B.3.9 Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater discharge such that there would be a net deficit in the aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?	☐	☐	☒	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?	☐	☐	☒	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f. Otherwise substantially degrade water quality?	☐	☒	☐	☐
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other hazard delineation map?	☐	☐	☐	☒
h. Place within 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	☐	☐	☐	☒
j. Cause inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.9.1 Setting

The environmental setting relevant to hydrology and water quality is characterized by surface waters, floodplains, and groundwater resources. As described in Section B.1, the Proposed Project includes upgrading and expanding the existing Downs Substation, routing an existing subtransmission line into and out of the substation, and installing 58 miles of fiber optic telecommunication cable. In this section, the term "Proposed Project area" refers to the location of all actions that would occur under the Proposed Project.

Surface Water. The Proposed Project area is located within the Indian Wells-Searles Valleys Watershed (Hydrologic Unit Code 18090205). There are no surface waters identified as impaired on the Clean Water Act Section 303(d) list within this watershed (SWRCB, 2006). Natural drainage in the area of the existing Downs Substation and proposed fiber optic telecommunication cable is to Mirror Lake to the northeast via ephemeral drainages.

Flood Hazards. The Proposed Project area is not located within a 100-year Flood Hazard Area, or an area anticipated to be inundated as a result of the magnitude storm which has a one percent chance of

occurring each year, as designated by the Federal Emergency Management Agency (FEMA) (FEMA, 2008). A 100-year Flood Hazard Area is located approximately one-half mile west of the Downs Substation site, northeast of the intersection of Ridgecrest Boulevard and Mahan Street.

Groundwater. The Proposed Project area is underlain by the Indian Wells Valley Groundwater Basin (DWR, 2004a) and the Searles Valley Groundwater Basin (DWR, 2004b). The safe yield and depth to groundwater for these basins are not currently known. Both basins are summarized below.

- **Indian Wells Valley Groundwater Basin.** The Indian Wells Valley Groundwater Basin has a surface recharge area of 382,000 acres, or 597 square miles. The basin is closed and internally drained, with China Lake as the primary natural groundwater discharge point. This groundwater basin is comprised of unconsolidated sediments which make up an upper aquifer and a lower aquifer, with the lower aquifer being the primary producer. The California Department of Water Resources (DWR) reports that groundwater level trends in the Indian Wells Valley Groundwater Basin have been declining since 1945, and that the basin is currently understood to be in a state of overdraft. (DWR, 2004a)

- **Searles Valley Groundwater Basin.** The Searles Valley Groundwater Basin has a surface recharge area of 197,000 acres, or 308 square miles. The California DWR reports that hydrographs have indicated varying groundwater trends for the Searles Valley Groundwater Basin, depending on pumping rates and locations. Industrial pumping north of Searles Lake has caused the natural groundwater gradient to move north towards Valley Wells. Groundwater discharge occurs through evaporation at Searles Lake, where water levels are commonly at or near the ground surface. (DWR, 2004b)

Applicable Regulations

Federal

Clean Water Act (CWA). The CWA (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The Proposed Project area is within the jurisdiction of the South Lahontan Regional Water Quality Control Board (RWQCB).

- **Section 402** of the CWA authorizes the California State Water Resources Control Board (SWRCB) to issue NPDES General Construction Storm Water Permit (Water Quality Order 99 08 DWQ), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided that they meet the following requirements: Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters; Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation; and Perform inspections of all BMPs. Projects that disturb one or more acres, including the Proposed Project, are required to obtain NPDES coverage under the Construction General Permits.

- **Section 401** of the CWA requires that any activity, including river or stream crossing during road, pipeline, or transmission line construction, which may result in discharges into a State waterbody, must be certified by the RWQCB. This certification ensures that the proposed activity does not violate State and/or federal water quality standards. The limits of non-tidal waters extend to the Ordinary High Water line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. The U.S. Army Corps of Engineers may issue either individual, site-specific permits or general, nationwide permits for discharge into U.S. waters.
- **Section 404** of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the U.S. or wetlands. A Water Quality Certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for Water Quality Certification (or waiver thereof) from the applicable RWQCB, which for actions under the Proposed Project would be the South Lahontan RWQCB. When an application for a Section 404 permit is made the Applicant must show it has: Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable; Minimized unavoidable impacts on waters of the U.S. and wetlands; and Provided mitigation for unavoidable impacts.
- **Section 303(d)** of the CWA requires states to identify "impaired" water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to the USEPA for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of Total Maximum Daily Load (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

National Flood Insurance Program (NFIP). The NFIP, implemented by the Congress of the United States in 1968, enables participating communities to purchase flood insurance. Flood insurance rates are set according to flood-prone status of property as indicated by Flood Insurance Rate Maps (FIRMs) developed by the Federal Emergency Management Agency. FIRMs identify the estimated limits of the 100-year floodplain for mapped watercourses, among other flood hazards. As a condition of participation in the NFIP, communities must adopt regulations for floodplain development intended to reduce flood damage for new development through such measures as flood proofing, elevation on fill, or floodplain avoidance. The Proposed Project area is not situated within a floodplain (FEMA, 2008).

State

Porter-Cologne Water Quality Control Act. The SWRCB regulates water quality through the Porter-Cologne Water Quality Act of 1969, which contains a complete framework for the regulation of waste discharges to both surface waters and groundwater of the State. On the regional level, the Proposed Project area is located within the jurisdiction of the Lahontan RWQCB, which is responsible for the implementation of State and federal water quality protection statutes, regulations and guidelines. The Lahontan Region Water Quality Control Plan (Basin Plan) provides direction for the management of the quality of the surface and groundwaters within the region. The Basin Plan lists the beneficial uses of water within the region, describes the water quality which must be maintained to allow those uses, describes the programs, projects, and other actions which are necessary to achieve the standards established in this plan, and summarizes plans and policies to protect water quality.

