above ground from February 15 to November 15 and least likely from November 16 to February 14, preconstruction surveys shall be conducted within 48 hours before construction from February 15 to November 15 and will be done within two weeks prior to construction between November 16 and February 14. (FEIR, p. 3.4-31.)

All potential tortoise burrows in the construction zone, including those not recently used, shall be excavated by an approved biologist at the time of the survey. (FEIR, p. 3.4-31.)

Biology-3: Tortoise Fencing and Project Limits. A tortoise-proof exclusion fence shall be constructed around the proposed project construction area, including lay down and stockpile sites in potential tortoise habitat. To further minimize take of desert tortoise habitat, project boundaries shall be staked and all activities would be restricted to the defined project site. (FEIR, p. 3.4-31.)

Biology-4: Tortoise Monitoring During Construction. A qualified tortoise biologist shall be on-site during all phases of construction to keep individual desert tortoises out of harm's way. Only tortoises within the construction right-of-way shall be handled, and only by the qualified biologist. (FEIR, p. 3.4-31.)

Biology-5: Tortoise and Ground Squirrel Training. All construction workers shall participate in a Mohave ground squirrel and desert tortoise education program prior to construction. The program shall include identification, basic biology, general behavior, local distribution, sensitivity to human activities, legal protection, penalties for violating State or federal laws, impact avoidance methods, and reporting requirements. Construction personnel shall be instructed not to handle desert tortoise. (FEIR, p. 3.4-31.)

Biology-6: Other Construction Measures for Protection of Desert Tortoise. The following additional measures shall be implemented during construction for the protection of desert tortoise:

- If a recently dead or injured desert tortoise is found, the approved biologist shall immediately notify the USFWS and CDFG.
- Construction personnel will look for desert tortoises under vehicles and equipment before they are moved. If a desert tortoise is present, the vehicle will not be moved until the tortoise has moved from under the vehicle and out of harm's way, or the approved biologist has relocated the tortoise.
- Trash and food items shall be contained in closed containers and regularly removed to reduce the attractiveness of the area to opportunistic predators such as common ravens, coyotes and feral dogs.
- Pets will be prohibited from the construction site.
- The top 8 inches of removed soil will be salvaged and stockpiled on site. Following construction the salvaged topsoil will be used as final cover over the pipeline.
- Following construction, the pipeline corridor will be restored based on the existing approved restoration plan.
- Driving off established roads will be prohibited unless required by construction activities.

- Vehicle speeds shall not exceed 25 miles per hour through desert tortoise habitat unless otherwise posted. (FEIR, p. 3.4-32.)

Construction would also result in temporary impacts to about 6 additional acres of habitat for desert tortoise. It is unlikely, though, that habitat loss as a result of project construction would jeopardize the continued existence of the desert tortoise throughout its range. In order to minimize impacts to desert tortoise from habitat loss on private land, the following mitigation measure would be implemented. (FEIR, p. 3.4-32.)

Biology-7: The applicant shall purchase replacement land occupied by desert tortoise and Mohave ground squirrel at a ratio of 3 acres for every 1 acre disturbed on the Hay Ranch property (for a total of 18 acres). The replacement land shall deeded to the CDFG or the Desert Tortoise Preserve. The location of compensation lands shall be approved by the CDFG. The project proponent shall also pay a one-time endowment fee for the long-term management of these lands. (FEIR, p. 3.4-32.)

Tanks. The tank on the Hay Ranch property is discussed above. Construction of the high point tank would result in loss of about 0.75 acres of habitat. This is marginal habitat for desert tortoise because of its elevation (4,100 feet), but desert tortoises are sometimes found in narrow alluvial valleys. Tortoise could be injured or killed during construction of the tank. Mitigation measures Biology-2 through Biology-6 would be implemented to minimize construction impacts to desert tortoise. Habitat removal and other direct impacts to desert tortoise located on CLNAWS are covered under the China Lake CLUMP and China Lake Desert Tortoise Management Plan (discussed further under Potential Impact 3.4-3). (FEIR, p. 3.4-32.)

Tortoise population densities were established for China Lake through extensive field surveys conducted by Kiva Biological Consulting (1991) throughout desert tortoise habitat located on-Station. Based on these surveys, a land use management and habitat conservation plan was designed to accommodate the Navy's ongoing operations throughout the CLNAWS and provide an effective conservation and protection strategy for desert tortoise habitat. (FEIR, p. 3.4-32.)

In 1992, the Station formally consulted with USFWS for the implementation of a programmatic Desert Tortoise Habitat Management Plan (HMP). China Lake's HMP accommodates the Station's operations and provides guidelines for the new project's review and approval within the designated Habitat Management Areas (HMA), standard mitigation measures, and the designation of approximately 200,000 acres of the South Range as a management area for the desert tortoise. A non-jeopardy opinion was issued for the NAWS HMP by the Service in 1992. (FEIR, p. 3.4-32.)

The Station has managed ongoing military operations and desert tortoise management in accordance with the BO. The HMP has been fully incorporated into the Station's Integrated Natural Resources Management Plan (INRMP). The INRMP

was reviewed and approved by both the Service and the California Department of Fish and Game in September 1999. NAWS China Lake has augmented the HMP through other actions beneficial to the desert tortoise including the removal of sheep grazing from the HMA and through fencing of Station land adjacent to other public lands. These plans and programs are applicable to the proposed project and would minimize impacts to desert tortoise as they could be impacted on Navy lands during construction. (FEIR, p. 3.4-32.)

Impacts to desert tortoise from construction of the 1.5 million gallon tank on CLNAWS would be less than significant with implementation of mitigation measures Biology-2 through Biology-6 and the China Lake Desert Tortoise Management Plan. (FEIR, p. 3.4-32.)

Pipeline. Desert tortoise could be found along the entire pipeline route since they can inhabit the alluvial plain in Rose Valley, the alluvial slopes above the valley, the major washes, the narrow alluvial valley near the CLNAWS boundary, and the washes and alluvial valley within CLNAWS up to the injection well system. They do not occur on the steep, rocky slopes rising above Gill Station Coso Road. Construction of the pipeline is expected to impact desert tortoises and their habitat. (FEIR, p. 3.4-32.)

Several signs of desert tortoise were found during the survey for the Gill Station Coso Road Improvements project (EREMICO 2007), with one burrow found within 200 feet of the unpaved road along which the pipeline route is proposed (near the intersection with Gill Station Coso Road). (FEIR, p. 3.4-33.)

Individual tortoises may be injured or killed during construction activities. Construction of the pipeline would result in temporary habitat loss of about 53.5 acres on private, BLM, and CLNAWS lands. (FEIR, p. 3.4-33.)

Mitigation measures Biology-2 through Biology-6 would be implemented to minimize construction impacts to desert tortoise. Habitat losses would be compensated for through the provisions of the West Mojave Plan, the CLNAWS Desert Tortoise Management Plan, and the CLNAWS CLUMP (as discussed under Potential Impact 3.4-3). Impacts would be less than significant with implementation of mitigation and compensation. (FEIR, p. 3.4-33.)

Sensitive Plant Species

Wells, Lift Pump Station, and Substation and Associated Facilities. These components would be constructed on the Hay Ranch property, which was formerly used for agricultural production. No state or federally listed threatened or endangered plant species have the potential to occur on the Hay Ranch property. No federal or state listed sensitive plants could occur within the project area. Several CNPS listed sensitive plants have the potential for occurrence in the project area. (FEIR, p. 3.4-33.)

Surveys conducted for the Gill Station Coso Road Improvement project in May and June 2007 did not result in identification of any of these plant species;

however, the lack of identification could be due to drought conditions for the year. The project area was resurveyed for plants in April 2008 and only three crowned muillas (Muilla coronata) were found in a 1 square meter area south of the alignment. Mitigation measure Biology-8 would be implemented to minimize any potentially significant impacts to this species during construction. (FEIR, p. 3.4-33.)

Biology-8: The population of crowned muillas shall be avoided during construction. If the crowned muillas cannot be avoided during construction, a plan shall be prepared for restoration (as well as an attempt at relocation of the individual plant) and seeds of the plant shall be collected. The plan shall include at a minimum (a) the location of where the plant shall be seeded or replanted, with preference for on-site replacement such as over the pipeline route; (b) the plant species and seeding rate; (c) a schematic depicting the replanting or seeding area; (d) the planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on-site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria. (FEIR, p. 3.4-33.)

Tanks and Pipeline. The 250,000 gallon tank would be associated with the lift pump station, as previously discussed. The 1.5 million gallon tank would be located at a high point along Gill Station Coso Road within CLNAWS. There is some potential for presence of rare plants in this area. Mitigation measure Biology-8 would be implemented prior to and during construction to reduce impacts to less than significant levels. (FEIR, p. 3.4-33.)

Pipeline. All sensitive plant species listed in Table 3.4-1 have potential for occurring along the pipeline route. Mitigation measure Biology-8 would reduce potential impacts to any rare plant species from project construction to less than significant levels. (FEIR, p. 3.4-33.)

Sensitive Invertebrate Species

Wells. Lift Pump Station, and Substation and Associated Facilities. San Emigdio blue butterfly is not likely to occur on the Hay Ranch parcel because four winged salt-bush would not occur there. Construction of these components would not impact San Emigdio blue butterfly. (FEIR, p. 3.4-34.)

Tanks and Pipeline. The San Emigdio blue butterfly could occur in the eastern portion of the project area. Most winged invertebrates occupying the site, including adult San Emigdio blue butterflies, would probably flee the area during construction activities. However, an indeterminable number of eggs and flightless invertebrates could be lost during ground-disturbing activities at the project site. An unknown amount of foraging, breeding, and wintering habitat could also be lost. These impacts could be significant. The host plant for the San Emigdio blue butterfly, four-winged saltbush, occurs in very low numbers in the project area. The project may affect some host plants, but implementation of mitigation measure Biology-8 includes

avoidance of four-winged saltbush or reseeding if it cannot be avoided. Implementation of this measure would reduce impacts to San Emigdio blue butterfly from construction to less than significant levels. (FEIR, p. 3.4-34.)

Sensitive Reptilian Species

Wells, Lift Pump Station, and Substation and Associated Facilities. No sensitive reptilian species would be found on the Hay Ranch property because it lacks habitat for these species. Construction of these project components would not impact sensitive reptilian species.

Tanks and Pipeline. Sensitive reptilian species that can occur along the pipeline route and in the area of the 1.5 million gallon tank include chuckwalla and rosy boa. These species are not protected under the California or Federal Endangered Species Acts. Chuckwallas and rosy boas are generally found in rocky sloped areas, as found in the eastern portion of the pipeline route. Animals could be injured or die by being trapped underground in burrows or crushed by project equipment. There would be some permanent habitat loss (for the portion of above ground pipeline just north of the CLNAWS boundary and for the 1.5 million gallon water storage tank), and temporary habitat loss. (FEIR, p. 3.4-34.)

Sensitive reptilian species would benefit from mitigation measures proposed for desert tortoises. Implementation of measures Biology-2 through Biology-6 would reduce impacts to rosy boas and chuckwallas to less than significant levels during construction of the project pipeline and high point tank. (FEIR, p. 3.4-34.)

Sensitive Mammalian Species

Wells, Lift Pump Station, and Substation and Associated Facilities. Sensitive mammalian species that could be found on the Hay Ranch parcel include the American badger. American badgers are common in the project area but are listed as a state species of concern. American badgers could be impacted by project construction equipment. Equipment could injure or kill individuals in their burrows. Since all other mammalian species are fairly common and wide-ranging, not state or federally listed, and since similar, suitable habitat occurs over large areas on adjacent parcels, project construction impacts to this species would be less than significant. American badgers would benefit from mitigation measures proposed to protect desert tortoise (Biology-2 through Biology-6). (FEIR, p. 3.4-34.)

Tanks and Pipeline. Townsend's bat and pallid bat may be found along the proposed pipeline route and near the site of the high point tank. Bats may be found in rocky outcrops, particularly along the eastern portion of the project pipeline. Project construction would largely occur to the south of Gill Station Coso Road in the eastern extent of the road, away from rocky outcrops.

Construction noise could disturb bats; however, though suitable rock crevices appear to be limited along Gill Station Coso Road, neither bat species is restricted to crevice roosting. Therefore, impacts to potential roosting sites or to bats during construction are not expected to be significant. (FEIR, p. 3.4-35.)

American badgers may also be found along the pipeline route; however, impacts to badgers are expected to be less than significant since the species is common and occurs over a large area on adjacent land. American badgers are common in the project area but are listed as a state species of concern. American badgers could be impacted by project construction equipment. Equipment could injure or kill individuals in their burrows. Project construction impacts to this species would be less than significant because this species is fairly common and wide-ranging, not state or federally listed, and similar, suitable habitat occurs over large areas on adjacent parcels. American badgers would benefit from mitigation measures proposed to protect desert tortoise (Biology-2 through Biology-6). (FEIR, p. 3.4-35.)

Sensitive Avian Species

Construction of all project components would have a temporary impact on birds of prey through removal of foraging habitat from potential breeding and wintering territories of individuals. Breeding species include three special status species: northern harrier, golden eagle, and prairie falcon; wintering species include one special status species: ferruginous hawk. Temporary habitat loss of 60.5 acres for all species is not expected to be significant, since large areas of similar, suitable foraging habitat occur in adjacent areas. (FEIR, p. 3.4-35.)

Project construction would not remove nesting areas or sites and would not impact trees or cliffs where birds of prey could be nesting. Construction noise would be limited to the active construction sites. Since raptor nesting is not expected to occur near the project right-of-way, and noise associated with trucks and operations at CLNAWS currently exists, raptors would not be significantly impacted. (FEIR, p. 3.4-35.)

Most other birds occupying the site would probably flee the area during construction. If ground-disturbing activities occur during the breeding season, bird nests and their contents may be destroyed. Nesting species include three special status species: Costa's hummingbird, Loggerhead shrike, and Le Conte's thrasher. Impacts would not be significant because most of the birds that occur on the project site are fairly common and similar, suitable habitat occurs over large areas on adjacent parcels to project construction. (FEIR, p. 3.4-35.)

Ground nesting birds, including the burrowing owl and horned lark, could occur across the project area. Any burrowing owls occupying burrows within the project site may become trapped in underground burrows and be injured or die during construction activities. If ground-disturbing activities occur during the breeding season, then owl nests and their contents may be destroyed. Ground nesting birds are protected by the Migratory Bird Treaty Act of 1918 and by the CDFG Code. Impacts to these species would be significant. (FEIR, p. 3.4-35.) However, the following mitigation measure would be implemented to minimize construction impacts to ground nesting birds to less than significant levels:

Biology-9: Thirty days prior to ground-disturbing activities, the site and adjacent areas within a 500 foot buffer zone would be surveyed for burrowing owls and other ground-nesting avian species such as horned lark. Occupied burrows and nests would be avoided during construction. No disturbance would occur within 150 feet of occupied burrows or nests during the nonbreeding season or within 250 feet during the breeding season. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with the occupied burrow sites for each pair of breeding Burrowing Owls (with or without dependent young) or single unpaired resident owl. If, during the nonbreeding season, occupied burrows are unavoidable, burrowing owls in burrows on site and within a 150 foot buffer zone would be passively relocated by a qualified biologist to natural or artificial burrows that are beyond 150 feet from the impact zone and that are contiguous to a minimum of 6.5 acres of foraging habitat for each relocated pair or single bird, following standardized CDFG protocols (CDFG 1995). If they are found during the breeding season, construction would cease until it has been determined by a qualified biologist that the young have fledged and are feeding independent of their parents, at which time the owls would be relocated. (FEIR, p. 3.4-36.)

The majority of disturbance (53 out of 60.5 acres) would be for buried pipeline construction. The pipeline would be buried except for about 500 feet. The area above the pipeline would be restored and reseeded after construction, which would return habitat for ground nesting species. Impacts would be less than significant. (FEIR, p. 3.4-36.)

c. Operation and Maintenance

Operations and maintenance would have some potential to impact listed species. Impacts would primarily be related to permanent loss of about 6 acres of habitat. (FEIR, p. 3.4-36.)

Desert Tortoise and Mohave Ground Squirrel. Impacts to desert tortoise and Mohave ground squirrel from operation and maintenance is largely limited to the permanent loss of about 6 acres of habitat. This loss would be covered under the mitigation plan that was developed for the development of the Coso KGRA in 1988, which covered approximately 2,100 acres, including the disturbance area of this project (BLM 1988). The mitigation plan is still in effect and all provisions of that plan are included here by reference. The permanent removal of 6 acres of Mohave ground squirrel habitat for this project would be fully compensated by the acreage set aside from the 1988 mitigation plan. The project acreage would be deducted from the total account. Impacts would then be considered less than significant. Impacts to permanent loss of desert tortoise habitat would comply with the West Mojave Plan and the CLNAWS CLUMP and CLNAWS Desert Tortoise Management Plan (as discussed under Potential Impact 3.4-3), which would reduce impacts to less than significant levels. (FEIR, p. 3.4-36.)

Maintenance of project components, particularly the pipeline segment, could include additional ground disturbance (such as if a section of pipeline needed to be excavated for repair or replacement). Mitigation measures Biology-2 through Biology-6 would be implemented for any maintenance that required ground disturbance to minimize impacts to desert tortoise and Mohave ground squirrel to less than significant levels. (FEIR, p. 3.4-36.)

Sensitive Plant Species. Sensitive plants would not be impacted by project operations. Operations would include some inspections and periodic visits to the components on the Hay Ranch site. No additional ground disturbance would occur during operations that could impact sensitive plants. Maintenance could include periodic pipeline draining for repair. The pipeline would be back-drained into the tanks and/or wells/injection system and then residual water would be pumped out of the pipeline through the 18 air-release valve locations. Only small volumes of water would be pumped out of vaults. Water would be released in the direction of natural drainage and would not cause scour or damage to vegetation or sensitive plants. (FEIR, p. 3.4-36.)

Over the life of the project, sections of the pipeline may need to be excavated for repair. Excavation would likely be limited and localized to the damaged section or the section requiring repairs. Rare plants could occur in the areas where excavation could be needed, although it is unlikely. Excavation could damage or destroy the individual plants. Mitigation measure Biology-7 would be implemented prior to any excavation to minimize any impacts to special status plant species that could occur in the area of repair. Methods similar to those used for construction would be implemented (i.e. top soil would be stockpiled and reapplied after excavation, and the area would be reseeded with a native seed mix). Impacts to rare plants would be less than significant. (FEIR, p. 3.4-36.)

Sensitive Invertebrate Species. San Emigdio blue butterfly may rarely be found in some areas along the pipeline route. Operations and maintenance would not impact this species. Maintenance could include some inspections of the project pipeline, periodic draining, and in rare instances, re-excavation for repair. Inspections and draining would not impact the species as individuals would scatter in the presence of workers. Mitigation measure Biology-7 would be implemented in the circumstance of re-excavation to minimize potential impacts to less than significant levels. (FEIR, p. 3.4-37.)

Sensitive Reptilian Species. Sensitive reptilian species, including rosy boa and chuckwalla, are not expected to be significantly impacted by project operations and maintenance. Sensitive reptilian species may only be found along the pipeline route and potentially near the high point tank. The pipeline route would be reestablished with vegetation a few seasons after construction, thereby restoring habitat for the species. Maintenance could impact a few individuals if it required excavation of the pipeline in the areas where these species could be found; however, this is unlikely. Implementation of mitigation measures Biology-2 through -6 for desert tortoise would minimize effects to reptilian species to less than significant levels. (FEIR, p. 3.4-37.)

Sensitive Mammalian Species. Operations would not impact sensitive mammalian species. Bats would not be impacted since the pipeline would be mostly underground in areas where bats could occur. Pipeline maintenance could include excavation of sections of pipeline; however, impacts to bats would not be expected because both bat species are restricted to crevice roosting and suitable rock crevices appear to be limited along Gill Station Coso Road.
Badgers are common in the project area and would not be impacted by project operation and maintenance. Excavation for pipeline repair has some potential to impact badgers; however, mitigation for desert tortoise (Biology-2 through Biology-6) would benefit the badger and further reduce effects to less than significant levels. (FEIR, p. 3.4-37.)

Sensitive Avian Species. Sensitive avian species would not be impacted by project operation. The high point tank could serve as a roosting perch for raptors; however, this would not harm raptors. Noise during maintenance may cause birds to disperse from the area, but there is adequate comparable habitat in the region for foraging. Burrowing owls and other ground nesting species could be impacted during maintenance if sections of the pipeline needed to be excavated. Excavation would be limited to the area needing repair and it is unlikely that nesting birds would occur in that area. Mitigation measure Biology-8 would be implemented to minimize impacts to ground nesting avian species to less than significant levels. (FEIR, p. 3.4-37.)

d. Decommissioning

Decommissioning would include removal of project components and abandonment of the pipeline in-place. Areas would be reseeded with a native seed mix after component removal on public lands. Decommissioning would increase the amount of vegetation in the area and would have a positive impact on special status species. (FEIR, p. 3.4-37.)

3. Potential Impact 3.4-3: The potential to conflict with any policies or ordinances protecting biological resources, including HCPs, National Conservation Plans, or general plan policies and ordinances

a. Inyo County General Plan

Inyo County General Plan includes several policies aimed at protecting biological resources. These policies include reviewing development proposals for impacts to special-status species and including mitigation where species or sensitive habitats could be impacted; preserving riparian and wetland areas; preserving existing wildlife corridors where appropriate; and avoiding activities that would promote the spread of noxious weeds. (FEIR, p. 3.4-37.)

Project construction on the Hay Ranch property would occur in the area under jurisdiction of Inyo County. The General Plan requires mitigation for projects that could impact sensitive species and measures to minimize the spread of invasive

species. Several mitigation measures have been proposed to minimize impacts to special-status species, including desert tortoise and Mohave ground squirrel. Project construction on the Hay Ranch parcel is localized to an area encompassing about 9 acres. Hay Ranch was previously cultivated for alfalfa and has naturally revegetated over the last 15+ years. Some invasive species already occur on the project site and could be spread by project activities. Mitigation measure Biology-1 would minimize impacts associated with the spread of invasive species to less than significant levels. Project construction would comply with the Inyo County General Plan. (FEIR, p. 3.4-38.)

b. CLNAWS Desert Tortoise Management Plan

The Recovery Plan for the Desert Tortoise (Mojave Population) is a recovery plan issued by USFWS in 1994. The Mojave population of the desert tortoise (an administrative designation for animals living north and west of the Colorado River) was listed as threatened on April 2, 1990. The purpose of the recovery plan is to delist the species. The plan includes identification of Desert Wildlife Management Areas and implementation of reserve level protection within each management area.
In 1992, CLNAWS worked with the USFWS to create a programmatic Biological Opinion (BO) that would allow CLNAWS limited authority to construct facilities and conduct military operations in tortoise habitat (US Navy 2004). Under this Opinion, which was signed December 3, 1992 and reissued in 1995, a Desert Tortoise Management Area encompassing approximately 200,000 acres was created. The BO authorized the implementation of the CLNAWS Desert Tortoise Management Plan, which allowed for the "take" of 2 tortoises annually by direct mortality, 10 tortoises per year in the form of harassment, and up to 40 tortoises by direct mortality over the term of the BO. As of 2004, only four animals had been affected by CLNAWS operations--three tortoises were moved and relocated and one tortoise was injured by a vehicle (US Navy 2004). CLNAWS continues to implement the Desert Tortoise Management Plan within the terms and conditions of the BO. Under the terms of the BO, once the take by mortality limit of 40 animals is reached, the CLNAWS will re-initiate a Section 7 consultation to address the ongoing management of CLNAWS operations Station-wide. (FEIR, p. 3.4-38.)

The Desert Tortoise Management Plan includes requirements for work in desert tortoise habitat on the base. Surveys must be conducted for all projects within potential desert tortoise habitat, and personnel working in or near tortoise habitats must be briefed regarding operational procedures to avoid harming desert tortoise and to minimize loss of their habitat. Project-specific "reasonable and prudent measures" are routinely implemented such that potential for take of desert tortoise is minimized, typically without mission conflicts. These impact minimization measures include education programs, implementing existing operating procedures for activities in the Desert Tortoise Management Area, clearly marking project area boundaries, relocating at-risk animals found within project boundaries, minimizing predation risks, and managing the Desert Tortoise Management Area in accordance with the terms of the BO (U.S. Navy 2004). (FEIR, p. 3.4-38.)

A portion of the proposed project falls within CLNAWS and is therefore subject to the CLNAWS Desert Tortoise Management Plan (which follows under the Desert Tortoise Recovery Plan). Several mitigation measures (Biology-2 through Biology-6) have been proposed for the protection of desert tortoise. Mitigation includes worker training, surveys of the species, monitors on the project site during construction, and clear demarcation of the project work boundaries. These measures could still result in some take of desert tortoise; however, take on federal land is covered under the Desert Tortoise Management Plan on CLNAWS lands. Impacts from all activities on CLNAWS are compensated for through the Desert Tortoise Wildlife Management Area on the southern portion of CLNAWS. Project activities would be consistent with the CLNAWS Desert Tortoise Management Plan for proposed activities on CLNAWS lands. (FEIR, p. 3.4-38.)

c. West Mojave Plan

Other plans and policies relevant to the proposed project include the West Mojave Plan, which was finalized in January 2005 and the Biological Opinion finalized in December 2007. The West Mojave Plan is a habitat conservation plan and federal land use plan amendment that presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel and approximately 100 other sensitive plants and animals and the natural communities. The plan also provides a streamlined program for complying with the requirements of the California and Federal Endangered Species Acts. The plan is applicable to the private and BLM-managed areas of the proposed project. (FEIR, p. 3.4-39.)

The plan includes support for the implementation of the Desert Tortoise Recovery Plan (USFWS 1992) (including establishing more management areas) and a Mohave ground squirrel conservation area that would include part of the Superior-Cronese Tortoise Desert Wildlife Management Area. The plan calls for 1,726,712 acres to be included in the conservation area. The plan also includes provisions for determining compensation mitigation including a mitigation fee for habitat disturbed within the West Mojave planning area. The BLM portion of the project falls within the West Mojave planning area. The compensation ratio along the project area that falls within BLM-managed land is 5:1 (pay a fee of five times the average value of an acre of land within the habitat conservation area). The mitigation fee would be applicable to development and/or loss of habitat and would be considered to be the complete compensation for loss of habitat. On BLM lands, the mitigation fee applies to all new land disturbing projects subject to federal permits, and is collected by the BLM at the time of permit issuance. The mitigation fee is not additive where multiple species exist on site or where conservation areas for species overlap. (FEIR, p. 3.4-39.)

The BLM is currently preparing a Biological Assessment pursuant to NEPA for construction of the project pipeline on BLM lands. Part of the process includes consultation with the USFWS under Section 7 of the Endangered Species Act and in accordance with the West Mojave Plan for impacts to several species. The applicant would be subject to the terms of permits granted by the BLM and the County of Inyo, which would include compliance with the West Mojave Plan. Project construction,

operation, and decommissioning would not be in conflict or prevent the implementation of the West Mojave Plan. (FEIR, p. 3.4-39.)

d. Coso Grazing Exclosure Mohave Ground Squirrel Monitoring and Mitigation Program

A comprehensive plan to mitigate effects to Mohave ground squirrel (Spermophilus mohavensis) from geothermal development activities in the Coso KGRA was established in 1988 (Leitner and Leitner 1988). The goal of the mitigation program was elimination of grazing pressure by cattle on the food source for the Mohave ground squirrel. Cattle can adversely affect the ground squirrels directly by competing for the limited forage or indirectly by trampling ground squirrel burrows and reducing shrub cover necessary for ground squirrel thermoregulation and protection from predators. The goals of the Mohave ground squirrel mitigation plan were to:

1) Improve the quality of remaining habitat for the Mohave ground squirrel within the geothermal development area
2) Evaluate the effectiveness of the habitat improvement program; and
3) Develop information about habitat requirements that may be used to more clearly define the relationship between the Mohave ground squirrel and livestock.

This plan was approved by the Navy, BLM, CDFG, and the California Energy Commission. The program was successfully implemented and the latest monitoring report was produced in 2007 (Leitner and Leitner 2007). (FEIR, p. 3.4-39.)

4. <u>Potential Impact 3.4-4: The potential to have a substantial indirect adverse effect on general vegetation and sensitive habitats, including wetlands and riparian areas in the Rose Valley</u>

a. Overview of Impacts

Construction of the proposed project would not adversely impact sensitive habitats. Construction impacts are limited to ground disturbance in the area of the proposed project and would not have indirect impacts to off-site habitat or vegetation. (FEIR, p. 3.4-40.)

Operation has the potential to impact vegetation and sensitive communities in Rose Valley that are dependent on the groundwater table. Wetlands and riparian vegetation at Little Lake Ranch could be impacted by drawdown of groundwater that supplies the surface water flows at the lake. Impacts would not occur right away, but would occur over time; adverse effects would be significant. Mitigation is closely tied to hydrologic monitoring and mitigation. A monitoring program would be implemented that includes trigger points for implementing mitigation to prevent significant effects to water

levels and impacts to habitats at Little Lake. With implementation of mitigation, impacts to the habitat at Little Lake would be less than significant. (FEIR, p. 3.4-40.)

b. Construction Impacts

Project construction would not have an indirect adverse impact on any sensitive habitats, including wetlands and riparian areas. There are no wetlands or riparian areas within the proposed project construction area. Construction would be local and would not impact Portuguese Bench (located 2 miles southwest of the project area) or Little Lake Ranch (located about 9 miles south of the project area). Construction would last about 110 days and would not have any direct or indirect impacts on sensitive habitats. (FEIR, p. 3.4-40.)

c. Operation and Maintenance

Operation of the proposed project involves groundwater pumping that has the potential to lower the groundwater table throughout the valley, with the greatest decreases in water table level closest to the Hay Ranch property. Vegetation in the valley generally consists of scrub dominated communities. This type of vegetation is drought-resistant and thrives in well-drained soils. Drought evasive species/groundwater-dependent species are limited to areas of springs and seeps and the Little Lake area within the Rose Valley. (FEIR, p. 3.4-40.)

Groundwater pumping has been prevalent for many years in the Owens Valley, north of the proposed project. Effects to general vegetation from groundwater pumping by LADWP have been studied for years. Groundwater pumping impacts to vegetation in Inyo County have historically included a reduction in vegetation cover and a change in vegetation species and composition. Effects to vegetation from groundwater pumping have been proven to be most adverse closer to an actively pumped wellfield. (FEIR, p. 3.4-40.)

Studies in the Owens Valley (Groeneveld 1991; Danskin 1998; LADWP 2007) show that groundwater pumping in the Valley has significantly changed the vegetation cover and composition in the Valley. Vegetation cover has thinned to account for losses in soil moisture and native grasses relying on shallow groundwater (3 to 5 feet) have died and given way to drought-tolerant shrubs that can survive with groundwater levels at greater than 12 feet below the surface (Groeneveld 1991). (FEIR, p. 3.4-40.)

Although Owens Valley and Rose Valley contain separate groundwater basins, their adjacent locations, identical climates, and similar vegetation types allow for comparison. The Water Agreement between Inyo County and the LADWP (Inyo County and LADWP 1991) defines five classification areas for the purposes of management of water, vegetation, etc.:

a) TYPE A CLASSIFICATION. This classification is comprised of vegetation communities with evapotranspiration approximately equal to average annual precipitation.
b) TYPE B CLASSIFICATION. This classification is comprised of scrub dominated communities, including rabbitbrush and Nevada saltbush communities, with evapotranspiration greater than precipitation.
c) TYPE C CLASSIFICATION. This classification is comprised of grasslands/meadow vegetation communities with evapotranspiration greater than precipitation. The communities comprising this classification exist because of high groundwater conditions, natural surface water drainage, and/or surface water management practices in the area, (e.g. conveyance facilities, wet year water spreading).
d) TYPE D CLASSIFICATION. This classification is comprised of riparian/marshland vegetation communities with evapotranspiration greater than precipitation. The communities comprising this classification exist because of high groundwater conditions, natural surface water drainage, and/or surface water management practices in the area, (e.g. conveyance facilities, wet year water spreading).
e) TYPE E CLASSIFICATION. This classification is comprised of areas where water is provided to City-owned lands for alfalfa production, pasture, recreation uses, wildlife habitats, livestock, and enhancement/mitigation projects. (FEIR, p. 3.4-41.)

Type A vegetation is not affected by groundwater pumping, as it is reliant on precipitation. Types B, C, and D are all affected by groundwater pumping. The Agreement states that "It is recognized that a change in vegetation from one of these communities [Type B, C, or D] to another, as long as the change is not to a community that would fall outside the same classification [Type B, C, or D] will not be considered significant." Typical upland vegetation in the Rose Valley could generally be considered Type A and some Type B. Type C and D are found near Little Lake. (FEIR, p. 3.4-41.)

Type A species are drought tolerant, while the remaining types are drought evasive. (FEIR, p. 3.4-41.)

Drought Tolerant Species. Much of the vegetation in the Rose Valley is comprised of drought tolerant species. Common species include shadscale; (Atriplex con fertifolia), Nevada ephedra; (Ephedra nevadensis), and California buckwheat; (Eriogonum fasciculatum). At the northern end of the valley there are large stands of blackbrush; (Coleogyne ramosissima) as well as such Great Basin species sagebrush; (Artemisia tridentata), and bitterbrush; (Purshia tridentata), creosote bush; (Larrea tridentata), and burro bush; (Ambrosia dumosa). In arid environments water is often a limiting factor for plant growth. Drought tolerant plants have developed strategies to maximize their efficiency in use of water. This allows them to thrive in areas where

moisture is not adequate for most species to survive at all. Alluvial fans and slopes of desert mountains are characteristic landforms for drought tolerant species. Some local examples are shadscale and creosote bush. (FEIR, p. 3.4-41.)

The groundwater table could be lowered as much as 30 to 35 feet in the areas closest to the Hay Ranch parcel without mitigation measure Hydrology-1 through Hydrology-4, and less with implementation of this mitigation (reduced pumping rates and duration). However, the groundwater levels in Rose Valley already range from 140 to 240 feet below ground surface (bgs) in the north and central parts of the Valley to approximately 40 feet bgs near the south end of the Valley. The low groundwater table in the area supports only drought tolerant species and further drawdown of the water table should not impact existing vegetation throughout most of the valley. (FEIR, p. 3.4-41.)

Drought Evasive Species. Areas where vegetation is dependent on groundwater (where drought evasive species are found) are limited to Portuguese Bench, Rose Spring, and the Little Lake area. Drought evasive plants have developed strategies to maximize growth in areas where a reliable supply of water is available. They out-compete drought tolerant species where water is abundant but don't occur at all where it is not and so evade drought entirely. They typically occur along rivers and streams and in areas where groundwater is close to the surface. In the Rose Valley, drought evasive plants are generally found in the vicinity of springs and seeps, such as on Portuguese Bench and at Little Lake. Groundwater-dependent vegetation describes vegetation composed of drought evasive species. Management of groundwater-dependent vegetation is very important as these species are most vulnerable to water table drawdowns caused by groundwater pumping. (FEIR, p. 3.4-42.)

Groundwater withdrawal and transfer from the Rose Valley basin to the Coso basin would result in groundwater drawdown in the Rose Valley that would increase with time. Lowered groundwater levels could have indirect adverse effects on any riparian vegetation, wetland communities, or open water habitat that is dependent on surface flows sourced by groundwater, as well as the wildlife supported by these habitats. (FEIR, p. 3.4-42.)

Portuguese Bench - Some concern has also been raised that artesian springs supporting cottonwoods, willows, and other water dependent vegetation could be impacted at Portuguese Bench. Vegetation at Portuguese Bench was assessed at the same time that hydrologic studies were performed. The hydrologic studies showed that the artesian springs at Portuguese Bench are not hydrologically dependent on water in the Rose Valley. The springs associated with Portuguese Bench are located at much higher elevations than the groundwater table in the Rose Valley aquifer. Pumping tests did not show impacts to the siphon wells at Portuguese Bench (see Appendix C1). The artesian flows are believed to be sourced from water coming off of the Sierra Nevada and perching along the normal fault that forms Portuguese Bench. The artesian flows are independent of groundwater available in the valley. The project would have no impacts on riparian or wetland vegetation along Portuguese Bench. (FEIR, p. 3.4-42.)

Rose Spring - Rose Spring, located approximately 2 miles north of the Hay Ranch property at an elevation (3,580 ft above mean sea level), approximately 300 ft above the groundwater table in the aquifer, is unlikely to be impacted by the proposed project. Rose spring consists of an area of about 5,400 square feet of willows and no surface water. It is unlikely to be impacted by the proposed project; the source of water for the spring is derived from Sierra Nevada mountain front precipitation and groundwater underflow from Owens Valley, neither of which would be impacted by pumping at Hay Ranch. Rose spring includes limited vegetation and habitat. No impacts from the proposed project on water dependent vegetation at Rose Spring are expected. (FEIR, p. 3.4-42.)

Little Lake - Groundwater withdrawal at Hay Ranch has the potential to reduce the groundwater flow to the Little Lake area and to affect the sensitive riparian and wetland vegetation around Little Lake, located approximately 9 miles south of the project area. Little Lake Ranch is a 1,200 acre recreational preserve that is privately owned and managed by Little Lake Ranch, Inc. The property includes the 90-acre Little Lake and five other ponds that provide wetland habitat. Little Lake is a manipulated perennial lake and has been part of a Habitat Restoration and Improvement project that began in 2000. The water in the lake is sourced through natural springs as well as through siphon wells on the property. The primary source of water for the lake is groundwater. The water levels in the lake and surrounding areas are manipulated by ranch staff through a weir on the main lake. The weir provides discharge flows that support the surrounding ponds, riparian habitat, and wetland habitat. The ranch supports duck populations as well as habitat for several special status plant and animal species, as listed on Table 3.4-3. Vegetative communities in the Little Lake area are shown in Figure 3.4-3. (FEIR, p. 3.4-42.)

Wetland vegetation and habitat restoration efforts could be impacted if the project caused a significant reduction in water that flows into Little Lake, the ponds, and the springs. Refer to Section 3.2 Hydrology and Water Quality for a complete discussion of surface and groundwater hydrology at Little Lake. Groundwater inflowing into Little Lake would be significantly reduced if the project were implemented as proposed (pumping 4,839 ac-ft/yr for 30 years). Declining groundwater levels and groundwater inflow could affect the habitat, plant and wildlife species, and restoration efforts. (FEIR, p. 3.4-42.)

Mitigation measures Hydrology-3 and Hydrology-4 require groundwater monitoring throughout the Rose Valley, and reduction or cessation of pumping if trigger levels are reached, to prevent Little Lake from ever experiencing a greater than 10% reduction in flows into the lakes, ponds, and wetlands. For further discussion of these hydrologic significance criteria, refer to section 3.2 Hydrology and Water Quality. Little Lake normally experiences seasonal fluctuation in its surface area and volume and can also be manipulated to significantly change its surface area and volume. Wetland and riparian species surrounding the lake are closely associated with the lake margin and fluctuate with the lake (refer to Figure 3.4-3). Their root zones are likely inundated by lateral migration of water from the surface waters. Plants located adjacent to

the lake, but away from the wetted margin, are largely upland facultative plants (saltbrush) and rabbit brush, which are non-wetland plants. Saltbrush, the most xeric of meadow species, is adapted to dry habitat and would not be impacted by a 10% decrease in water inflow into the lake or a slight reduction in groundwater level in the area (not more than 0.3 feet). Even with a small reduction in lake area/volume (less than 10%), the area supporting riparian habitat would likely maintain the same width but would move with the open water margin. Habitat creation and restoration has been manipulated by adjusting the weir on Little Lake. Damming of water in the lake increases the surrounding recharge to the groundwater table through vertical and lateral migration of water. This expansion and contraction of the lake margin habitat currently occurs with manipulation of the weir and seasonal drying back of the lake. (FEIR, p. 3.4-43.)

The lower ponds and the area south of Little Lake are fed by seasonal discharge over the weir of the lake and are fed by springs and the siphon well. At least 75% of the lower habitat is maintained by the siphon well and springs. Maintaining flows into Little Lake at least 90% of their current average flow rates would keep flows largely within the range of variation currently experienced. Flows from the siphon and springs would not cease and the rate of flow would be at least directly proportional to the decrease in flow into the lake (i.e. not more than 10%). The wetland area between the south end of the lake and Coso Spring likely thrives on shallow groundwater in addition to the water discharge over the weir of the lake; however, there is currently considerable variation in the groundwater table and availability of water flowing over the weir. The defined trigger levels allow for, at most, 0.3 feet of groundwater drawdown at the north end of the lake. This would translate to an even smaller drawdown at the lower end of the property due to further down-gradient slopes and greater distance from Hay Ranch. The groundwater table downstream of Little Lake is also buffered by the water in the lake and groundwater table drawdown would likely be less than 0.3 feet, which is within the groundwater table level variation that the area currently experiences. Wetland plants are also known to grow deeper roots (within 1/2 a foot) to reach saturated soils. Therefore, wetland plants and riparian habitat are not expected to be significantly impacted with implementation of mitigation defined in Section 3.2 Hydrology and Water Quality. (FEIR, p. 3.4-43.)

The project may result in cessation of flows over the weir for slightly longer periods of time than are currently experienced; however, the timeframe of reduced flows should remain within the range currently experienced except for in the worst draught conditions (i.e. if the cessation of flows is currently for 2.5 to 4 months, the cessation of flows would still remain largely within this same range, albeit on the longer end with the mitigated proposed project). Plants have adapted to variation in water supply and should not be significantly impacted by the proposed project as long as the project does not reduce inflow by more than 10%. During winter and spring, flows will still increase along with the groundwater table, ameliorating the drier seasonal conditions. (FEIR, p. 3.4-43.)

With implementation of mitigation, some impacts may still occur to wetland vegetation and habitat at Little Lake Ranch, but impacts would be less than

significant because they would not result in a change in habitat type or a significant loss of habitat. No other aspects of project operation and maintenance besides groundwater pumping would have indirect impacts on water dependent habitats in the Rose Valley. (FEIR, p. 3.4-43.)

d. Decommissioning

Decommissioning would include removal of project components and abandonment of the pipeline in-place. Groundwater pumping for the proposed project would cease, which would also cease potential impacts to wetlands and riparian areas in the Rose Valley. Decommissioning would not have an adverse impact on sensitive habitats. (FEIR, p. 3.4-44.)

5. Findings

a. **With the implementation of mitigation measures, the Project will have a less than significant impact on biological resources. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan and the Hydrological Mitigation and Monitoring Plan. These mitigation measures specifically address the potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.**

- **Biology-1: Daily wash down of all project vehicles shall take place.**
- **Biology-2: Pre-construction tortoise surveys shall be prepared.**

- **Biology-3: Tortoise fencing and project limits fencing shall be installed.**
- **Biology-4: Tortoise monitoring during construction shall take place.**
- **Biology-5: Training of construction workers on tortoise and ground squirrel information shall be held.**
- **Biology-6: Other construction measures for the protection of desert tortoise shall be implemented.**
- **Biology-7: Replacement land for desert tortoise shall be purchased.**
- **Biology-8: Construction and all other activities shall avoid the crowned muilla plant, and a restoration plan shall be implemented if avoidance proves infeasible.**
- **Biology-9: Survey for Burrowing Owls shall be prepared prior to ground disturbing activities.**
- **Hydrology-1: The Hydrological Monitoring & Mitigation Program (HMMP) included in Appendix 1 of the FEIR shall be finalized and implemented.**
- **Hydrology-2: Groundwater wells located in Rose Valley, and which are affected by the project, will be monitored according to the provisions of the HMMP and such wells and/or equipment will be modified as necessary to allow such wells to function at current levels.**

Findings per State CEQA Guidelines Section 15091:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

The project could lead to the spread of invasive species, which would constitute a potentially significant impact. However, mitigation requiring washing of all project vehicles at an approved wash down location would be implemented to reduce impacts to less than significant levels.

Project construction, operation, and decommissioning have some potential to impact special status species. Federally and state listed threatened or endangered species in the project area include the desert tortoise and the Mohave ground squirrel. These species, as well as other special status species, could be harmed by vehicle travel and ground disturbance during project construction. Numerous mitigation measures have been defined to reduce impacts to less than significant levels, and include:

- Pre-construction desert tortoise surveys
- Tortoise fencing and project limits
- Biological monitoring to prevent harm to tortoises during construction
- Training of construction personnel to avoid impacts to tortoises
- Prohibition of pets on the project site
- The applicant's purchase of replacement habitat for desert tortoise
- Avoidance or transplanting of rare plants
- Avoidance of burrowing owls

The project would be consistent with the West Mojave Plan with implementation of mitigation measures defined in the EIR. The plan protects desert tortoise, Mohave ground squirrel, and approximately 100 other sensitive species.

The project could indirectly impact wetlands in the Rose Valley, particularly at Little Lake. Hydrology mitigation requires the monitoring and cessation or reduction of pumping prior to significant groundwater draw down near

Little Lake, defined as no greater than 10% decrease in groundwater inflows available to Little Lake. Even with mitigation, the project may result in a minimal lowering of the groundwater table beneath Little Lake. Groundwater table drawdown of up to 0.3 feet could develop within 10 years after start of pumping and persist for 10 to 20 years; thereafter groundwater levels would slowly recover to pre-pumping levels over a period of 100 years or more. At no time would the groundwater flow available to Little Lake be reduced by more than 10%. Wetland vegetation would be unlikely to change to a different community type because the change in water level would be minor and largely within the natural seasonal variation already experienced at the lake. Wetland restoration efforts have been designed to considerable variation in water availability on the Little Lake Ranch property. Changes related to the proposed project would fall within the range that has been previously experienced. Impacts to wetland vegetation would be less than significant.

D. CULTURAL RESOURCES

1. Potential Impact 3.5-1: Potential to cause a substantial adverse change in the significance of a known or unknown historical or archaeological resource

a. Overview of Impacts

Several known cultural resource sites are located within the project region. Project construction has the potential to disturb or cause an adverse change to known and unknown resources. Mitigation measures have been included to reduce impacts to historic and archaeological resources to less than significant levels. Mitigation includes training, performing additional testing and data recovery if needed, moving pipeline alignments to avoid sites, flagging sites, doing additional survey work for the substation site and connection, and directing water away from sites during maintenance activities. These measures reduce potential impacts to known and unknown cultural resources to less than significant levels. All mitigation measures or resulting actions will be coordinated with the BLM and be consistent the Programmatic Agreement being developed among the BLM, SHPO, and the ACHP, and to which the County has been invited to be a concurring party. (FEIR, p. 3.5-10.)

Indirect effects of the project on the Coso Hot Springs are addressed under Potential Impact 3.5-2. (FEIR, p. 3.5-10.)

b. Construction

Wells, Lift Pump Station. Well facility construction involves placement of down hole pumps and would not require new ground disturbance. The lift pump station would be constructed on the Hay Ranch property. The proposed project area, as shown in the design drawings in Appendix B of the Cultural Resources Inventory report (ASM 2005), was subject to intense pedestrian surveys and no cultural resources

were found within the construction area for the wells and lift pump station. The Hay Ranch property was once an alfalfa farm, but has been fallow for over 15 years (Larsen 2007). The potential for discovery of buried resources is low since the lands have been tilled and disturbed in the past. Despite a low likelihood for discovery of resources, given the cultural sensitivity of the area, mitigation measures Cultural Resources-1, Cultural Resources-2, and Cultural Resources-3 would be implemented during construction of all project components to minimize potential impacts to archaeological and historic resources to less than significant levels. (FEIR, p. 3.5-11.)

Cultural Resources-1: Prior to commencement of the project, all construction workers shall be trained on critical elements of compliance with the Archaeological Resources Protection Act (ARPA), Native American Graves Repatriation Act (NAGPRA), and the National Historic Preservation Act (NH PA), along with pertinent County requirements and expectations concerning the protection of natural, cultural, and current approved land uses. Training shall be performed by a qualified archaeologist. (FEIR, p. 3.5-11.)

Cultural Resources-2: Due to the high cultural sensitivity in the project area, a trained archaeologist shall monitor all excavation and construction. A Native American monitor must also be present during excavation. If prehistoric or historic artifacts are discovered during excavation, the monitor shall have the authority to halt all earth moving activities within and around the immediate discovery area until the find can be assessed (as addressed in Cultural Resources-3). (FEIR, p. 3.5-11.)

Cultural Resources-3: In the event that an unanticipated archaeological or historic resource is encountered during construction, work in the immediate vicinity of the find shall be halted until all requirements relating to archaeological discoveries have been satisfied. The field crew supervisor, archaeological, and Native American monitor shall halt ground-disturbing activities in the proximity of the find (100 feet), secure from vandalism or further disturbance a "no work" zone utilizing appropriate flagging, and notify appropriate County, BLM and Navy staff. The qualified professional archaeologist shall evaluate the find for eligibility for listing in the National Register of Historic Places (NRHP). If the site is determined eligible for the NRHP, the archaeologist shall identify the limits of the resource and clearly delimit the area with flagging. The eligible resources shall be avoided if possible. Only if avoidance is not possible to construct the project (and no other option for resolving adverse effects is available), data recovery shall be accomplished in the context of a detailed research design and in accordance with current professional standards. The plan shall result in the extraction of sufficient volumes of non-redundant archaeological data so as to address important regional research consideration; detailed technical reports shall be prepared to document the findings. (FEIR, p. 3.5-11.)

Substation and Associated Facilities. The substation site and the path to interconnect the substation to the proposed switchyard near the lift pump station has not been previously surveyed for the presence of cultural resources. This area would not likely contain cultural resources due to previous disturbance from farming; however,

mitigation measures Cultural Resources-1, Cultural Resources-2, Cultural Resources-3, and Cultural Resources-4 would be implemented to minimize any potential impacts to known or unknown historic or archaeological resources to less than significant levels. Mitigation measure Cultural Resources-4 requires performing a ground survey over the 1.5-acre substation site and the path to interconnect the substation to the proposed switchyard near the lift pump station. If any resources are found, the facilities would be moved (and new areas resurveyed) to avoid resources. This work would be performed prior to sale of land to Southern California Edison. (FEIR, p. 3.5-11.)

Cultural Resources-4: The entire proposed 1.5 acre substation site and the path to interconnect the substation to the proposed switchyard near the lift pump station shall be subject to an intensive pedestrian survey for cultural resources, consistent with the previous survey work performed for this project. If resources are found that are potentially eligible for the National Register of Historic Places, the substation site shall be moved to a surveyed area without resources. If re-siting the substation to avoid potentially significant resources (resources eligible for the NRHP, also known as historic properties) is not possible, data recovery shall be accomplished in the context of a detailed research design and in accordance with current professional standards. The plan shall result in the extraction of
sufficient volumes of non-redundant archaeological data so as to address important regional research consideration; detailed technical reports shall be prepared to document the findings. The survey and substation siting shall be performed prior to sale of land to Southern California Edison. A Native American monitor shall be present during all survey work. (FEIR, p. 3.5-12.)

Tanks. Two water storage tanks are proposed for the project. A 250,000 gallon tank would be constructed on the Hay Ranch property. Mitigation measures Cultural Resources-1 through Cultural Resources-3 would be implemented during construction to ensure that no historic or archaeological resources are disturbed during construction. (FEIR, p. 3.5-12.)

A 1.5 million gallon tank would be constructed on CLNAWS land. The tank area was subject to an intensive pedestrian survey and no resources were found. The project area is generally rich in resources so mitigation measures Cultural Resources-1 through Cultural Resources-3 would be implemented to minimize impacts to unknown historic or archaeological resources to less than significant levels. (FEIR, p. 3.5-12.)

The 1.5 million gallon tank would be constructed in the proposed Sugarloaf Archaeological District. The Sugarloaf Archaeological District was nominated to the NRHP under criterion D only, with the potential to yield insights into regional prehistory (ASM 2005). The qualities of the District that make it significant are tied to long-term Native American use of obsidian in the Mojave Desert and the Great Basin. Contributing properties within the District have the potential to address such regional research issues as chronology, prehistoric quarry use, and hunter-gatherer lifeways. As long as the tank does not destroy historic or archaeological resources, its construction would not have an impact on the potential eligibility of the historic district to the NRHP.

Implementation of mitigation measures Cultural Resources-1 through 3 would minimize impacts to historic and archaeological resources to less than significant levels. (FEIR, p. 3.5-12.)

Pipeline. Construction of the pipeline would require approximately 53.5 acres of ground disturbance (9 linear miles). Portions of the pipeline corridor have been noted as highly sensitive for cultural resources. (FEIR, p. 3.5-12.)

Cultural resource surveys for this project identified six resources within the proposed project APE. These six sites, for project management purposes, are being treated as eligible for the NRHP. Two of the sites, INY-2125 and INY-4413, are significant sites and contributing properties in the proposed Sugarloaf Archaeological District on CLNAWS. (FEIR, p. 3.5-12.)

Excavation for installation of the pipeline could significantly impact these six known cultural resources sites. Mitigation measure Cultural Resources-5 requires moving the segments of the pipeline in the area of these six known cultural resources sites to within the Gill Station Coso Road roadway. The archaeological surveys indicate that it is highly unlikely that subsurface archaeological sites will be encountered for the following reasons:

- Site INY-2125 is a low density lithic site (1 per 1,075.8 ft2) that does not appear to extend under the gravel road or north of the road.
- Site INY-4413 is a moderate density prehistoric site. Due to the degree of disturbance from prior road building activities, the likelihood of finding subsurface artifacts under the gravel road is low since previous testing indicates a depth limit of 2.4 inches below surface for archaeological deposits.
- Site INY-1863 is a moderate density prehistoric site. The area in the APE has already been highly disturbed by road building activities, and the likelihood of finding subsurface artifacts in this low density portion of the site and under the paved road is unlikely.
- Site INY-3406 is a small prehistoric lithic scatter and does not extend to the paved road.
- Site CGP-1 is a historic trash scatter and does not extend under the road.
- Site CGP-2 is a recently disturbed historic site. The area within the APE was also highly disturbed road building activities, and the likelihood of finding subsurface artifacts under the paved road is unlikely, especially since the densest artifact concentrations occur in a shallow wash adjacent to the road and at a lower elevation. (FEIR, p. 3.5-13.)

However, recent work along Gill Station Coso Road for road improvements for the County of Inyo Public Works Department suggested that resources may be intact under the roadway. The roadway base depth is also unknown along the roadway, but may only be a few inches deep. Excavation into the roadway could therefore have a significant impact on the cultural resources. (FEIR, p. 3.5-13.)

Cultural Resources-5 requires that the new boundaries identified in the survey for Gill Station Coso Road upgrades project be used for site INY-1863. (FEIR, p. 3.5-13.)

Implementation of mitigation measures Cultural Resources-1 Cultural Resource-2, Cultural Resources-5, and Cultural Resources-6 would reduce any potential impacts to known archaeological and historic resources along the pipeline route to less than significant levels. (FEIR, p. 3.5-13.)

Cultural Resources-5: The portion of pipeline surrounding the six known sites shall be shifted to the adjacent location within the roadway along Gill Station Coso Road. The following length of pipeline would be shifted for each site:

- The entire pipeline area over the site boundaries plus 98 feet (30 meters) on either side of larger sites INY-1863, INY-2125, INY-4413, and CGP-2
- The entire pipeline area over the site boundaries plus 33 feet (10 meters) one either side of smaller sites INY-3406 and CGP-1. (FEIR, p. 3.5-13.)

The most recent redefined boundary for site INY-1863 as discovered in cultural resource surveys performed in July 2007 for the Gill Station Coso Road upgrades project shall be used to relocate the pipeline. (FEIR, p. 3.5-13.)

Cultural Resources-6: The limits of the project construction in the vicinity of the six known historic and archaeological sites shall be flagged. No work, equipment staging, or foot traffic shall be allowed outside of the flagged areas. Workers shall be trained (per Cultural Resources-2) of the resource sensitivity in the area and to abide by construction right of way limits. (FEIR, p. 3.5-13.)

The Coso area is an area of high cultural resource (archaeological and historic) value. Although archaeological studies indicate that it is unlikely that there are subsurface archaeological deposits in the pipeline corridor mitigation measure Cultural Resources-1 through Cultural Resources-3 would be implemented to minimize impacts to any discovered resources during project construction.
The proposed project would also require construction of some additional monitoring wells. These wells are mostly located in disturbed areas and would not have the potential to have cultural resources on them. For areas that are not within a disturbed footprint, the following mitigation measure would be implemented prior to drilling any new monitoring wells. (FEIR, p. 3.5-13.)

Cultural Resources-7: Any new monitoring wells and access roads leading to the wells that are in undisturbed areas shall be subject to an intensive pedestrian survey for cultural resources, consistent with the previous survey work performed for this project. If resources are found that are potentially eligible for the National Register of Historic Places, the well and/or road sites shall be moved to a surveyed area without resources. A Native American monitor shall be present during all survey work. (FEIR, p. 3.5-13.)

c. Operation and Maintenance

Operation and maintenance of the project would only require ground disturbance in the event that a portion of the buried pipeline needs repair or replacement. This work would not have any significant impacts on historic and archeological resources since the pipeline would be constructed only in areas away from cultural resources. No new ground disturbance would be required for maintenance. Mitigation measure Cultural Resources-6 would be implemented during any maintenance work along the pipeline route in the vicinity of known cultural resources to avoid the potential for damage to the resources. (FEIR, p. 3.5-14.)

Maintenance may also require periodic emptying of the pipeline. The water in the pipeline would be drained into the holding tanks, the wells, or the injection system to remove the majority of water. Some water would remain in the pipeline after the majority of water was emptied due to loss of pressure. This water would be removed by pumping it out of the 18 air release valves located along the pipeline. Any pumped water would be drained over the surface using hoses and would be directed to the natural road drainage. To minimize the chances of scour or erosion where significant cultural resources are located adjacent to the road, the following mitigation measure would be implemented. (FEIR, p. 3.5-14.)

Cultural Resources-8: No water shall be pumped directly onto the six known cultural resource sites during draining of the project pipeline for maintenance. Water pumped out of the pipeline shall not occur in the vicinity of known cultural resources. (FEIR, p. 3.5-14.)

Implementation of this measure would reduce potential impacts from operations and maintenance to cultural resources to less than significant levels. (FEIR, p. 3.5-14.)

The project is not expected to result in groundwater drawdown at Portuguese Bench. No ground disturbance is proposed at Portuguese Bench and no additional monitoring would occur there because there is no hydrologic dependency on the alluvial aquifer and this site would not be impacted. Operation of the project would not have an impact on off-site resources (Coso Hot Springs are addressed under Potential Impact 3.5-2, below). Operation would require reading monitoring wells at various locations, as specified in section 3.2 Hydrology and Water Quality. Reading of wells would not require heavy equipment and would be accessed via existing roadways and by

foot. Reading of monitoring wells would not impact archaeological or historic resources. (FEIR, p. 3.5-14.)

d. Decommissioning

Decommissioning would involve removing above ground project components, including the tanks and the equipment on the Hay Ranch parcel, and abandoning the pipeline in-place. All known cultural resources are along the pipeline route. Since the pipeline would be abandoned in-place and would not require any ground disturbance or excavation during decommissioning there would be no impacts to known archaeological resources. Decommissioning would not impact unknown resources because it would occur within the original construction footprint. (FEIR, p. 3.5-14.)

2. Potential Impact 3.5-2: Potential to cause a substantial adverse effect to a site of Native American significance

a. Overview of Impacts

The proposed project would be constructed near the Coso Hot Springs a Native American prayer site, which is listed in the National Register of Historic Places. Construction would result in some additional traffic along Gill Station Coso Road but would not impede use of the prayer site. The terminus of construction is far enough away from the prayer site to not have a significant impact on the site during construction or operation. (FEIR, p. 3.5-14.)

The injection of the water pumped from Hay Ranch could have an impact on the Coso Hot Springs. Recent, detailed numerical modeling has been performed to understand the relationship between changes in Coso Hot Springs and geothermal development. The modeling suggests a relationship where reduced pressure in the geothermal field creates an increase in the size of the steam cap. This increased steam cap may have influenced the hot springs, making them initially increase in water level and temperature. The proposed project involves injecting additional water into the system, which may counter the pressure differential and result in a decrease in the steam phase and a decrease in water level and temperature in the hot springs. These changes could make the hot springs closer to their pre-geothermal development condition. Negative changes to the hot springs are not expected. (FEIR, p. 3.5-15.)

b. Construction

There is a Native American prayer site located along Gill Station Coso Road approximately 1,600 feet from the terminus of the proposed project pipeline route into the injection system at the Coso geothermal field. The site is accessed from the west along Gill Station Coso Road, where construction would occur. Construction traffic would not affect or impede use of the site, per mitigation measure Traffic-1. This measure requires the applicant to coordinate road closures with the appropriate parties, including the tribes. Traffic may otherwise experience some delays along the road, but would be able to pass. (FEIR, p. 3.5-15.)

Construction would commence more than a quarter mile away from the prayer site and would end at an existing well pad system; however, it could disrupt activities at the prayer site. Mitigation measure Cultural Resources-9 would be implemented to minimize impacts to activities at the prayer site during project construction. (FEIR, p. 3.5-15.)

Cultural Resources-9: In order to minimize impacts to Native Americans, traffic (within a reasonable distance of the religious activity) will be halted during ceremonial and religious observations. (FEIR, p. 3.5-15.)

Construction would not impact Coso Hot Springs since they are located approximately 2.5 miles from the project terminus. (FEIR, p. 3.5-15.)

c. Operation and Maintenance

Operation and maintenance of the proposed project and all of its components would not impact the prayer site. Once operation commences the pipeline and connection to the injection system would not be readily visible at the prayer site. Operation of the pipeline and associated facilities would have no impacts on the prayer site. Maintenance would only occur periodically and would not result in significant traffic on Gill Station Coso Road that could interrupt travel to the prayer site. Maintenance may require some ground disturbance to repair segments of pipeline; however, these repairs would be infrequent and localized and would not significantly impact traffic. (FEIR, p. 3.5-15.)

Operation of the proposed project would not adversely impact Coso Hot Springs. The US Navy initiated a comprehensive monitoring program in the Coso Hot Springs area in February 1978 (US Navy 1980); the monitoring is ongoing. Monitoring is required in the 1979 MOA between CLNAWS, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation for geothermal development activities at Coso. (FEIR, p. 3.5-15.)

Recent studies have been performed (ITSI 2007) to analyze the connection between the geothermal field and the hot springs. Refer to Section 3.2 Hydrology and Water Quality for a complete discussion of the history of the hot springs since geothermal development began and details of the ITSI report. (FEIR, p. 3.5-15.)

The results of the ITSI study suggested that the increase in temperature at the hot springs since geothermal activity commenced is due to a decrease in pressure in the geothermal reservoir due to loss of water, which results in an increase in steam phase over the reservoir. The steam phase travels along the Coso Wash Fault, and the vapor condensate upwelling through the fault sources the hot springs. Figure 3.5-1, taken from the 2007 ITSI report, shows a schematic drawing of the change in water level and steam production before and after geothermal development. (FEIR, p. 3.5-16.)

Injection of water into the geothermal system as proposed in this project is not expected to have an impact on Coso Hot Springs. The injection of water should decrease the withdrawal to injection deficit and increase the pressure within the geothermal system under the cap rock. This increase in pressure should reduce the steam phase, pushing the system in the direction of its predevelopment condition. Coso Hot Springs may not see any change in size or temperature, or there may be a decrease in temperature and size of the pools, potentially closer to the pre-geothermal development conditions. The proposed project may make the hot springs more similar to their predevelopment conditions than their current condition. The proposed project may also result in no change from the current conditions. (FEIR, p. 3.5-16.)

Management of the hot springs falls under the existing 1979 MOA between CLNAWS, the SHPO, and the Advisory Council on Historic Preservation (refer to Appendix E). This MOA addresses development of geothermal resources on Navy fee-acquired land within the Coso Known Geothermal Resource Area (KGRA). The proposed project is part of the development of the Coso KGRA; therefore, it falls under this MOA. The MOA also acknowledges that hot springs such as Coso, that are located on geologically young faults and in highly seismic areas, are not permanent features but are apt to be changed or eliminated by natural forces. The project is not expected to have a significant impact on Coso Hot Springs with implementation of the existing MOA. No additional mitigation for the proposed project is needed. The 1979 MOA is included in Appendix E to this EIR. (FEIR, p. 3.5-16.)

d. Decommissioning

Decommissioning would involve removal of project equipment on public land and abandonment of the pipeline in place. Equipment on the Hay Ranch property would be removed and disposed of, stored, or recycled. Injection would cease just prior to the decommissioning phase. Decommissioning would not impact the prayer site. Some changes may occur to Coso Hot Springs after project decommissioning; however, changes would be a result of restoration of natural conditions and would therefore not be significant. Decommissioning would have less than significant impacts on areas of Native American significance. (FEIR, p. 3.5-16.)

3. Potential Impact 3.5-3: Potential to disturb any human remains, including those interred outside of formal cemeteries

a. Overview of Impacts

Given the high cultural sensitivity of the region, excavation for construction of any of the project components could uncover human remains. There are no known burials along the project APE; however, impacts to previously undiscovered remains would be considered significant. The likelihood of finding remains on the Hay Ranch parcel are minimal because this land has been activity farmed and tilled for many years; however, there is a possibility for uncovering remains along the pipeline route on BLM managed and Navy managed lands. Mitigation has been included to minimize impacts to less than significant levels. (FEIR, p. 3.5-16.)

b. Construction

The wells lift pump station, and substation and associated facilities would all be located on the Hay Ranch property. Human remains are not expected to be disturbed or discovered during construction of these elements due to the fact that the land at Hay Ranch has previously been disturbed for alfalfa farming. In the unlikely event that human remains were encountered, a potentially significant impact could occur. The pipeline route and 1.5 million gallon tank would be built adjacent to Gill Station Coso Road in an area that is largely undisturbed. There are no known burials in the project APE; however, there is a small chance of encountering remains during construction. The following mitigation measure would be implemented for construction of the entire project to reduce impacts associated with discovery of human remains to less than significant levels. (FEIR, p. 3.5-18.)

Cultural Resources-10: In the event of discovery of human remains (or the find consists of bones suspected to be human), the field crew supervisor, archeological monitor, and Native American monitor, under the direction and responsibility of the applicant, shall take immediate steps to secure and protect such remains from vandalism during periods when workers are absent. The Inyo County Coroner shall be notified immediately and provided with any information that identifies the remains as Native American. If the remains are determined to be from a prehistoric Native American, or determined to be a Native American from the ethnographic period, the Coroner shall contact the Native American Heritage Commission within 24 hours of being notified of the remains. The NAHC then designates and notifies within 24 hours a Most Likely Descendent (MLD). The MLD has 24 hours to consult and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and grave goods. Human remains shall be preserved in situ if continuation of construction, as determined by the qualified Archaeologist and MLD, will not cause further damage to the remains (this is the preferred alternative). The remains and artifacts shall be documented and the find location carefully backfilled (with protective geofabric if desirable).

In the event that human remains or burial associated items are exposed and cannot be protected from further damage, they shall be exhumed by the qualified archaeologist at the discretion of the MLD and tribes and reburied with the concurrence of the MLD and tribes in a place mutually agreed upon by all parties. (FEIR, p. 3.5-18.)

c. Operation and Maintenance

Operation and maintenance of the project could include ground disturbance if a portion of the buried pipeline needs repair or replacement. This work would not have any potential to disturb human remains, since it would only occur in previously disturbed areas (areas where initial construction took place). No additional mitigation is required for maintenance and operation of the pipeline. (FEIR, p. 3.5-18.)

d. Decommissioning

Decommissioning would involve removing above ground project components, including the tanks and the equipment on the Hay Ranch parcel, and abandoning the pipeline in-place. Decommissioning would not require excavation in any new areas where undiscovered remains could lie. Decommissioning would not impact human remains because it would occur within the original construction footprint. (FEIR, p. 3.5-18.)

4. <u>Findings</u>

a. **With the implementation of mitigation measures, the Project will have a less than significant impact on cultural resources. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan and the Hydrological Mitigation and Monitoring Plan. These mitigation measures specifically address the potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.**

- **<u>Cultural Resources-1</u>: All construction workers shall be trained on compliance with various requirements and Acts which protect archaeological resources.**
- **<u>Cultural Resources-2</u>: A trained archaeologist shall monitor all excavation and construction, and a Native American monitor shall be present during all excavation.**
- **<u>Cultural Resources-3</u>: Construction work shall be halted if resources are found, and a professional archeologist shall evaluate the resource.**
- **<u>Cultural Resources-4</u>: The substation site shall be surveyed for resources prior to construction activities.**
- **<u>Cultural Resources-5</u>: Pipeline locations shall be shifted to accommodate six known resource sites.**
- **<u>Cultural Resources-6</u>: The boundary limits of construction activity shall be marked/flagged, and no activity shall be allowed outside the area, thus safeguarding the six known resource sites.**
- **<u>Cultural Resources-7</u>: Sites for new monitoring wells shall be surveyed for resources prior to construction activities.**
- **<u>Cultural Resources-8</u>: Any water pumped from the pipeline during maintenance activities shall be diverted away from the six known resource sites.**
- **<u>Cultural Resources-9</u>: Traffic occurring near areas of Native American religious activity will be halted during ceremonies and observances.**
- **<u>Cultural Resources-10</u>: Construction activities be shall halted if human remains are discovered and the Inyo County coroner notified; other Native American officials shall be contacted if the remains are identified as Native American.**

Findings per State CEQA Guidelines Section 15091:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

Several known cultural resource sites are located within the project region. Project construction has the potential to disturb or cause an adverse change to known and unknown resources, including the potential to disturb human remains. Mitigation measures are defined to minimize impacts to historic and archaeological resources to less than significant levels. Mitigation includes worker training, performing additional testing and data recovery if needed, moving pipeline alignments to avoid sites, flagging sites, performing additional surveys for the substation site and connection, and directing water away from sites during maintenance activities. All mitigation measures or resulting actions would be coordinated with the BLM and would be consistent with the Programmatic Agreement being developed among the BLM, State Historic Preservation Office, and the Advisory Council on Historic Preservation.

The proposed project is also subject to the existing 1979 Memorandum of Agreement among the CLNAWS, the State Historic Preservation Office, and the Advisory Council on Historic Preservation, which addresses effects to the Coso Hot Springs (a site listed on the National Register of Historic Places) from geothermal development activities.

There is a Native American prayer site located along Gill Station Coso Road near the terminus of the proposed project pipeline route into the injection system at the Coso geothermal field. The prayer site is also listed in the National Register. Construction traffic and operations could disrupt ceremonies at this prayer site, which would be considered a potentially significant effect. Mitigation defined in the EIR requires the cessation of all project activity near any ceremonies at the prayer site. The mitigation would reduce impacts to less than significant levels.

E. LAND USE, PLANNING & RECREATION

1. Potential Impact 3.7-1: Potential to directly conflict with existing and/or designated land uses

a. Overview of Impacts

The project currently falls within land designated as "Rural Protection" and as SFL. The project construction and operation and maintenance would not be in direct conflict with zoned land use or existing land uses for any portion of the project. Impacts would be less than significant and no mitigation is required. (FEIR, p. 3.7-8.)

b. Construction

Wells, Lift Pump Station, and Substation and Associated Facilities. Construction of the components on the Hay Ranch property would not conflict with existing land uses. The project parcel is privately owned by COC. The parcel is not currently inhabited and agricultural activities have not occurred on the parcel in over 15 years. Construction would require removing abandoned buildings on the site but would not conflict with the existing land use on the project site. (FEIR, p. 3.7-8.)

Tanks. The construction of the 250,000 gallon water storage tank on the Hay Ranch property would not conflict with existing land use on the property, as previously discussed. A 1.5 million gallon tank would be constructed in a 0.75-acre area just south of Gill Station Coso Road on CLNAWS property. (FEIR, p. 3.7-8.)

The area for the tank on CLNAWS property is not currently used for any particular purpose and is in a natural state. The military weapons testing and training uses of the CLNAWS property are located primarily to the east of the geothermal development activities. Since no military testing is located at the proposed tank location at the entrance to CLNAWS and next to Gill Station Coso Road, construction of the tank for geothermal activities would not conflict with present land uses. (FEIR, p. 3.7-8.)

Pipeline. The pipeline would be partially constructed on the Hay Ranch property. Construction on the property would not conflict with existing land use. A portion of the pipeline would be constructed along Gill Station Coso Road, which is used for access to CLNAWS, pumice mines in the Coso Range, and the Coso Hot Springs. Construction of the pipeline could conflict with existing vehicle travel along the road; however, mitigation as defined in Section 3.14 Transportation and Traffic would be implemented to minimize impacts to road usage to less than significant levels. (FEIR, p. 3.7-8.)

The Inyo County Public Works Department is currently planning to upgrade and widen sections of Gill Station Coso Road. COC has submitted an application with the Inyo County Department of Public Works for right-of-way access

along the road. COC would coordinate with the County to minimize impacts to use of the road during construction. (FEIR, p. 3.7-8.)

A section of pipeline would be located on the CLNAWS property. Construction would occur within the road ROW and would not interfere with existing Navy activities and land uses. Navy weapons testing activities occur within CLNAWS at a considerable distance from the proposed project. The geothermal activities at CLNAWS are located at the eastern end of the proposed project pipeline. Construction of the pipeline would be within the geothermal area and near CLNAWS west entrance, away from weapons testing regions. The pipeline would primarily be buried and would not conflict with existing Navy land uses. (FEIR, p. 3.7-8.)

c. Operation and Maintenance

Wells, Lift Pump Station, and Substation and Associated Facilities. Operation of the facilities on the Hay Ranch property would not conflict with existing and/or designated land uses. Discussion of future potential agricultural use of the property is addressed in Section 3.8 Agricultural Resources. (FEIR, p. 3.7-8.)

The project would not require a change in land use or zoning designations at the Hay Ranch property because COC is only proposing to pump water, which is a currently permissible land use. The General Plan designation was established in 2001 and the land had been fallow for about 10 years by then. The land use designation of "Rural Protection" includes "managed production of resources." The proposed use of the property involves the managed production of the water for geothermal energy production, which is consistent with the designation. The land use designation is intended to keep land relatively rural in character. The proposed substation and pump lift station would comply because these facilities would only occupy about 5 acres of the 300 acre parcel (1.7 percent), and the majority of the parcel would remain as rural and undeveloped. (FEIR, p. 3.7-9.)

The proposed substation would fall under the jurisdiction of the CPUC GO No. 131-D. Although the project parcel is not designated as Public Facility (PF), Coso would sell approximately 1.5 acres of property (as shown in Figure 2.3-2) to Southern California Edison for the substation construction. The substation and associated facilities would be exempt from local planning and zoning regulations and would therefore not conflict with local land use and zoning. The substation would be screened with compatible landscaping to minimize its visibility and to be compatible with the rural character of the parcel. Impacts would be less than significant. (FEIR, p. 3.7-9.)

Maintenance of the facilities on the Hay Ranch property would entail periodic draining of the pipeline into the tank and the wells. The tank includes an overflow. Overflow would not impact the surrounding BLM land uses. Coso recently completed a 2-week pump test, where 28,800,000 gallons were discharged from the wells onto the parcel without erosion or seepage onto BLMowned lands. Impacts from discharge from the tanks for maintenance or even failure of the tanks would not have an impact on surrounding land uses. (FEIR, p. 3.7-9.)

Tanks. Operation and maintenance of the two water storage tanks would not directly conflict with or change any existing land uses. The tanks would not have any operating function that might prevent future agricultural uses on Hay Ranch or any existing military weapons testing uses on CLNAWS. The operation of the tanks would not conflict with any land uses. (FEIR, p. 3.7-9.)

Pipeline. The operation of the pipeline would not conflict with existing land use or zoning on the Hay Ranch parcel, in the Gill Station Coso Road right-of-way, or on the CLNAWS property. The pipeline would be mostly buried (with only a 500-foot section located above ground as shown in the design drawings in Appendix B) and would only have the potential to result in an impact in the case that maintenance would be required on a buried segment of the pipeline. Excavating a portion of the buried pipeline along Gill Station Coso Road may damage the road leading to a compromised usage of the road. Mitigation measure Traffic-2 would require coordination with interested parties and the County Department of Public Works to reduce impacts to less than significant levels. (FEIR, p. 3.7-9.)

d. Decommissioning

Decommissioning would include removal of project facilities and abandonment of the pipeline. Decommissioning would not alter any existing land uses. (FEIR, p. 3.7-9.)

2. Potential Impact 3.7-2: Potential to indirectly conflict with existing and/or designated land uses

Construction of the proposed project would have no indirect impacts on existing land uses. The project would be constructed between 7:00 a.m. and 7:00 p.m. and noise would attenuate to acceptable levels before reaching nearby land uses and sensitive receptors (See Section 3.12: Noise). Construction of the project components would not indirectly affect agricultural uses in the project vicinity because no groundwater or only a small amount of groundwater would be used for construction. (FEIR, p. 3.7-9.)

Operation of the project has a small potential to indirectly conflict with surrounding agricultural and ranching land uses in the region and with the habitat restoration at Little Lake. Refer to Section 3.2 Hydrology and Water Quality, which discusses impacts to water levels at Little Lake and Portuguese Bench. Monitoring and mitigation programs are defined to avoid the potential effects to these areas and land uses. Groundwater pumping would cause some degree of groundwater drawdown throughout the Rose Valley. Wells in the community of Dunmovin and at Coso Junction may become inoperable if groundwater is drawn down below the pumps limits. Mitigation has been included (Hydrology-1 and Hydrology-2) to minimize potential impacts to well usage to less than significant levels. Water levels and vegetation at Little Lake Ranch could be impacted by groundwater drawdown; the effects, however, would not be significant (see further discussion in Section 3.2 Hydrology and Water Quality).

Mitigation measures Hydrology-1, Hydrology-2, and Hydrology-3 would minimize water and vegetation changes at Little Lake, which would avoid or minimize impacts to the recreational uses at the Lake. (FEIR, p. 3.7-10.)

3. Potential Impact 3.7-3: Potential to conflict with the Federal Land Policy and Management Act, the California Desert Conservation Area Plan, the West Mojave Plan, the China Lake Comprehensive Land Use Management Plan, the Inyo County General Plan, or the Inyo County Groundwater Ordinance

Construction, operation and maintenance, and decommissioning of the proposed project would not conflict with existing plans, as described below. Potential conflicts with the West Mojave Plan would be mitigated to less than significant levels, as described below and in Section 3.4 Biological Resources. (FEIR, p. 3.7-10.)

FLPMA and CDCA

The FLPMA would only be applicable to lands managed by the BLM. The FLPMA provides for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality. The plan would be applicable to the pipeline located on BLM managed lands. The CDCA was created as a requirement within the FLPMA. (FEIR, p. 3.7-10.)

A portion of the proposed pipeline would be constructed on public lands subject to the CDCA Plan. Under the CDCA Plan, the proposed pipeline would need to be constructed within existing corridors, where possible. The majority of the pipeline would lie within an amended corridor running between the Coso Known Geothermal Resource Area (KGRA) and Utility Corridor A, and the pipeline would be within the corridor of Utility Corridor A (BLM 2006). Construction of the proposed pipeline would not conflict with the CDCA plan and no mitigation would be required. (FEIR, p. 3.7-10.)

West Mohave Plan

The West Mohave Plan is a Habitat Conservation Plan and CDCA Plan amendment that is applicable on local lands. Compliance with this plan for the construction of all components of the project would be required. Certain construction activities may impact species protected by the West Mojave Plan. Mitigation would be implemented to reduce these impacts to less than significant levels. The West Mojave Plan and the project's mitigation related to the plan are described in detail in Section 3.4 Biological Resources. (FEIR, p. 3.7-10.)

China Lake CLUMP

The China Lake CLUMP applies to lands within the CLNAWS property. The 1.5 million gallon tank would be on CLNAWS lands and would be subject to the CLUMP, as would a portion of the pipeline. The CLUMP recognizes multiple uses of these lands but promotes the primary use of weapons testing. The location where the

tank would be constructed is not frequently used for weapons testing and likely would not be frequently used in the future due to the close proximity to Gill Station Coso Road and the entrance to CLNAWS. The pipeline would be installed underground and would not conflict with the mission of the base. Construction, operation and maintenance, and decommissioning of the tank and pipeline would not conflict with the China Lake CLUMP. (FEIR, p. 3.7-10.)

Inyo County General Plan

The proposed project would not conflict with the Inyo County General Plan. The project is consistent with the current land use designation for the site. Other policies in the General Plan are addressed in each section of this EIR. (FEIR, p. 3.7-11.)

Inyo County Groundwater Ordinance

The groundwater source for the project is subject to regulation under the Inyo County Groundwater Ordinance. The project proponent has applied for the issuance of a CUP pursuant to that Ordinance. The project is currently being evaluated under CEQA for issuance of the conditional use permit. The project would not conflict with the Inyo County Groundwater Ordinance with the issuance of the CUP. (FEIR, p. 3.7-11.)

4. Potential Impact 3.7-4: The potential to conflict with recreational activities in the project vicinity

a. Overview of Impacts

The proposed project would not conflict with recreational activities in the project region. There are no recreational activities directly within or adjacent to the areas proposed for construction. Indirect effects could occur at the private Little Lake Ranch area if the project were to cause groundwater drawdown; however, significant drawdown is not likely and mitigation has been included in Section 3.2 Hydrology and Water Quality to minimize effects at Little Lake Ranch. (FEIR, p. 3.7-11.)

b. Construction

Construction of the proposed project would not affect recreational activities in the project vicinity. The closest national recreation area is Coso Range Wilderness, located 7 miles away from the project. Construction would be too distant to disrupt activities in the range. There are no County parks or campgrounds in the project vicinity. Impacts would not occur. (FEIR, p. 3.7-11.)

c. Operation and Maintenance

Maintenance of the project would be localized and would not affect recreation in the project vicinity. Operation of the project might have the potential to impact wildlife hunting and fishing at Little Lake if operation results in substantial drawdown of water levels at the reservoir. Lowered water levels at Little Lake would

have the potential to compromise wetlands and existing wildlife. Mitigation defined in Section 3.2 Hydrology and Water Quality would be implemented to ensure that significant impacts to water levels and vegetation do not occur at Little Lake. Mitigation measures would minimize water and vegetation changes at Little Lake, which would avoid or minimize impacts to the recreational uses at the Lake. (FEIR, p. 3.7-11.)

Refer to Section 3.2 Hydrology and Water Quality for a complete discussion of project operation and drawdown in Rose Valley. (FEIR, p. 3.7-11.)

d. Decommissioning

Decommissioning would include removal of project parts and abandonment of the pipeline. Decommissioning would not impact any existing recreation resources. (FEIR, p. 3.7-11.)

5. <u>Findings</u>

a. **With the implementation of mitigation measures, the Project will have a less than significant impact on land use, planning and recreation. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan and the Hydrological Mitigation and Monitoring Plan. These mitigation measures specifically address the potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.**

- **<u>Biology-1</u>: Daily wash down of all project vehicles shall take place.**
- **<u>Biology-2</u>: Pre-construction tortoise surveys shall be prepared.**

- **<u>Biology-3</u>: Tortoise fencing and project limits fencing shall be installed.**
- **<u>Biology-4</u>: Tortoise monitoring during construction shall take place.**
- **<u>Biology-5</u>: Training of construction workers on tortoise and ground squirrel information shall be held.**
- **<u>Biology-6</u>: Other construction measures for the protection of desert tortoise shall be implemented.**
- **<u>Biology-7</u>: Replacement land for desert tortoise shall be purchased.**
- **<u>Biology-8</u>: Construction and all other activities shall avoid the crowned muilla plant, and a restoration plan shall be implemented if avoidance proves infeasible.**
- **<u>Biology-9</u>: Survey for Burrowing Owls shall be prepared prior to ground disturbing activities.**

<u>Findings per State CEQA Guidelines Section 15091</u>:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

The proposed project could conflict with the West Mojave Plan by causing impacts to species protected by the plan. Mitigation described under Section 3.4 Biological Resources would reduce any potentially significant impacts to less than significant levels. The project would not require a change in land use or zoning designations at the Hay Ranch property because COC is only proposing to pump water, which is a currently permissible land use. The land use designation of "Rural Protection" includes "managed production of resources." The proposed use of the property involves the managed production of water for geothermal energy production, which is consistent with the designation.

The proposed project would not conflict with recreational activities in the project region. There are no recreational activities directly within or adjacent to the areas proposed for construction. Indirect effects could occur at the private Little Lake Ranch area, which is a habitat preserve, if the project were to cause groundwater drawdown that could significantly impact the wetlands and surface
waters associated with restoration efforts. Significant drawdown is not likely with mitigation (prescribed in the Hydrology section) that requires reducing or ceasing pumping prior to reaching trigger levels that were designed to avoid significant effects to Little Lake.

F. AESTHETICS

1. Potential Impact 3.9-1: The potential to have a substantial adverse effect on the scenic quality of the local environment, as experienced by sensitive viewers

a. Overview of Impacts

Visual impacts from the proposed project would differ depending upon the stage of work. Construction would be temporary and would result in some visual impacts within the foreground of the viewshed in the project area. Impacts would be associated with ground disturbance and the presence of

construction equipment and materials. Operational and maintenance impacts would include the presence of a substation and mechanical building, a lift pump station building, and a water tank on the Hay Ranch property. A second tank and some sections of above ground pipeline would also be visible along Gill Station Coso Road from the Hay Ranch property to CLNAWS. (FEIR, p. 3.9-5.)

The proposed project would not have significant visual impacts because the project elements would not be visually obtrusive or detract from the overall scenic views associated with the scenic quality of the viewshed, including the vegetation, lava flows, and peaks of the eastern Sierra Nevada crest. Project impacts would be less than significant because the visible elements would be largely screened. The project as proposed includes painting all exposed elements in neutral desert colors, which would minimize visual obtrusiveness. (FEIR, p. 3.9-5.)

b. Construction

Wells, Lift Pump Station, and Substation and Associated Facilities. Wells would only require the installation of pumps, which would not have a significant visual impact. Construction of the substation and associated buildings (a mechanical and electrical equipment building (mechanical and electrical equipment room)) and the lift pump station would require trucks and heavy equipment. Construction work would involve ground disturbance that could be visible from US 395; however, visual impacts would be temporary. Construction would last approximately 110 days, with work on multiple areas occurring concurrently. (FEIR, p. 3.9-6.)

Construction would occur approximately 0.33 miles east of US 395 and would result in the disturbance of about 5 acres of the 300 acre property. Sensitive viewers may see colored construction equipment (often bright yellow in color); tall pieces of machinery such as cranes, and material stockpiles of wood. This construction view, though temporary, could be considered potentially significant and distracting from the overall quality of the viewshed in the project area. The following mitigation measure would be implemented to reduce impacts to less than significant levels. (FEIR, p. 3.9-6.)

Aesthetics-1: Construction of the project components on the Hay Ranch property shall be screened with cloth construction fencing. The fencing will be a desert sand or similar neutral color. The fencing will conceal equipment and material piles from sensitive viewers. The temporary fencing shall be removed after construction is complete. (FEIR, p. 3.9-6.)

After construction is complete at the project site, any disturbed ground that is not a part of the substation, mechanical and electrical equipment room, or lift pump station facilities and access roads would be recontoured and reclaimed with a native seed mix. (FEIR, p. 3.9-6.)

Tanks. The project includes construction of two water storage tanks. One 250,000 gallon tank would be constructed on the Hay Ranch property. The tank would be less than 25 feet tall and would be located in the vicinity of the south well. Construction of the tank would also occur at the same time as the other components and would be considered part of the same construction footprint. Mitigation measure Aesthetics-1 would be implemented during construction of the tank to reduce effects to less than significant levels. (FEIR, p. 3.9-6.)

The second tank would be located along the south side of Gill Station Coso Road at the highest point along its route within CLNAWS. This tank would be about 100 feet in diameter and 28 feet tall. The tank would require a construction area of about 0.75 acres. The tank would be welded together on-site and would be installed on top of a reinforced concrete ring wall footing. Large construction equipment would be needed to install the tank. The installation would be visible from Gill Station Coso Road; however, the tank would be installed within Navy lands, which is not open to the public and where sensitive viewers are not expected. The tank would take a few weeks to construct and would have a less than significant temporary visual impact. (FEIR, p. 3.9-6.)

Pipeline. A portion of pipeline would be installed on the Hay Ranch property between the north well and the south well. This section would include a 12-inch pipeline installed underground. Some construction equipment would be needed for installation but the equipment would be limited to a dozer/trencher and would be low profile. Installation would not have a significant visual impact. (FEIR, p. 3.9-6.)

Construction of the pipeline along Gill Station Coso Road would take approximately 110 days and would occur in sections. The pipeline installation would require minimal equipment (dozers/ trenchers and trucks) and materials since it is a linear 20 inch pipeline installed either above ground or 3 feet below ground. Primary traffic on Gill Station Coso Road is traffic related to the Coso geothermal plants, Native Americans visiting the hot springs (generally two to three times per year), pumice mine workers, and individuals who work at CLNAWS. Native American concerns are addressed in Section 3.5 Cultural Resources. Impacts of construction along Gill Station Coso Road would be less than significant because of the temporary nature of construction, limited sensitive viewers, and minimal effects to the overall scenic landscape due to the minimal localized disturbance. After construction of the pipeline is complete, any disturbed ground would be recontoured and reclaimed with a native seed mix. Impacts of pipeline construction would be less than significant and no additional mitigation is necessary. (FEIR, p. 3.9-6.)

c. Operation and Maintenance

Wells. The wells are existing features and therefore would not result in additional visual impacts to the project area. Maintenance could include

some vehicles and workers periodically on-site. Impacts to visual resources from a few maintenance trucks and workers would be less than significant. (FEIR, p. 3.9-7.)

Lift Pump Station. The lift pump station would be located near the south well (as shown in Figure 2.3-2 in the Project Description) and would be visible to viewers on US 395. The property currently has several dilapidated buildings and storage sheds that would be removed. The lift pump station would not be out of character with the surrounding environment. Perimeter fencing would be chain-link, which would not be easily visible from a distance. The visual impact of the pump station and fencing would be less than significant because they would be in the background view from US 395, would be painted to blend with the landscape, and would not be out of character with existing facilities in the area. (FEIR, p. 3.9-7.)

To further reduce visual impacts associated with these facilities, the lift pump station would be landscaped with native vegetation for screening. The lift pump station tank and mechanical control building and surge tanks would be painted a desert almond tan color to minimize visual impacts and avoid glare. These measures would minimize the contrast between the foreground and the background and would not visually degrade the overall viewshed.
Potential impacts would be less than significant and further mitigation would not be required. Figure 3.9-1 and Figure 3.9-2 shows a visual simulation of the proposed lift pump station and the substation and associated facilities on the Hay Ranch property as viewed looking east from US 395. (FEIR, p. 3.9-7.)

Maintenance of the facilities could include periodic inspections and some minor equipment. Visual impacts would be temporary and less than significant. (FEIR, p. 3.9-7.)

Substation and Associated Facilities. The substation and associated facilities would be located on a 1.5 acre parcel of land located at the eastern edge of the Hay Ranch parcel, where the existing 115 kV lines cross on to the property. This location is shown in Figure 2.3-3 and in Figure 3.9-2. The substation would be located more than 0.5 miles from US 395. The substation would not be visually dominant in the foreground view from US 395 and would not detract from the overall visual character of the area. There are currently very large 500 kV transmission lines on lattice structures that are visible looking to the east over the Hay Ranch property from US 395. The substation would be consistent with these views, although much less obtrusive. The substation mechanical and electrical equipment room would be painted a desert almond color to blend in to the surrounding environment and would be surrounded by a chain link fence, with a locked gate. The fence would not be visible from US 395. Visual impacts from the substation and associated facilities would be less than significant. (FEIR, p. 3.9-7.)

Tanks. The tank on the Hay Ranch property would be less than 25 feet tall, but would be constructed within the same area as the lift pump station so as to appear a part of the larger facility. The tank on the Hay Ranch property would be painted a desert almond tan color to blend in with the existing environment so as not to distract from the overall scenic viewshed in the area. (FEIR, p. 3.9-7.)

The 1.5 million gallon high-point tank would also be painted a desert almond tan color to blend in with the existing landscape and to avoid glare. This tank would be located on the CLNAWS property and would not be visible to sensitive viewers. Impacts would be less than significant and further mitigation would not be required. (FEIR, p. 3.9-7.)

Maintenance of the tanks could include periodic inspections requiring a few workers and some minor equipment. Visual impacts would be temporary and less than significant. (FEIR, p. 3.9-7.)

Pipeline. The proposed project includes a 9-mile water pipeline. The pipeline would be buried, except for a 500-foot portion of the pipeline near the entrance of CLNAWS (see area in plan drawings in Appendix B). The exposed portion of the pipeline would be painted a desert almond tan color to blend with existing landscape and minimize glare. The above-ground sections of pipeline would have a low profile, and would be constructed a few feet above the ground. The above-ground portion of the pipeline would not be visible to sensitive viewers, would be in the foreground of views associated with the road, and would not have a significant impact on the scenic quality of the viewshed. No further mitigation would be required. (FEIR, p. 3.9-8.)

Maintenance of the pipeline could include periodic use of maintenance vehicles for inspecting sections of pipeline or draining small sections of pipeline to local drainages. Visual impacts from this work would be temporary, usually only lasting a few days or less, and would be less than significant. No mitigation would be required. (FEIR, p. 3.9-8.)

d. Decommissioning

Decommissioning would cause minor visual impacts during component removal. The substation would remain in place; however, the tank and buildings and concrete structures on the Hay Ranch property, as well as the high point tank on CLNAWS, would be removed to an authorized landfill or recycled. Mitigation measure Aesthetics-1 would be implemented for removal of the pump lift station associated equipment on the project property. Impacts would be less than significant with implementation of this measure. (FEIR, p. 3.9-8.)

2. <u>Potential Impact 3.9-2: The potential to cause a substantial adverse effect on the scenic quality of the region by indirect effects to regional water-dependent vegetation and wetlands, as</u>

experienced by sensitive viewers

a. Overview of Impacts

The proposed project could result in impacts to the scenic quality of the region if vegetation loss occurred as a result of drawdown in the valley. Impacts would be reduced to less than significant levels with mitigation and are discussed in Section 3.2 Hydrology and Water Quality. (FEIR, p. 3.9-8.)

b. Construction

Construction impacts would not affect the scenic quality of the greater project region because they would be temporary and in the middleground to background from most views. Impacts would be localized to the Hay Ranch property and along Gill Station Coso Road. Impacts are discussed above and with mitigation measure Aesthetics-1 are reduced to less than significant level. No larger regional impacts to visual resources are expected from project construction. (FEIR, p. 3.9-8.)

c. Operation

Operational impacts could include the potential change in vegetation in the valley due to groundwater drawdown from the proposed groundwater pumping. Pumping of the wells would have the potential to result in groundwater level reductions as time progresses.. Refer to Section 3.2 Hydrology and Water Quality, and Section 3.4 Biological Resources for further analysis and mitigation associated with minimizing effects to regional wetland-dependent vegetation. A Hydrologic Monitoring and Mitigation Plan (mitigation measure Hydrology-1) as well as mitigation to recalibrate the groundwater model and the pumping rate and duration after 5 years would be implemented to minimize impacts at Little Lake. The proposed project would not have a significant impact on vegetation and the enhancement program to maintain the existing wetland and open water habitats. Implementation of mitigation would minimize effects to Little Lake and its aesthetic value to less than significant levels. (FEIR, p. 3.9-8.)

d. Decommissioning

Decommissioning would not impact the larger valley area and would not impact vegetation or wetlands in the larger valley area. Decommissioning would have no impact on the scenic quality of the region by indirect effects to regional water-dependent vegetation and wetlands. (FEIR, p. 3.9-11.)

3. Potential Impact 3.9-3: The potential to create a new source of substantial light or glare, which would adversely affect neighboring properties or the nighttime sky in the area

a. Overview of Impacts

The project would not result in substantial light or glare. Construction would occur during daytime hours. Facilities on the Hay Ranch property and at the high point tank would have emergency lighting only. Impacts associated with light and glare that could impact neighbors or the nighttime sky are not expected. (FEIR, p. 3.9-11.)

b. Construction

Construction of the pipeline and other structures would only occur during daylight hours. No lighting would be required. All pipeline segments would be painted a desert almond tan color prior to arriving at the project site to avoid causing glare. Impacts would be less than significant and mitigation would not be required. (FEIR, p. 3.9-11.)

c. Operation and Maintenance

Lighting would be required for security and nighttime emergency maintenance only. Normal security lighting would be of a low sodium pink/yellow/ orange hue and would be on motion sensors with timers. The lights would be located at the lift pump station mechanical control building, the substation mechanical and electrical equipment room, and the high point tank. The emergency lighting would be high sodium lights that are turned on and off with a manual switch when required for nighttime maintenance in emergencies. All lights would have baffles and would be shielded downward or toward temporary maintenance areas only. Light would not spill onto nearby properties or roadways or into the nighttime sky. All buildings, tanks, and pipeline would be painted, as described previously, to minimize glare. Impacts would be less than significant and mitigation would not be required. (FEIR, p. 3.9-11.)

d. Decommissioning

Decommissioning would occur during daylight hours and would not result in a new source of substantial light or glare. (FEIR, p. 3.9-11.)

4. Findings

a. **With the implementation of mitigation measures, the Project will have a less than significant impact on aesthetics. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan and the Hydrological Mitigation and Monitoring Plan. These mitigation measures specifically address the**

potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.

- **Aesthetics-1: Temporary cloth fencing, in a desert sand or neutral color, shall be used to screen equipment and material piles during construction activities on the Hay Ranch property.**
- **Biology-1: Daily wash down of all project vehicles shall take place.**
- **Biology-2: Pre-construction tortoise surveys shall be prepared.**
- **Biology-3: Tortoise fencing and project limits fencing shall be installed.**
- **Biology-4: Tortoise monitoring during construction shall take place.**
- **Biology-5: Training of construction workers on tortoise and ground squirrel information shall be held.**
- **Biology-6: Other construction measures for the protection of desert tortoise shall be implemented.**
- **Biology-7: Replacement land for desert tortoise shall be purchased.**
- **Biology-8: Construction and all other activities shall avoid the crowned muilla plant, and a restoration plan shall be implemented if avoidance proves infeasible.**
- **Biology-9: Survey for Burrowing Owls shall be prepared prior to ground disturbing activities.**
- **Hydrology-1: The Hydrological Monitoring & Mitigation Program (HMMP) included in Appendix 1 of the FEIR shall be finalized and implemented.**
- **Hydrology-2: Groundwater wells located in Rose Valley, and which are affected by the project, will be monitored according to the provisions of the HMMP and such wells and/or equipment will be modified as necessary to allow such wells to function at current levels.**
- **Hydrology-3: Monitoring and data collection shall occur at a series of monitoring wells established by the project for that purpose, and drawdown trigger threshold levels shall be established for each such well in order to protect Rose Valley groundwater supplies. Monitoring shall occur at a frequency sufficient to detect important changes and trends in water levels.**
- **Hydrology-4: Pumping shall cease or decrease, at the direction of the Inyo County Water Department, if trigger levels are exceeded at two or more of the monitoring wells by at least 0.25 feet, or if a maximum acceptable drawdown level is exceeded in any monitoring point.**

Findings per State CEQA Guidelines Section 15091:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

Construction of the proposed project components on the Hay Ranch property would occur within the middle ground of the viewshed from US 395 and would involve brightly colored construction equipment, and tall equipment such as cranes. Impacts to the scenic quality of the viewshed could be potentially significant. Mitigation requiring screening of construction activities on the Hay Ranch site with cloth construction fencing would reduce impacts to less than significant levels.

Operation of the proposed project could lower the water table in Rose Valley. The vast majority of vegetation in the Rose Valley does not rely on groundwater as a water source and would not be impacted. Water dependent vegetation is limited to a few areas, including Little Lake Ranch. Mitigation defined for Hydrology and Water Quality above includes the implementation of a Hydrologic Monitoring and Mitigation Plan, as well as adjusting pumping rates and durations prior to exceeding triggers levels for groundwater drawdown that could negatively impact water dependent vegetation throughout the valley and at Little Lake.

G. HAZARDS AND HAZARDOUS MATERIALS

1. Potential Impact 3.10-1: The potential to expose individuals or structures to a significant risk of loss due to wildfires

a. Overview of Impacts

The project location is in a moderate fire hazard severity zone, as defined by CAL FIRE. Implementation of mitigation measures would reduce impacts to less than significant levels.

b. Construction

Wells. The wells on the Hay Ranch property already exist. The only construction activity related to the wells would be installing down hole shaft driven pumps. No welding or fire would be used for the installation of the pumps. Construction workers could cause wildfire by dropping cigarettes into dry vegetation or smoking near combustible materials. The following mitigation measures would reduce impacts to less than significant levels. (FEIR, p. 3.10-4.)

Hazards-1: Smoking shall be prohibited except in designated areas, at least 20 feet from any combustible chemicals/materials and off of dry vegetation. (FEIR, p. 3.10-4.)

Hazards-2: All heavy equipment and rubber-tired construction vehicles shall be equipped with fire extinguishers. All rubber-tired construction vehicles shall be equipped with appropriate fire fighting equipment, such as shovels and axes or pulaskis, to aid in the prevention or spread of fires. All construction equipment shall be equipped with the appropriate spark arrestors and functioning mufflers. (FEIR, p. 3.10-4.)

Lift Pump Station, Substation and Associated Facilities, Tanks, and Pipeline. Construction of the lift pump station, substation and associated facilities, tanks, and pipeline could require use of tools or equipment such as soldering equipment or blowtorches, which would present a fire threat if the work was performed near dry grass or other natural fuels. Construction workers could pose a fire hazard from smoking cigarettes near dry vegetation or combustible chemicals.
Implementation of the following mitigation measure and mitigation measures Hazards-1 and -2 would reduce impacts to less than significant levels. (FEIR, p. 3.10-4.)
Furthermore, no blasting is anticipated to be required during the construction phase of the Project, and none would be necessary during Project operations. In the unlikely event some blasting is required, it would be only on a short segment of pipeline located in a rocky area, but this section is not near any roadways or residential areas. Therefore no impacts associated with blasting will occur. Finally, temporary, California Air Resource Board certified, diesel-powered generators will be used temporarily during construction and to operate the well pumps until the SCE substation is built. These generators are contained systems that will be operated in accordance with standard instructions and diesel fuel will not be stored on site. Accordingly, no impacts due to hazards will occur due to the generators.

Hazards-3: Soldering or welding shall not be performed within 15 feet of dry grass or other natural fuels. An extinguisher shall be available at the project site at all times when welding or performing other activities that can generate sparks. (FEIR, p. 3.10-4.)

c. Operation and Maintenance

Wells. Operation and maintenance of the wells on the Hay Ranch property and monitoring wells in the Rose Valley would not require welding or use of combustible materials. The wells would require periodic maintenance. Workers could cause a fire threat due to smoking near dry vegetation or combustible materials. Mitigation measures Hazards-1 and -2 would be implemented to reduce impacts to less than significant levels. (FEIR, p. 3.10-4.)

Lift Pump Station, Tanks, and Pipeline. Operation of the lift pump station, tanks, and pipeline would be unstaffed and would not have any

components that would pose a fire hazard. The booster pumps would be located on a concrete pad. Maintenance activities at these structures could require use of tools or equipment such as soldering equipment or blowtorches, which would present a fire threat if the work was performed near dry grass or other natural fuels. Maintenance workers would pose a fire hazard from smoking cigarettes near dry vegetation or combustible chemicals. Implementation mitigation measures Hazards-1, -2, and -3 would reduce impacts to less than significant levels. (FEIR, p. 3.10-5.)

Substation and Associated Facilities. Operation of the substation and its associated facilities would comply with CPUC General Order 95 and the CCR to mitigate fire hazards. The electrical equipment would comply with regulations for fire protection and any impacts would be considered less than significant. The substation would include personal safety equipment that could be mobilized during emergencies at the substation. The project site is located in a sparsely populated area so the threat to surrounding residences and businesses is minimal. The impact would be less than significant. (FEIR, p. 3.10-5.)

Maintenance of the substation and its associated facilities could pose a fire hazard. Maintenance activities at these structures could require use of tools or equipment such as soldering equipment or blowtorches, which would present a fire threat if the work was performed near dry grass or other natural fuels. Project workers would pose a fire hazard from smoking cigarettes near dry vegetation or combustible chemicals. Implementation of mitigation measures Hazards-1, -2, and -3 would reduce impacts to less than significant levels. (FEIR, p. 3.10-5.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. The substation would not be decommissioned since it would also provide local service. Mitigation measures Hazards-1 and -2 prevent smoking near combustible areas and materials and require fire safety equipment. Implementation of these measures would reduce any impacts to less than significant levels. (FEIR, p. 3.10-5.)

2. Potential Impact 3.10-2: The potential to expose individuals to or compromise the environment through emission of or exposure to hazardous materials, substances, or wastes

a. Overview of Impacts

The proposed project could expose individuals and the environment to hazardous materials, substances, and wastes. Truck traffic during construction and normal maintenance could lead to spillage of diesel fuel or other hydrocarbons. Hazardous materials required for the operation and maintenance of the substation and pipeline facility, such as oils, lubricants, paints, etc. could be upset or otherwise released into the environment. These materials have relatively low toxicity; however, implementation of appropriate mitigation, including requiring a Health and

Safety Plan and implementation of a Storm Water Pollution Prevention Plan (SWPPP), would reduce potential impacts to less than significant levels. (FEIR, p. 3.10-5.)

There are no schools or other residential or commercial sites within 0.25 miles of the project site or pipeline corridor. The area around the substation and proposed pipeline route is sparsely populated with few people residing or working in the area that could be exposed to hazardous materials. (FEIR, p. 3.10-5.)

b. Construction

Wells. The wells on the Hay Ranch property are currently existing operational wells. The only construction activity related to the wells would be installing down hole shaft driven pumps. Installation of these pumps would require lubricants, oils, etc. Workers could be exposed to low levels of these chemicals and hazardous materials. Implementation of the following mitigation measure would reduce impacts related to exposure to hazardous materials to less than significant levels. (FEIR, p. 3.10-6.)

Hazards-4: A site-specific Health and Safety Plan shall be prepared to minimize the exposure of workers and the public to potentially hazardous materials during all phases of project construction. The plan shall include, but will not be limited to, appropriate personal protection equipment to be worn, decontamination methods, spill control measures, and emergency preparedness and response. All site workers will be required to attend a mandatory safety meeting to overview the plan before commencing work. (FEIR, p. 3.10-6.)

Hazardous and non-hazardous materials used in installation of the pumps would generate waste, which could compromise the environment if not properly disposed; however, the applicant is bound by State and federal regulations for the disposal of hazardous or non-hazardous waste, as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations. (FEIR, p. 3.10-6.)

Lift Pump Station, Substation and Associated Facilities, Tanks, and Pipeline. Construction of the lift pump station, substation and associated facilities, tanks, and pipeline would involve the use of gasoline, diesel fuel, oil, and lubricants. Trucks would be required to bring equipment and materials to the project site. Workers would be exposed to small volumes of these low toxicity substances; however, mitigation measure Hazards-4 would reduce impacts to less than significant levels. (FEIR, p. 3.10-6.)

The potential for compromising the environment from exposure to fuels and equipment-related hazardous materials would be very low because of the small volume and low toxicity of these materials. The most likely incidents using these materials would involve potential spills and drips of gasoline, diesel fuel, oil, hydraulic fluid, and lubricants from vehicles or other machinery. There would also be a potential for accidental release of paints, solvents, adhesives, or cleaning chemicals during construction. The project applicant would be required to implement a SWPPP, which

would reduce any impacts to less than significant levels. The SWPPP is discussed further in section 3.2 Hydrology and Water Quality. (FEIR, p. 3.10-6.)

Hazardous and non-hazardous materials used in the construction of these components would generate waste, which would be disposed of in accordance with all applicable State and federal laws so as not to have an impact on the environment. (FEIR, p. 3.10-6.)

c. Operation and Maintenance

Wells, Lift Pump Station, Tanks, and Pipeline. Operation of these project components would not require any hazardous materials or substances and would not generate any waste. Maintenance of the components could involve the use of gasoline, diesel fuel, oil, and lubricants. Workers would be exposed to such chemicals and hazardous materials. Implementation of Mitigation measure Hazards-4 would reduce impacts related to exposure to hazardous materials to less than significant levels. Maintenance could also involve spills and generate waste. Implementation of pollution control measures as specified in the SWPPP would reduce impacts to the environment to less than significant levels. (FEIR, p. 3.10-6.)

Substation and Associated Facilities. Operation of the substation and its associated facilities would comply with CPUC General Order 95 and the CCR, as stated in the project description. Operation would not require routine personnel use of any hazardous materials or substances. Waste would be limited to employee-generated waste by occasional maintenance staff. This waste would be removed by the responsible maintenance personnel upon leaving the facilities. Impacts would be considered less than significant and mitigation would not be required. (FEIR, p. 3.10-6.)

The proposed substation would have two 5-MVA transformers. The transformers would contain transformer oil. The oils would be utilized and stored in compliance with the requirements of the Inyo County Environmental Health Services Department and Inyo County Building and Safety Department. The substation would be surrounded by a locked 8-foot chain link and razor wire fencing, and a sign would be posted to keep out intruders. Signage would be placed at the facility for notification in case of emergency or other hazardous accidents related to the substation. The transformers could leak or spill if they are damaged during a seismic event, fire, or other unforeseen incident. The following mitigation measure would be implemented to reduce impacts to less than significant levels. (FEIR, p. 3.10-7.)

Hazards-5: Containment measures for the substation and its associated facilities shall be described in a Spill Prevention, Control, and Countermeasure (SPCC) Plan. The SPCC plan shall be prepared by Southern California Edison (SCE) upon finalization of the substation design and shall be submitted to Inyo County for review. The SPCC would include standard SCE prevention measures. (FEIR, p. 3.10-7.)

Maintenance of the substation and associated facilities could involve the use of gasoline, diesel fuel, oil, and lubricants. Workers could be exposed to

such chemicals and hazardous materials. Implementation of mitigation measure Hazards-4 would reduce impacts related to exposure to hazardous materials to less than significant levels. Maintenance could also involve spills and generate waste. Implementation of the SWPPP would reduce impacts to the environment to less than significant levels. (FEIR, p. 3.10-7.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. No hazardous materials or wastes would be exposed. The substation and its associated facilities would remain in place. Impacts would not occur. (FEIR, p. 3.10-7.)

3. <u>Findings</u>

a. **With the implementation of mitigation measures, the Project will have a less than significant impact on hazards and hazardous materials. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan and the Hydrological Mitigation and Monitoring Plan. These mitigation measures specifically address the potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.**

- **<u>Hazards-1:</u> Smoking shall be prohibited except in designated areas, at least 20 feet from any combustible chemicals/materials and off of dry vegetation.**
- **<u>Hazards-2:</u> All heavy equipment and construction vehicles shall be equipped with fire extinguishers; all construction vehicles shall be equipped with appropriate fire fighting equipment; all construction equipment shall be equipped with spark arrestors and functioning mufflers.**
- **<u>Hazards-3:</u> Soldering or welding shall not be performed within 15 feet of dry grass or other natural fuels and fire extinguishers shall be available at all times.**
- **<u>Hazards-4:</u> A site-specific Health & Safety Plan shall be prepared that will minimize exposure of humans to potentially hazardous materials, and all workers shall be required to attend a safety meeting to overview the plan before starting employment.**
- **<u>Hazards-5:</u> A Spill Prevention, Control, and Countermeasure (SPCC) Plan shall be prepared by Southern California Edison upon finalization of the substation design and shall be submitted to Inyo County for review.**

<u>Findings per State CEQA Guidelines Section 15091</u>:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

The project area is typically dry and susceptible to wildfire. The project involves activities and equipment that could cause a fire, such as welding, a faulty spark arrestor on a vehicle, or employee smoking. Mitigation has been defined to prevent these activities from leading to a wildfire and reduce impacts to less than significant levels.

Hazardous materials are required for the operation and maintenance of the substation and pipeline facility. The materials may include oils, lubricants, paints, etc. that could be upset or otherwise released into the environment. These materials have relatively low toxicity; however, implementation of appropriate mitigation, including requiring a Health and Safety Plan and implementation of a Storm Water Pollution Prevention Plan (SWPPP), would reduce potential impacts to less than significant levels.

Transformers within the substation would contain transformer oil, which could leak or spill in an unforeseen event. Mitigation requiring a Spill Prevention, Control, and Countermeasure (SPCC) Plan from Southern California Edison (SCE) would reduce potentially significant impacts to less than significant levels.

H. AIR QUALITY

1. Potential Impact 3.13-1: The Potential To Conflict With Or Obstruct Implementation Of The State Implementation Plan For The Coso Junction PM10 Planning Area

a. Overview of Impacts

The project would not conflict with or obstruct implementation of the State Implementation Plan for the Coso Junction PM10 Planning Area. A project is deemed inconsistent with an air quality plan or SIP if it would result in population and/or employment growth that exceed growth estimates included in the applicable air quality plan. Here, and as further discussed in the EIR, the applicable air quality plans include the State Implementation Plan for the Coso Junction PM_{10} Planning Area, the air quality

regulations of the Great Basin Unified Air Pollution Control District ("GBUAPCD"), and the County of Inyo's General Plan. (EIR p. 3.13-4.) Additionally, the proposed project would not result in population or employment growth and would not result in a conflict with the State Implementation Plan. (FEIR, p. 3.13-5.)

b. Construction

Construction of the proposed project would require a limited number of workers (less than 40); however, these workers would come from the local population and would not induce growth. Construction would not obstruct implementation of the SIP. (FEIR, p. 3.13-5.) Additionally, the Project will be consistent with applicable GBUAPCD Rules. (See FEIR pp. 3.13-4 [discussing Rule 401], 3.13-7 [implementing Rule 401].) Accordingly, the Project will not exceed any population and/or employment projections and would be consistent with applicable air quality plans.

c. Operation and Maintenance

Project operation involves pumping water from the Hay Ranch property to the existing Coso geothermal field 9 miles to the east on CLNAWS. The proposed project would not result in either an increase in the general population or in the number of employees and staff in the area. No new staff would be required to operate the proposed project. It would be operated by existing COC staff.

The proposed project would provide make-up water for the geothermal plants at CLNAWS. The project would supply water to the geothermal reservoir for the permitted operational life of the plants. The need for make-up water was foreseen and accounted for in the original permitting of the plant; therefore, the proposed project would not result in unforeseen electrical generation that could induce growth.

The proposed project would be consistent with the local General Plan and the Regional Growth Management Plan; it is not regionally significant and would be consistent with the SIP. No adverse impact to the implementation of the SIP would result from project operation and maintenance. (FEIR, p. 3.13-6.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. Decommissioning would not induce growth and would not impact the SIP or other air quality plans. It would be a temporary process that would not alter or induce migration to the project area. (FEIR, p. 3.13-6.)

2. Potential Impact 3.13-2: The potential to violate air quality standards or contribute substantially to air quality violations related to fugitive dust (PM10)

a. Overview of Impacts

The use of heavy equipment for construction of the project would result in minor emissions of criteria pollutants. Ground disturbance and access over unpaved roads could result in fugitive dust (PM10) emissions. Use of equipment would generate small amounts of other criteria pollutants. Implementation of appropriate mitigation measures would reduce any impacts to less than significant levels. (FEIR, p. 3.13-6.)

b. Construction

Wells. The two wells proposed for pumping already exist on the Hay Ranch property. The wells would require installation of down hole shaft-driven pumps. This work would not require any ground disturbance that would generate fugitive dust. (FEIR, p. 3.13-6.)

Equipment required for the installation of these pumps would have some criteria pollutant air emissions. The emissions would be small due to the limited equipment and limited time that it would take to install the pumps (approximately 1 day for each).The GBUAPCD does not have numerical thresholds for criteria pollutants to determine the significance of potential impacts associated with the proposed project. The GBUAPCD considers short-term construction exhaust emissions to be less than significant. (FEIR, p. 3.13-6.)

Lift Pump Station, Substation and Associated Facilities, Tanks, and Pipeline. Construction of these components would require approximately 60.5 acres of soils to be disturbed. Disturbance of soil could increase $_{PM10}$ levels in the project area. Dust emissions would be temporary in nature, lasting during the construction period of about 110 days. Construction vehicles driving on unpaved roads could also generate fugitive dust. (FEIR, p. 3.13-6.)

Quantitative values for dust emissions could vary significantly depending on soil moisture, silt content, wind speed, construction density, and other factors. Pursuant to GBUAPCD policy, fugitive dust emissions from construction activities do not need to be quantified to make a significance determination. The District maintains that all fugitive dust emissions from construction activities represent a potentially significant, but mitigable impact. Construction-related dust is addressed in District's Rule 400 and 401 (as stated previously). (FEIR, p. 3.13-7.)

Additionally, estimates of emissions associated with construction and operation of the Project were calculated by Dudek Engineering and Environmental using the URBEMIS 2007 Air Quality Model (Version 9.2.4) and submitted to the County by Coso. URBEMIS 2007 estimates maximum daily emissions during four construction periods ranging from 20 days to 50 days in

duration. Model inputs were modified to reflect construction details provided in the Project description, accounting for emissions associated with pipeline, electrical substation, and other ancillary construction activities. The results of this analysis confirm that emissions will not be significant:

Table 4.1-1
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS[1]

	Unmitigated Emissions (lbs/day)					
	ROG	***NO_x***	***CO***	***SO_2***	***Total PM_{10}***	***Total $PM_{2.5}$***
Construction Period 1 (50 day)	**7.05**	**58.85**	23.41	0.00	**2.86**	**2.63**
Construction Period 2 (20 day)	2.59	22.60	9.06	0.00	1.05	0.97
Construction Period 3 (50 day)	4.17	35.89	13.56	0.00	1.69	1.55
Construction Period 4 (30 day)	6.81	55.02	**25.06**	0.00	2.77	2.55
SOURCE: URBEMIS 2007 version 9.2.4 , See Appendix A for calculations						

In order to ensure compliance with the District's Rule 400 and 401 and prevent a significant effect from violation of District rules, the following measure would be implemented during construction of the lift pump station, substation and associated facilities, pipeline, and tanks. (FEIR, p. 3.13-7.)

> **Air Quality-1:** Prior to excavation for any component of the project, any dry soils shall be watered. Soils shall be monitored and continue to be watered throughout the project if dust begins to generate. Other measures that shall be implemented to minimize dust to meet District Rule 400 and 401 include:
>
> 1. Use, where possible, of water or chemicals for control of dust in the grading of roads or the clearing of land.
> 2. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate contamination methods shall be employed during such handling operations.
> 3. Use of water, chemicals, chuting, venting, or other precautions to prevent particulate matter from becoming airborne in handling dusty materials to open stockpiles and mobile equipment. All active construction and disturbed areas should be watered at least twice daily.
> 4. Maintenance of roadways in a clean condition.
> 5. Halting all dust-generating activities if wind gusts exceed 25 mph.

[1] The length of each construction period is approximate, and each construction period may slightly overlap the preceding or following period. Total construction time is anticipated to be approximately four months/110 days. (Draft EIR p. 3.13-6.)

6. Covering all trucks hauling soil, sand and other loose materials or requiring all trucks to maintain at least two feet of freeboard.
7. Applying water three times daily, or applying (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
8. Hydroseeding or applying (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten calendar days or more).
9. Enclosing, covering, watering twice daily or applying (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc). (FEIR, p. 3.13-7.)

Air Quality-2: Any project personnel, during both construction and operation, who is required to drive vehicles on unpaved roads, shall obey a speed limit of 25 miles per hour (mph). (FEIR, p. 3.13-7.)

Construction of the lift pump station, substation and associated facilities, tanks, and pipeline would require the use of some equipment that would emit low levels of criteria pollutants. The GBUAPCD considers short-term construction exhaust emissions to be less than significant. Mitigation measures to mitigate construction equipment exhaust emissions are not required.

c. Operation and Maintenance

Operation of the project would result in limited emissions from vehicles used to transport maintenance workers. Maintenance and site surveillance visits would occur two to three times a week, typically with a single vehicle. Visits would not create significant levels of emissions. (FEIR, p. 3.13-7.)

Maintenance of the system could involve some excavation and ground disturbance, which could result in $_{PM10}$ emissions. Implementation of mitigation measure Air Quality-1 would reduce impacts to less than significant levels. (FEIR, p. 3.13-7.)

Groundwater pumping could result in some groundwater drawdown in Rose Valley and at Little Lake after a number of years, as described in Section 3.2 Hydrology and Water Quality. Concern has been expressed that reductions in surface waters would increase soil erosion and dust generation in Rose Valley. The majority of Rose Valley is occupied by drought resistant plants that do not depend on the water table, since the water table varies from over 240 feet below ground surface to 40 feet below ground surface just north of Little Lake. These areas would be largely unaffected and would maintain current vegetation. (FEIR, p. 3.13-8.)

Water dependent vegetation is located in a few areas throughout the valley, including Portuguese Bench, Rose Spring, and Little Lake. Rose Spring and Portuguese Bench are located at elevations higher than the proposed project and are not

affected by groundwater withdrawal at Hay Ranch. Little Lake water level and vegetation could be impacted by groundwater drawdown; however, effects are mitigated by mitigation Hydrology-1 through Hydrology-3 (Section 3.2 Hydrology and Water Quality) to monitor groundwater drawdown, with contingency plans, to prevent surface water impacts from groundwater drawdown. These measures would minimize water and vegetation changes at Little Lake, which would prevent drying of the lake and vegetation that could generate more dust. (FEIR, p. 3.13-8.)

During the first year of operation (up to 12 months), electrical power to operate the water pumps, area lighting, and instrumentation would provided by two 1,500 kilowatt diesel-powered portable generators, each operated at up to 75 percent of rated capacity for up to 18 hours per day. These generators would only be used in the short-term until the electrical substation was constructed and connected to Southern California Edison's existing power lines. The generators would be obtained from an equipment rental company, meet at least Tier 1 state and federal emission standards, and be registered under the California Air Resources Board's (CARB) Statewide Portable Equipment Registration Program. The emissions from the two portable generators were estimated using the URBEMIS2007 program (see Equipment Exhaust Emissions above). As indicated below, the NO2 concentrations from these generators would not cause or contribute to an exceedance of the California Ambient Air Quality Standards, and the impact would be less than significant.

Table 4.1-1
AMBIENT AIR QUALITY MODELING RESULTS

Averaging Period	Background Concentration ppm	Modeled Impact		Impact plus Background ppm	CAAQS ppm
		$\mu g/m^3$	Ppm		
1-Hour	0.055	112.42	0.06	0.12	0.18
Annual	0.005	8.43	0.004	0.009	0.030

1. Background concentration: highest values for 2005-2007, Trona monitoring station.
2. NO_X impact modeled for a single engine-generator. The modeled impacts at the point of maximum impact (2999 meters from the source) were doubled for two units operating concurrently.

d. Decommissioning

Decommissioning would involve removing equipment. The pipeline would be abandoned in place and would not require surface work that could generate dust. Removal of the tanks, pumps, buildings, etc. on the Hay Ranch property and CLNAWS would be a temporary activity and would not cause significant fugitive dust. The applicant would obtain the appropriate permits for building removal at the time of decommissioning. Impacts would be less than significant. (FEIR, p. 3.13-8.)

3. Potential Impact 3.13-3: The potential to expose sensitive receptors to substantial pollutant concentrations

a. Overview of Impacts

The proposed project would emit low levels of criteria pollutants and fugitive dust during the construction, operation and maintenance phases. Sensitive receptors in the project vicinity include locals of Coso Junction and Dunmovin, drivers on US Highway 395 and Gill Station Coso Road, and workers on the proposed project. Impacts would be considered less than significant with implementation of appropriate mitigation. (FEIR, p. 3.13-8.)

b. Construction

The proposed project would result in temporary and relatively small amounts of air emissions and fugitive dust related to construction. Mitigation measures Air Quality-1 and Air Quality-2 would be implemented to reduce any impacts related to fugitive dust to less than significant levels. Vehicle and equipment emissions would be minor and adhere to federal and State standards. Sensitive receptors that may be affected by these construction emissions would be the workers related to the construction of the project. Exposure would be considered minor and would not be any greater than any other previous construction project in the region. Impacts would be less than significant. (FEIR, p. 3.13-8.)

c. Operation and Maintenance

The proposed project operation would not involve ground disturbance except for required maintenance on a buried portion of the pipeline. Excavation could generate fugitive dust. Mitigation measures Air Quality-1 and -2 would be implemented to reduce impacts related to fugitive dust to less than significant levels. (FEIR, p. 3.13-8.)

Operation and maintenance would require a small fleet of vehicles (usually one to two). Driving over unpaved roads generates fugitive dust; however, this is considerably less than the average traffic on Gill Station Coso Road, which is a partially unpaved road. Impacts would be less than significant. (FEIR, p. 3.13-9.)

Operation of the project components, including but not limited to the substation and well pumps, would emit minor amounts of criteria pollutants. The substation and other project components are planned to be unmanned facilities; workers would not be present except for inspections and maintenance. Pollutant concentrations would be minimal. Any impacts would be considered less than significant. (FEIR, p. 3.13-9.)

d. Decommissioning

Decommissioning would involve removing equipment. The pipeline would be abandoned in place and would not require surface work that could

generate dust. Removal of the tanks, pumps, buildings, etc. on the Hay Ranch property and CLNAWS would be a temporary activity and would not cause significant fugitive dust. Sensitive receptors would be residences near Coso Junction and at Dunmovin. These residences would only experience a potential for minor and temporary emissions of fugitive dust. Impacts would be less than significant. (FEIR, p. 3.13-9.)

4. Potential Impact 3.13-4: The potential to create objectionable odors affecting a substantial number of people

a. Overview of Impacts

The project would result in the generation of minor odors from construction equipment and vehicles. These odors would not be significant. (FEIR, p. 3.13-9.)

b. Construction

Fuel exhaust and paint-type finishes could cause objectionable odors in the immediate vicinity of construction and demolition equipment and activities. The nearest receptors to the project sites are the residences located approximately 3,696 feet (Graham Road) and 10,031 feet (Gill Station Coso Road) from Hay Ranch. Odors would not be significant at the nearest residences. (FEIR, p. 3.13-9.)

Exposure of construction personnel to diesel and other forms of construction emissions is regulated by the California Occupational Health and Safety Administration and not a subject for this EIR. No mitigation is required. (FEIR, p. 3.13-9.)

c. Operation and Maintenance

Operation of the project would not generate objectionable odors. The well operations and maintenance would not generate odors or significant levels of airborne pollutants. Vehicle trips required for the project's operation and maintenance would be negligibly higher than current conditions and would not be significant. (FEIR, p. 3.13-9.)

d. Decommissioning

Decommissioning would involve removing equipment and abandoning the pipeline in place. These activities would not generate significant odors with a potential to affect a substantial number of people. Impacts would be less than significant. (FEIR, p. 3.13-9.)

5. Findings

a. **With the implementation of mitigation measures, the**

Project will have a less than significant impact on air quality. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan and the Hydrological Mitigation and Monitoring Plan. These mitigation measures specifically address the potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.

- **Air Quality-1: Prior to any excavation for the project, any dry soils shall be watered; soils shall continue to be monitored and watered throughout the project; and other measures to minimize dust to meet District Rule 400 and 401 may be used.**
- **Air Quality-2: Any project personnel driving on unpaved roads shall obey a speed limit of 25 miles per hour.**
- **Hydrology-1: The Hydrological Monitoring & Mitigation Program (HMMP) included in Appendix 1 of the FEIR shall be finalized and implemented.**
- **Hydrology-2: Groundwater wells located in Rose Valley, and which are affected by the project, will be monitored according to the provisions of the HMMP and such wells and/or equipment will be modified as necessary to allow such wells to function at current levels.**
- **Hydrology-3: Monitoring and data collection shall occur at a series of monitoring wells established by the project for that purpose, and drawdown trigger threshold levels shall be established for each such well in order to protect Rose Valley groundwater supplies. Monitoring shall occur at a frequency sufficient to detect important changes and trends in water levels.**

Findings per State CEQA Guidelines Section 15091:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

The use of heavy equipment for construction of the project would result in minor emissions of criteria pollutants. Ground disturbance and access over unpaved roads would result in fugitive dust (PM10) emissions. The Great Basin Unified Air Pollution Control District (GBUAPCD) has rules and regulations pertaining to fugitive dust control for construction activities. With the implementation of mitigation in accordance with the District's rules and regulations, impacts from fugitive dust emissions would be reduced to less than significant levels.

I. TRANSPORTATION AND TRAFFIC

1. Potential Impact 3.14-1: The potential to cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system or exceed a level of service "C" as required by the County

a. Overview of Impacts

The proposed project would require an increase in vehicles on roads in the project vicinity, mostly due to construction vehicles accessing the project area. Vehicles could include large trucks transporting equipment such as backhoes, cranes, and excavators; water trucks and dump trucks; and cars used by construction workers. (FEIR, p. 3.14-6.)

The highways and roads in the vicinity have low levels of traffic and do not experience congestion. A substantial increase in traffic or a resulting poor LOS rating would not occur from construction of the proposed project. (FEIR, p. 3.14-6.)

Traffic congestion could occur along Gill Station Coso Road if the roadway were blocked during construction, particularly during peak travel hours to CLNAWS or the pumice mines accessed off of Gill Station Coso Road. Mitigation would be implemented and reduce potential impacts to less than significant levels. (FEIR, p. 3.14-6.)

b. Construction

Construction vehicles would add a temporary increase to traffic on US 395 and Gill Station Coso Road. The construction phase of the proposed project would require vehicle trips to the project area. US 395 has an LOS "A," as previously described. Construction related vehicles traveling to the project sites on these highways during construction would be limited to a maximum of approximately five at any given time. Construction-related vehicles and equipment may travel an average of twice per day along the associated roads. The limited number of construction vehicles and travel time along the roads would not result in a substantial increase in traffic beyond the existing traffic load. (FEIR, p. 3.14-6.)

Local highways are not congested or prone to traffic delays and have the highest LOS rating possible. Slow moving construction vehicles are not expected to cause traffic delays due to the low level of travel on the highway in the project vicinity. (FEIR, p. 3.14-7.)

Vehicles traveling on Gill Station Coso Road are generally limited to CLNAWS personnel, Coso geothermal project employees or vendors, those accessing pumice mines in the Coso Range, or Native American groups visiting the Coso Hot Springs. Significant traffic delays and poor LOS ratings are not expected during the construction of the project. Minor traffic delays could occur during construction of the pipeline if construction completely blocked the road. The following mitigation measure would be implemented to reduce impacts to less than significant levels. (FEIR, p. 3.14-7.)

Traffic-1: No construction activities that result in complete blockage of Gill Station Coso Road shall be allowed between the hours of 7 and 9 am and 3 and 5 pm. At other times of the day, traffic flow shall not be ceased for more than 30 minutes. Flagmen shall be utilized as necessary to direct traffic around construction sties during installation of the pipeline on Gill Station Coso Road. The applicant shall coordinate any road closures with the appropriate parties (i.e., fire department, the pumice mines, tribes, and CLNAWS). (FEIR, p. 3.14-7.)

c. Operation and Maintenance

Operation of the project would require vehicles trips for workers to perform maintenance. Maintenance would generally require no more than two vehicles at any given time and would not result in traffic congestion or lower the LOS on any surrounding highways. Maintenance vehicles could cause traffic along Gill Station Coso Road to stop and wait for access through a work zone if maintenance vehicles were turning around. Mitigation measure Traffic-1 would be implemented to reduce impacts to less than significant levels. (FEIR, p. 3.14-7.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. Vehicles required for decommissioning would be five or less, as with construction. Significant traffic delays and poor LOS ratings would not be expected during the decommissioning of the project. Impacts would be less than significant. (FEIR, p. 3.14-7.)

2. Potential Impact 3.14-2: The potential to substantially increase transportation-related hazards

a. Overview of Impacts

The proposed project would increase transportation-related hazards during the construction phase. Construction vehicles entering and exiting the Hay Ranch parcel directly from US 395 could cause a hazard because there is no marked road or intersection at this location. Mitigation would be implemented to reduce impacts to less than significant levels. (FEIR, p. 3.14-7.)

b. Construction

The majority of construction vehicles would access the project site along existing US 395 and Gill Station Coso Road. The intersection of Gill Station Coso Road with US 395 is controlled with turn pockets, acceleration-deceleration lanes, and a stop sign. No additional transportation hazards would result from the use of this intersection by construction vehicles. Trucks delivering heavy equipment would likely access the project site via the transmission line right of way north of Gill Station Coso Road. (FEIR, p. 3.14-7.)

Delivery and other trucks may access the site via a driveway off of US 395 along Rose Valley Ranch road. Use of this route is unlikely. Visibility in the project area is good; however, some vehicles would enter and exit the Hay Ranch property directly from or onto US 395. These locations are not controlled and trucks entering the highway at slow speeds could cause an increase in transportation hazards at that location. If this access point were to be used, the applicant would need to apply for an encroachment permit from Caltrans, District 9. (FEIR, p. 3.14-8.)

The application for the encroachment permit would require evaluation of the road and intersection to verify that it meets current standards and provides safe access (i.e., turning radius, storage length, etc.) for the type and number of vehicles that may use it. If turning radii are not adequate, mitigation measure Traffic-2 requires that the route not be used in order to prevent further environmental impacts associated with other improvements such as creating acceleration/deceleration lanes on Highway 395. If it is adequate, the encroachment permit may require refreshing the pavement and pavement markings at the intersection. Implementation of the following mitigation measure if Rose Valley Ranch Road is to be used for access during project construction would reduce impacts associated with access hazards to less than significant levels. (FEIR, p. 3.14-8.)

Traffic-2: This mitigation measure would only be necessary if Coso decides to use Rose Valley Ranch road to access the Hay Ranch parcel directly off of US 395. If Rose Valley road is determined to have an inadequate turning radius for the proposed project usage during the encroachment permit

application process, the route shall not be used. If the turning radius is adequate, all other recommendations in the encroachment permit shall be implemented. During project hours, construction signs shall be posted along northbound US 395 between Coso Junction and the northern extent of the Hay Ranch parcel. Signage shall indicate slower construction traffic ahead, and shall be installed in compliance with encroachment permits. (FEIR, p. 3.14-8.)

Construction vehicles would be located along Gill Station Coso Road during construction of the proposed pipeline and the 1.5 million gallon water tank. Vehicles would park on the shoulder and would not create any increased transportation-related hazards. (FEIR, p. 3.14-8.)

c. Operation and Maintenance

Operation of the project would require very few vehicles, generally consisting of maintenance vehicles. Maintenance vehicles would not enter the project directly from US 395, as some construction vehicles would. All maintenance vehicles would travel US 395 to Gill Station Coso Road to the project. Safety on the roadways would not be compromised from maintenance vehicles. If maintenance vehicles needed to access portions of the pipeline along Gill Station Coso Road, they would park on the shoulder and pose no increased hazards. Mitigation would not be required. (FEIR, p. 3.14-8.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. Vehicles required for decommissioning may access the Hay Ranch property via the entrance off of US 395. This area is not controlled and trucks entering the highway at slow speeds could cause an increase in transportation hazards. Implementation of Mitigation Measure Traffic-2 would reduce any impacts to less than significant levels. (FEIR, p. 3.14-8.)

3. Potential Impact 3.14-3: The potential to result in inadequate emergency access and/or parking capacity

a. Overview of Impacts

The Hay Ranch property and the pipeline corridor are rural and sparsely settled. There is sufficient room for emergency access and turnaround, employee parking and turnaround, and parking and turnaround for those who frequent the project vicinity. Emergency vehicles could be blocked during construction of the pipeline along Gill Station Coso Road. Mitigation would require that emergency vehicles are secured access. Impacts would be less than significant with implementation of this measure. (FEIR, p. 3.14-8.)

b. Construction

There is sufficient area for parking on the Hay Ranch property and along the shoulders of Gill Station Coso Road. Construction of the pipeline in Gill Station Coso Road could result in blockage of traffic. This could result in inadequate emergency access if the road were blocked for an extended period of time. Implementation of mitigation measure Traffic-3, would reduce impacts to less than significant levels. (FEIR, p. 3.14-8.)

Traffic-3: Emergency vehicle access shall be secured at all times along Gill Station Coso Road. The applicant shall provide the US Navy, the pumice mines, and the local fire department with construction schedules prior to project construction of the pipeline along Gill Station Coso Road. The applicant shall also provide maps identifying emergency access around active construction sites, including access around roadway trenching for the three pipeline crossings. (FEIR, p. 3.14-8.)

c. Operation and Maintenance

Vehicle use during project operation would generally be limited to maintenance vehicles. A 50 foot by 40 foot parking area would be located at the lift pump station and would be adequate for these vehicles. If pipeline maintenance is necessary along Gill Station Coso Road, mitigation measure Traffic-3 would be implemented as appropriate to minimize potential effects associated with blocking emergency vehicles. (FEIR, p. 3.14-9.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. The proposed pipeline would be left in place. Blocking emergency access along Gill Station Coso Road would not occur. Impacts would be less than significant. (FEIR, p. 3.14-9.)

4. Potential Impact 3.14-4: The potential to degrade US 395 or Gill Station Coso Road beyond pre-project conditions

a. Overview of Impacts

The project could cause damage to Gill Station Coso Road during construction and maintenance from the use of heavy equipment and construction in the roadway. Inyo County Department of Public Works has proposed a road improvement and widening project along Gill Station Coso Road. The applicant would coordinate with Inyo County Department of Public Works to assure that the proposed project does not conflict with Public Work's plans or degrade the road to a worse condition than pre-project conditions. (FEIR, p. 3.14-9.)

b. Construction

Wells, Pump Lift Station, and Substation and Associated Facilities. Construction of the facilities on the Hay Ranch property would not cause damage to Gill Station Coso Road. Construction equipment may access the site via US Highway 395 or via an unpaved access road off of Gill Station Coso Road. Equipment would only be transported to the site initially and would be removed from the site at the end of construction. The limited travel would not significantly impact Gill Station Coso Road or US 395. Many heavy trucks travel on both of these roads daily for operations at CLNAWS and the pumice mines. (FEIR, p. 3.14-9.)

Tanks. Construction of the tank on the Hay Ranch property would not impact Gill Station Coso Road. Materials for the tank would be brought onto the property via US 395 or Gill Station Coso Road and would be transported in a few trips. Construction of the 1.5 million gallon tank on CLNAWS lands would require the transport of materials on heavy trucks along Gill Station Coso Road. The weight limit for Gill Station Coso Road is the County standard weight limit of 80,000 pounds. The tank would be delivered in pieces and the trucks would not exceed the maximum weight limit. Tank construction would not have a significant impact on the road condition. (FEIR, p. 3.14-9.)

Pipeline. A portion of the proposed pipeline route (approximately 6.3 miles) would be located within the Gill Station Coso Road right-of-way. The pipeline would be buried alongside or in the road and construction of the pipeline would remove soil from the shoulder and some asphalt from the roadway. (FEIR, p. 3.14-9.)

Construction could damage the road to a condition worse than its pre-project condition. Implementation of the following mitigation measure would reduce impacts to less than significant levels:

Traffic-4: The applicant shall regrade and restore any areas of Gill Station Coso Road and US 395 and its ROW that are disturbed by construction including installation of the pipeline and high point tank. The applicant shall take photo documentation of the roadway conditions before construction and after construction and shall provide these photographs to County Public Works upon request. Construction of the pipeline would not impact US 395 because the pipeline would not be constructed near US 395. Delivery of pipeline would be on standard large trucks and would not damage US 395. (FEIR, p. 3.14-10.)

c. Operation and Maintenance

Project operation would not cause damage to any roads. Occasional maintenance vehicles would travel US 395 and Gill Station Coso Road, but would not exceed the capacity for these roadways. Gill Station Coso Road could be damaged if maintenance were required on a buried segment of the

proposed pipeline. Mitigation measure Traffic-4 would be implemented to reduce any impacts to less than significant levels. (FEIR, p. 3.14-10.)

d. Decommissioning

Decommissioning would involve removing or abandoning equipment in place. Heavy trucks and equipment would be limited and would not exceed the capacity for any roads. The potential to degrade any roads would be less than significant. (FEIR, p. 3.14-10.)

5. <u>Potential Impact 3.14-5: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks</u>

The proposed project would not cause impacts or changes in air traffic patterns during construction, operation, or decommissioning. All activities would be performed on the ground and would not include equipment over 50 feet tall (cranes would be less than 50 feet tall). The tallest project structure is the 1.5 million gallon storage tank at 28 feet tall. The project vicinity is within the Owens Military Operations Airspace, where general flight patterns are restricted and military aircrafts can fly at 200 feet above ground surface. No aspect of the construction or operation of the project would interfere with these flight patterns. The project would not interfere with flight patterns at the Inyokern Airport, located approximately 29 miles south of the project area. (FEIR, p. 3.14-10.)

6. <u>Findings</u>

a. **With the implementation of mitigation measures, the Project will have a less than significant impact on transportation and traffic. Project approval is conditioned on the performance of the following mitigation measures, which are set out in detail in the Mitigation Monitoring and Reporting Plan and the Hydrological Mitigation and Monitoring Plan. These mitigation measures specifically address the potential impacts identified in the FEIR and have been effectively designed to eliminate the potential for significant environmental impacts.**

- **Traffic-1: No construction activities that result in complete blockage of Gill Station Road shall be allowed between the hours of 7 and 9 a.m. and 3 and 5 p.m. At other times, traffic flow shall not be ceased for more than 30 minutes. Flagmen and coordination of other appropriate parties shall be utilized.**
- **Traffic-2: If Rose Valley Ranch Road is used to access the Hay Ranch parcel directly off U.S. Highway 395: during project hours, construction signs shall be posted along northbound US 395 between Coso Junction and the northern extent of the Hay Ranch parcel, indicating slower**

construction traffic ahead and shall be coordinated with Caltrans to meet any Caltrans requirements.

- **Traffic-3: Emergency vehicle access shall be secured at all times along Gill Station Road, and the applicant shall also provide the US Navy, the pumice mines, and the local fire department with construction schedules and maps identifying emergency access around active construction sites.**
- **Traffic-4: The applicant shall regrade and restore any areas of Gill Station Coso Road that are disturbed by construction activities, taking before and after photo documentation and providing them to County Public Work upon request.**

Findings per State CEQA Guidelines Section 15091:

(X) Changes or alternatives have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect (Subd. [a][1]).

( ) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (Subd. [a][2]).

( ) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the Final EIR (Subd. [a][3]).

Supporting Explanation:

Traffic congestion could occur along Gill Station Coso Road if the roadway were blocked during construction, particularly during peak hours of travel to CLNAWS or the pumice mines accessed by Gill Station Coso Road. Mitigation defined in the EIR prevents complete blockage of the road during commute hours and limits the traffic wait time during other hours of the day. This mitigation would reduce any potentially significant impacts related to traffic congestion to less than significant levels.

Construction trucks may access or leave the Hay Ranch property using an unmarked, unpaved road off of US 395 instead of using the protected turn lanes at the Gill Station Coso Road intersection with US 395. This could lead to potentially significant impacts regarding transportation hazards. Coso would be required to apply for and receive an encroachment permit from Caltrans prior to use of this road for construction activities on the Hay Ranch property. Application for an encroachment permit would require verification from Coso that the road meets current standards and is a safe access (i.e., turning radius, storage length, etc.) for the type and number of vehicles that may use it. Mitigation would ensure implementation of improvements to the road as necessary, and the placement of warning and construction signage in

accordance with standards developed by the California Department of Transportation (Caltrans), to reduce impacts to less than significant levels.

During pipeline construction along Gill Station Coso Road, emergency access could be impeded by project activities, constituting a potentially significant impact. Mitigation would require that emergency vehicle access be guaranteed at all times, which would reduce any potential impacts to less than significant levels.

Pipeline construction along Gill Station Coso Road could also damage the road to a condition worse than its pre-project condition. Mitigation would require the COC to restore any damaged areas of the road; impacts would then be less than significant.

IV. RESOLUTION REGARDING CUMULATIVE IMPACTS

The range of projects to be included in the cumulative analysis encompasses "past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those outside of the control of the agency." (State CEQA Guidelines, § 15130.) A cumulative effect is deemed significant if the Project's incremental contribution to a cumulative impact is "considerable." (Ibid.) A cumulative impact is not considered significant if the impact can be mitigated to below the level of significance, by providing improvements and/or contributing funds through fee-payment programs. The FEIR examines "reasonable options for mitigating or avoiding any significant cumulative effects of a Project" (State CEQA Guidelines, § 15130). A description of potential cumulatively considerable impacts is presented in Section 4 of the FEIR. In sum, no cumulatively considerable environmental impacts will result from the Project. (FEIR, p. 4-4.)

The FEIR also examines projects near the proposed Project and concludes that no cumulatively significant impacts will occur as a result of the proposed Project. Specifically, the FEIR discusses six projects in close geographic proximity to the proposed Project: 1) the South Haiwee Reservoir Leakage Recovery Project; 2) the Little Lake Habitat Restoration Project; 3) Gill Station Coso Road Improvements; 4) a proposed Crystal Geyser Plant; 5) Deep Rose Geothermal exploration; and 6) Improvements to US Highway 395. The FEIR explains that the proposed Project's impacts, when combined with existing conditions, past projects, and the impacts of these projects, will not result in any cumulative significant impacts.

V. RESOLUTION REGARDING SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

This Commission finds that the Project will cause no significant irreversible environmental changes and that mitigation measures proposed for the Project will minimize all impacts to a less than significant level. (FEIR, p. 4-13.)

VI. RESOLUTION REGARDING GROWTH INDUCING CHANGES/IMPACTS

According to CEQA Guidelines section 15126.2, subdivision (d), a project may foster economic or population growth, or additional housing, either indirectly or directly, in a geographical area if it meets any one of the following criteria below:

- A project would remove obstacles to population growth.
- Increases in the population may tax existing community service facilities, causing significant environmental effects.
- A project would encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. (State CEQA Guidelines, § 15126(d).)

A description of potential growth inducing impacts is presented in Section 4 of the FEIR. The proposed project would include pumping of groundwater from Rose Valley to injection wells at the Coso Geothermal Plant, approximately 9 miles away. The project would also include construction of water pumping, storage, and conveyance systems. None of the water produced, however, would be available for public consumption or supply that could indirectly induce growth.

The project does include a 3-5 MW substation, of which 2.5 MW would go to supplying power for groundwater pumping. The remaining 0.5 MW of power would serve an existing SCE load, which is currently served from the LADWP Haley Substation.

The proposed project would provide make-up water for the geothermal plants at CLNAWS, run by COC. The project would supply water to the geothermal reservoir for the rest of the period of the plants' permitted operation. The need for make-up water was foreseen and accounted for in the original permitting of the plant; therefore, the proposed project would not result in unforeseen generation that could induce growth. Total online energy produced from these plants has historically been about 270 MW. Currently, however the plants produce only about 200 MWs. Most of the energy is exported outside the County to the southern California market (Inyo County General Plan 2001).

Construction of the proposed project would require up to 40 construction workers, which would be from the local job pool and would not induce growth in the area. Operation would be conducted by existing staff from the Coso geothermal plant.

The project would not directly or indirectly cause unplanned growth or environmental impacts associated with unplanned growth. (FEIR, p. 4-13.)

VII. RESOLUTION REGARDING ALTERNATIVES

A. This Commission hereby declares that it has considered and rejected as either infeasible, or environmentally inferior, the alternatives identified in the

FEIR and described below.

B. FEASIBILITY OF ALTERNATIVES

Section 15126.6(c) of the CEQA Guidelines permits the elimination of an alternative from detailed consideration due to:

- Failure to meet most of the basic project objectives
- Infeasibility
- Inability to avoid significant environmental impacts

Section 15126(f)(1) of the CEQA Guidelines states that "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries…and whether the proponent can reasonably acquire control or otherwise have access to the alternative site. No one of these factors establishes a fixed limit on the scope of reasonable alternatives."

C. PROJECT OBJECTIVES

The Coso Operating Company, LLC (COC) is seeking a 30-year Conditional Use Permit (CUP No. 2007-03) from the Inyo County Planning Commission for the Coso Hay Ranch Water Extraction and Delivery System project.

The proposed project includes extracting groundwater from two existing wells on the Coso Hay Ranch, LLC property (Hay Ranch) in Rose Valley and delivering the water to the injection
distribution system at the Coso geothermal field in the northwest area of the China Lake Naval Air
Weapons Station (CLNAWS).

The objective of the proposed project is to provide supplemental injection water to the Coso geothermal field to minimize the annual decline in reservoir productivity due to evaporation of
geothermal fluids from power plant cooling towers. The project objective is to sustain the production capacity and useful economic lives of the existing power plant units. As stated in the EIR, the geothermal development itself has already been the subject of extensive environmental analysis and is operating under existing permits. (FEIR pp. 1-3 through 1-4.) Accordingly, the proposed project "does not include evaluation of the geothermal power plants because there are currently existing plants with several previously completed environmental analyses for power production." (FEIR p. 1-3.) The proposed project would not "increase the output production of the plan beyond what as previously analyzed for the power plants." (FEIR p. 1-3.) Additionally, the proposed project being considered by the County does not extend the life of the geothermal power plants and will not result in generation outputs beyond the 270 MWs historically generated by the facility. (See, e.g., Draft EIR 1-3 and 2-1.)

Section 15126.6 of the CEQA Guidelines requires that an EIR describe a range of reasonable alternatives to the project that would feasibly attain the basic project objectives and avoid or substantially lessen any significant effects of the project. A number of alternatives were considered and analyzed but rejected during development of the project including:

- No Project Alternative
- Increase power generation through power plant enhancements, including an air-cooling option
- Alternative sources of injection water
- Reducing the timeframe of the Conditional Use Permit
- Pumping Hay Ranch wells at the maximum rate allowable for a 30 year timeframe that would not surpass trigger levels
- Pumping Hay Ranch wells at 50, 1,500, or 3,000 acre-feet/year

Alternatives such as evaluating different geothermal technologies or electricity generation facilities do not meet the project's basic objective of maximizing utilization of the generating capacity of the existing plants. These sorts of alternatives are uneconomical and result in stranded investment costs from decommissioning existing operational facilities. These options may also have new environmental impacts from construction, regulatory limitations, issues with available infrastructure, etc.

Alternatives such as intentionally reducing electrical generation at the Coso geothermal plants do not meet the basic project objective of maximizing utilization of the generating capacity of the existing plants and would conflict with the applicant's obligations under existing power purchase agreements. Therefore, any alternatives associated with using different technology for electricity generation or for intentionally reducing power generation at the plants were rejected for failure to meet the most basic of project objectives, lack of economic viability, and regulatory limitations in terms of violating existing power purchase agreements.

Other alternatives considered but rejected include increasing power generation through power plant enhancements and providing water through an alternative source. These alternatives and reasons for rejection are described in Section 5 of the FEIR, in the documentation presented to the County's Water Commission and Planning Commission, and are discussed below.

1. NO PROJECT ALTERNATIVE

Section 15126.6(e) of the CEQA Guidelines requires consideration of the environmental consequences if the project is not constructed. The No Project alternative would result in no injection of supplemental waters to the Coso Geothermal Field. The No Project Alternative would avoid any direct impacts associated with the proposed project.

The No Project alternative would result in a shortened lifespan of the Coso geothermal power plants. The Coso Hot Springs could return to a natural state sooner if the power plants and geothermal withdrawal were to cease. Other impacts associated with the plants would also cease sooner than planned (e.g., air emissions, traffic issues, etc.). If the lives of the geothermal projects are shortened, there would be a loss of power supply, which would impact regional utilities or could require construction of new facilities that could have other environmental effects. The No Project alternative would increase air pollution as non-renewable energy projects would likely replace the renewable energy from the geothermal plants. The loss of the geothermal projects would also reduce royalty revenue to the federal government and Inyo County, and property tax revenue to Inyo County.

The No Project alternative avoids potentially significant but mitigable environmental impacts identified in Section 3, Environmental Impact Analyses; however, it would not meet the project objectives of providing supplemental injection water to the Coso geothermal field to offset declines in reservoir productivity.

2. INCREASE POWER GENERATION THROUGH POWER PLANT ENHANCEMENTS

One alternative considered was the potential for increasing power generation output through power plant enhancements. This alternative has the potential to achieve the project objective of increased power generation. The feasibility of improved power generation was investigated by comparing possible increased output from various potential plant efficiency improvements to the cost of the improvements for improved power generation and to the cost from projected decrease in steam production declines related to the project.

The incremental additional power generation output associated with the project based on reservoir projections was provided by COC. The projections are based on a reservoir simulation performed by COC. Reservoir projections include the projected total mass flow produced to the power plants, the total mass injected, and the enthalpy (thermodynamic potential or heat content) of fluid produced to the power plants without the project and with the project.

The analysis was based on production rates and enthalpies forecast through 2035 for the Coso geothermal projects, with and without additional injection. The approximate additional output associated with the additional flow rates and associated different enthalpy during the period was calculated (Global Power Solutions 2008) based on these forecasts. This amount of additional output relative to the total project price of $13.4 million produces an average of nearly 18 MW (see Figure 5.2-1) of additional output, or a cost of less than $750/kW. All other possible power generation improvements were then compared to this value.

COC seeks to offset a substantial decline in the geothermal field's productivity, and the consequential reduction in power output. Early in the history of geothermal development at the Coso geothermal field, generation was approximately 270

MW. Output is now under 200 MW, representing a total power generation decline of more than 25 percent. The total mass fluid produced has declined from 15,000 kilograms per hour (kph) to approximately 9,000 kph, representing a decline of approximately 40 percent. The power generation has declined at a lower rate than the reservoir production partly because the enthalpy of the fluid has increased, but primarily because COC has already performed numerous modifications to the power generation facilities in order to increase power generation efficiency.

Most plant modifications, at best, yield benefits on the order of 5 percent and most of these have already been undertaken by COC. With the diminishing returns associated with progressively smaller modifications, plant modifications tend to become less and less economical. A combination of many smaller modifications cannot provide the magnitude of increase in productivity sought by implementing the proposed project.

Air-cooled condensers were also considered as one potential plant modification alternative. Each air cooled unit would require approximately 2.67 MWs of parasitic electrical load as compared to the current consumption of 1.25 MW's. In order to eliminate the loss of water associated with power production that has been proposed by project detractors, Coso would require 9 of these units – which would result in the loss of 12.78 MW's of geothermal electric power supplied to Southern California consumers. Additionally, the relative efficiency of the air-cooled units is much lower than that of the existing cooling towers. If Coso were to migrate to air cooling, it would lose approximately 7.5 MW's on average of generation per unit during the summer months. Throughout the year, Coso would lose an average of approximately 2.2 MW's per generation plant, or a total of 19.8 MW's site wide. Between these two issues, as a result of air cooling, Coso would lose the ability to generate an average of 32.58 MWs from the existing facility. The proposed Project, in contrast, would lead to an increase in output with the equipment available at the existing facility of 30-50 MWs. (For additional discussion please see Response 2.6.) Accordingly, air cooled condenser would not meet the primary Project objective of slowing reductions in energy output. Finally, the cost to install air cooled condensers would be approximately $256,000,000, which greatly exceeds the cost of the proposed Project and is not economically justified given the loss in efficiency that the condensers would cause.

Ultimately, plant modifications, including the possibility of air-cooled condensers, were therefore considered but rejected by the County as part of the alternatives analysis process.

3. ALTERNATIVE SOURCES OF INJECTION WATER

A second alternative to the project involves obtaining water for injection from a source other than at Hay Ranch. Several alternative sources of water were identified and considered by COC as sources of injection water. These alternatives are compared with the potential productivity of the Hay Ranch wells in Rose Valley, which is approximately 3,000 gpm on average. The cost for water extraction and transfer from the Hay Ranch location is approximately $13.4 million. The cost of water delivery to the injection system would include well drilling costs, pipeline construction, pumping

requirements, and environmental costs. Approximately $7.4 million is fixed, and $6 million is specifically related to the 9-mile pipeline and pumps for the Hay Ranch wells. The fixed costs include enhancement of injection systems, engineering, and permitting that would be required regardless of the location of the water, although the costs might be somewhat less for smaller amounts of water. Any alternative source of water would have to produce a significant amount of water to be economically feasible.

COC estimated that a water source would have to produce at least 500 gpm to be economically feasible as an injection water source. The rate is reasonable considering the fixed costs for a water extraction project are probably on the order of $7 million. None of the other considered water sources come near to those potential rates except possibly the marginal geothermal wells. The project benefit in reduction in the rate of decline of steam delivered to the power plants is based on a reduction in the current negative net mass withdrawal. Extraction of fluid from geothermal wells that are closely connected to the reservoir would not provide the reduction in net mass withdrawal that the project requires for the anticipated benefit.

The review of potential production wells does not identify any other water sources that come near to the potential to supply injection water as the Hay Ranch project at 3,000 gpm, or the minimum economically feasible amount of 500 gpm, except possibly the Coso Ranch wells. Average well flow rates in the Coso Basin area are low, so it is unlikely that new wells drilled in that area would produce water at economically feasible rates.

Although the Coso Ranch wells may produce sufficient volume, the location of these wells is such that the environmental impacts (related to hydrological impacts and surface disturbance of crossing a major highway) would exceed those of the proposed project. Therefore, development of alternative sources of water does not appear to be a viable alternative to water extraction at Hay Ranch.

4. REDUCING THE TIMEFRAME OF THE CONDITIONAL USE PERMIT

Shortening the length of the Conditional Use Permit (CUP) for the proposed project was considered but rejected. Initial reasoning for shortening the length of the CUP was to link the permit to the most conservative timeframe for when the surface waters of Little Lake would not be adversely affected by groundwater drawdown. It is not possible to define a shortened timeframe that would still prove economical and practical benefits compared with the price of the project construction. Additionally, mandatory mitigation measures are imposed as part of Project approval to ensure that no significant impacts will result. The County – both through the mitigation plan and as a function of the County's powers to enforce and modify CUPs – retains the discretion to ensure that mitigation is carried out. Accordingly, there is no need to reduce the term of the CUP to less than 30 years, because no significant impacts will result.

5. PUMPING HAY RANCH WELLS AT THE MAXIMUM RATE ALLOWABLE FOR A 30 YEAR TIMEFRAME THAT WOULD NOT SURPASS TRIGGER LEVELS (ALTERNATIVE 1)

This alternative includes pumping of the Hay Ranch wells at estimated minimum rates that can be sustained for the entire 30 year project life without exceeding the hydrologic trigger levels identified for Little Lake Ranch. In order to not exceed hydrologic trigger levels, project pumping shall not:

- Reduce groundwater flow into Little Lake by more than 10%
- Decrease groundwater levels at the northern end of Little Lake by more than 0.3 feet

Because drawdown predicted by the numerical groundwater flow model is sensitive to aquifer specific yield, which could not be determined during the preparation of the EIR, analyses were conducted to evaluate the minimum sustainable pumping rates for assumed specific yield values of 10%, 20%, and 30%.

The environmental effects of Alternative 1 would be largely the same in nature as the proposed action, but would take longer to occur. The alternative would reduce but not eliminate hydrological and biological effects from groundwater pumping.

The effects to Agricultural Resources, Cultural Resources, Population and Housing, Land Use, Aesthetics, Hazards and Hazardous Materials, Air Quality, Transportation and Traffic, Noise, Public Services, Population and Housing, and Land Use would be the same as for the proposed project. The following discussion identifies environmental effects of Alternative 1 that would differ from the effects identified for the proposed project. All mitigation measures identified for the proposed project would apply to Alternative 1 and be included in the alternative project.

Hydrology and Water Quality. This project development alternative was evaluated by constructing groundwater model scenarios in which the calibrated model parameter set and
boundary conditions were held fixed with one exception: specific yield was varied from a low of
10% to the estimated average value of 20%, and to a high of 30%. Trigger levels in groundwater
wells throughout the valley for the reduced pumping rate alternative would be the same as for the
proposed project (Table 3.2-7); however, the elapsed time expected without exceeding a trigger
level would be extended further into the future, due to the lower pumping rate.

Simulations were conducted for each of the three specific yield values to evaluate the pumping rate associated with each specific yield value that could be sustained for the entire 30 year project life without exceeding hydrologic trigger levels near Little Lake. The results of these model simulations indicated that lower pumping rates can be sustained when a low specific yield (10%) is assumed for the aquifer; higher pumping rates can be sustained when a high specific yield (30%) is assumed for the aquifer. Drawdown takes longer to develop farther from Hay Ranch (as discussed in section 3.2 Hydrology and Water Quality). The maximum groundwater table drawdown predicted to develop near Little Lake occurs years after the end of the 30 year project.

For this reason, the simulation scenarios were extended to simulate groundwater conditions up to 150 years after project startup. The effects of pumping at Hay Ranch for the three specific yield values on the estimated maximum pumping rate that can be sustained for the entire 30 year project life, and not exceed the hydrologic trigger levels identified for Little Lake Ranch, are shown in Figure 5.4-1. The predicted sustainable pumping rates range from approximately 180 acre-ft/yr, assuming a low specific yield of 10%, to 480 acre-ft/yr year, assuming a high specific yield of 30%. The time at which the maximum drawdown is predicted to develop at Little Lake is approximately 35 years from project commencement for 10% specific yield to nearly 55 years for 30% specific yield. The groundwater table begins to rise back to predevelopment conditions after pumping is stopped at Hay Ranch; but, there is a lag time until the water levels begin to rise the farther the distance from Hay Ranch.

The model indicates that drawdown at the south end of Little Lake Ranch would be less than at the north end. Groundwater levels at the north end of the lake are the more sensitive indicators of potential impacts. The modeling analysis predicts that pumping for 30 years at the lower rates identified above (180 to 480 acre-ft/yr depending on specific yield) would not exceed the trigger levels; however, if it did, the same mitigation as prescribed for the proposed project (Hydrology-1, Hydrology-2, Hydrology-3, and Hydrology-4) would be implemented.

Geology, Soils, and Seismicity. The effects to geology and soils from Alternative 1 would be similar to those of the proposed project, with the exception that the potential for subsidence in the Rose Valley would be reduced. Subsidence would be reduced because the lower pumping rates would create less groundwater table drawdown, reducing the effects of dewatering on potentially compressible soils.

The potential for ground subsidence from the proposed project would be less than significant because of the highly consolidated nature of the soils (refer to Section 3.3 Geology and Soils). Potential for subsidence from Alternative 1 would also be considered less than significant, as pumping rates would be lower than the proposed project.

Biological Resources. Effects of project construction, operation and maintenance, and decommissioning under Alternative 1 would be similar to the proposed project, except with respect to indirect impacts to water dependent vegetation at Little Lake as they pertain to impacts to the water discharge level at Little Lake. Alternative 1 would likely maintain adequate water availability at Little Lake (no greater than 10% reduction in flow into the lake and ponds). There may also be some reduction in groundwater elevation near Little Lake; however, the predicted amount of drawdown ranges from less than to only slightly greater than natural groundwater table fluctuations observed in the area. Existing plant communities are likely already adapted to groundwater table decreases of this magnitude and would not likely be impacted significantly.
Monitoring and mitigation would be the same as for the proposed project, as would trigger levels
and mitigation. If the hydrologic trigger levels were reached, mitigation that requires scaling back pumping (or turning off pumping as is the case in this alternative) would be implemented.

6. PUMPING HAY RANCH WELLS AT LOWER RATES (ALTERNATIVE 2)

Several alternatives to the full project development were evaluated and consisted of pumping the Hay Ranch wells at rates and pumping durations less than the full development rate of 4,839 acreft/yr. Project development alternatives were evaluated by constructing groundwater model scenarios in which the calibrated model parameter set and boundary conditions were held fixed.

Specific yield was set to a conservatively low value of 10 percent for these analyses. Three scenarios corresponding to Hay Ranch extraction rates of 750, 1,500, and 3,000, acre-ft/yr were conducted. The results of these modeled scenarios were evaluated in terms of the predicted impact to groundwater elevations at Little Lake and the groundwater flow rate available for discharge to Little Lake.

The environmental effects of Alternative 2 would be largely the same as the proposed action and Alternative 1. The alternative would reduce, but not eliminate, hydrological and biological effects from groundwater pumping. Alternative 2 would reduce any potential for subsidence in Rose Valley due to groundwater pumping.

The effects to Agricultural Resources, Cultural Resources, Population and Housing, Land Use, Aesthetics, Hazards and Hazardous Materials, Air Quality, Transportation and Traffic, Noise, Public Services, Population and Housing, and Land Use would be the same as for the proposed project. The following discussion identifies environmental effects of Alternative 2 that would differ from the effects identified for the proposed project. All mitigation measures identified for the proposed project would apply to Alternative 2 and be included in the alternative project.

Hydrology and Water Quality. The effect of alternative project pumping rates at Hay Ranch on the predicted groundwater table drawdown at the north end of Little Lake is shown on Figure 5.4-2, assuming a specific yield of 10%. To avoid causing a greater than 10% reduction in flows into Little Lake, the duration of pumping was found to vary depending on pumping rate.
Based on these analyses, pumping at a rate of 750 acre-ft/yr could be sustained for at least 6
years without exceeding the drawdown trigger levels, pumping at a rate of 1,500 acre-ft/yr could be sustained for just over 3 years without exceeding the trigger levels, and pumping at a rate of 3,000 acre-ft/yr may be sustained for approximately 1.75 years without exceeding the trigger levels throughout the valley.

In the event that post-startup monitoring and subsequent numerical model recalibration indicates less drawdown propagation than indicated by this conservative analysis, pumping may be extended for this alternative similar to the proposed project.

Effects to hydrology from Alternative 2 would be similar in scope but of lower magnitude than for the proposed project. Less drawdown would be induced near Little Lake. The time frame for impacts to the Little Lake area would be extended slightly (see Figure 5.4-2); that is, the predicted reduction in groundwater flow towards Little Lake would occur later in the project at reduced pumping rates. However, reduction in lake discharge rates would likely still occur even at the lowest alternative pumping rate considered. Mitigation would be similar to the proposed project in that pumping should be reevaluated after the first year and the continued duration of pumping and pumping rate should be determined based on additional information collected in the first two years of pumping. If lower rates are pumped initially, pumping may be able to continue for a longer period of time than if the full pumping rate is instituted from the start. The effects would be the same as for the proposed project.

Additionally, the data that will be obtained through the proposed Project's pumping rates will, over a period of years, provide Inyo County with more accurate information regarding the Rose Valley aquifer. This type of information can only be gained by extensively pumping the aquifer while studying effects of that pumping. Accordingly, as pumping rates are reduced, the quality of the data obtained becomes increasingly poor.

With respect to water quality, the proposed project is not expected to adversely impact water quality. Consequently, Alternative 2 would have even less potential for adverse impacts to water quality.

Geology, Soils, and Seismicity. The effects to geology and soils from Alternative 2 would be similar to those of the proposed project, with the exception

that the potential for subsidence in the Rose Valley would be reduced. Subsidence would be reduced because of a lower rate of groundwater pumping at Hay Ranch.

The potential for ground subsidence from the proposed project would be less than significant because of the highly consolidated nature of the soils (refer to Section 3.3 Geology and Soils). Potential for subsidence from Alternative 2 would also be considered less than significant, as pumping rates would be lower than the proposed project.

Biological Resources. Effects of project construction, operation and maintenance, and decommissioning under Alternative 2 would be similar to the proposed project, except with respect to indirect impacts to water dependent vegetation at Little Lake. Alternative 2 would eventually cause a reduction in groundwater supply and subsequent surface water volume at Little Lake. This drawdown of groundwater levels would affect the vegetation, as described for the proposed project. Under Alternative 2, mitigation defined for hydrologic impacts at Little Lake would still likely need to be implemented, but the time at which it would be needed would be later than under the proposed project. Monitoring and mitigation would be the same as for the proposed project, as would trigger levels and mitigation.

D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative. Section 15126.6(e)(2) of the CEQA Guidelines require that: "If the environmentally superior alternative is the No Project alternative, the EIR shall also identify an environmentally superior alternative among the alternatives."

The No Project alternative would maintain the existing groundwater conditions in Rose Valley but result in continued decline of the geothermal reservoir at the Coso geothermal field and the resultant decreases in productivity of the power plant facilities and increased air pollution as greater dependence is put on non-renewable energy sources. The early decommissioning of the Coso geothermal plants would result in the need for construction of new power generation facilities elsewhere to make up for the loss of the over 200 MW of power supplied by the Coso geothermal projects. Construction of new power facilities could have associated environmental impacts related to construction and operation.

While the No Project alternative would avoid groundwater impacts to the Rose Valley, the effects to electricity supply in the region and the associated environmental effects of generating new electricity to compensate for the electricity lost from the Coso projects would be greater than those of the proposed project. The proposed Project would enable the increased operational efficiency of a geothermal, renewable energy resource. Accordingly, the Project will actually help to reduce statewide greenhouse gas emissions and assist with meeting California's Renewable Energy Portfolio Standard and meeting federal goals for renewable energy. The alternatives would not provide these same environmental benefits.

The proposed project, without mitigation, would result in several potentially significant impacts. All potentially significant impacts shall be mitigated to less-than-significant levels with implementation of mitigation measures outlined in this EIR. Alternative 1 and 2 would not cause significant effects at Little Lake; however, neither would the proposed project if mitigation is implemented. These three alternatives would likely have equal environmental effects and none of them is more “superior” than the others.