California Fish and Game Code. Section 1602 of the California Fish and Game Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the California Department of Fish and Game (CDFG) in which there is, at any time, any existing fish or wildlife resources, or benefit for

the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State, and requires any person, State, or local governmental agency, or public utility to notify the CDFG before beginning any activity that will: Substantially divert or obstruct the natural flow of any river, stream or lake; Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. A Streambed Alteration Agreement is required if the CDFG determines that any project activity could substantially adversely affect an existing fish and wildlife resource. The agreement includes measures to protect fish and wildlife resources while conducting a project.

California Water Code §13260. California Water Code §13260 requires that any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State, other than into a community sewer system, must submit a report of waste discharge to the applicable RWQCB. Any actions related to the Proposed Project that would be applicable to California Water Code §13260 would be reported to the Lahontan RWQCB.

Local

Kern County General Plan (KCGP). The policies, goals, and implementation measures in the KCGP for hydrology and water quality applicable to the Proposed Project are listed below. The KCGP, originally adopted on June 15, 2004 and last amended on September 22, 2009, contains additional policies, goals, and implementation measures that are more general in nature and not specific to the Proposed Project; these are not listed below but are incorporated by reference.

- Section 1.9: Resources

  Policy 11. Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

- Section 1.10.6: Surface Water and Groundwater

  Policy 43. Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

  Policy 44. Discretionary projects shall analyze watershed impacts and mitigate for urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the CEQA, to prevent the degradation of the watershed to the extent practical.

- Section 17.28: Kern County Grading Code

  Requirements of the Kern County Grading Code will be implemented. A grading permit will be obtained prior to commencement of construction activities. Of particular note with respect to hydrology and water quality is Section 17.28.140, Erosion Control.

B.3.9.2 Environmental Impacts and Mitigation Measures

a. Would the project violate any water quality standards or waste discharge requirements?

LESS THAN SIGNIFICANT. The Proposed Project could result in a significant impact to hydrology and water quality if construction or maintenance activities would result in the violation of any water quality or waste discharge standards. Such violations could occur through the creation of erosion, sedimentation, and/or polluted runoff, through the accidental release of potentially hazardous materials required during construction or operational activities, and/or through the discharge of contaminated

groundwater during dewatering activities, if required. Topography in the Project area is generally flat, and the Proposed Project would include construction of runoff control features (see Project Description Section B.1.11.2, Downs Substation Construction) that would minimize the potential for erosion and sedimentation. Hazardous and potentially hazardous materials required to operate vehicles and equipment would be used during construction, and materials such as motor oil, transmission fluid, or antifreeze could leak due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error. If shallow groundwater is unexpectedly encountered during construction activities, dewatering activities would be required and standard BMPs for dewatering would be implemented. The Proposed Project is required to comply with all applicable water quality standards and waste discharge requirements; potential impacts would not be significant.

b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

LESS THAN SIGNIFICANT. As described above, the Proposed Project area is underlain by the Indian Wells Valley Groundwater Basin and Searles Valley Groundwater Basin. Safe yield and groundwater budget for these basins are not currently known, although the Indian Wells Valley Groundwater Basin is reasonably understood to be in a state of overdraft. During construction of the Proposed Project, a water source would be required for dust control and perimeter landscaping. The water used during construction would be sourced from the Indian Wells Valley Water District (IWVWD), and new or expanded water entitlements would not be required (SCE, 2010 – Section 4.17). The only water source currently used by the IWVWD is local groundwater. Although local groundwater resources are reasonably understood to be in overdraft, the IWVWD has a Water Supply Enhancement General Plan in place to supplement water sources and ensure water supply reliability (IWVWD, 2007). The Proposed Project would introduce impermeable surfaces and compact soils, resulting in site-specific alterations to groundwater recharge rates and patterns. The Indian Wells Valley and Searles Valley Groundwater Basins are respectively 597 and 308 square miles in size. Permanent land disturbance that would occur under the Proposed Project, which is associated with the substation expansion, would be 3.3 acres in size, or less than one-half percent of the overall watershed area. The introduction of impermeable surfaces and increased compaction that would occur under the Proposed Project would have no appreciable effect on groundwater recharge. Operation and maintenance of the Proposed Project would not require a new water source. Potential impacts to groundwater resources associated with depletion of groundwater supply and/or alterations to groundwater recharge rates or patterns would be less than significant, and would not result in a net deficit in aquifer volume or lowering of the local groundwater table.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off site?

LESS THAN SIGNIFICANT. The topography of the Proposed Project area is relatively flat. Steeper slopes exist along Poison Canyon, but the Proposed Project does not include the construction of hillside infrastructure. The existing Downs Substation expansion area drains to the east towards a topographic depression adjacent to Downs Street, which would be engineered as a retention pond as part of the Proposed Project. Construction of the Proposed Project would include the development and implementation of a SWPPP, for coverage under the NPDES General Construction Permit in compliance with Section 402 of the Clean Water Act. The Proposed Project would alter existing drainage patterns,

but such effects would be site-specific and would not result in substantial erosion or siltation on or off site. Impacts would not be significant.

d. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?

LESS THAN SIGNIFICANT. As described above, the Proposed Project would result in site-specific drainage alterations. Part of these alterations would include grading of the area to a one- to two-percent slope and compaction to 90 percent of the maximum dry density. Existing compaction ranges between 80 and 85 percent; compaction to 90 percent would therefore decrease permeability of the area, potentially increasing surface runoff rates. However, the increased compaction is not considered substantial and would not have notable effects on surface runoff rates or patterns. The Proposed Project would alter existing drainage patterns, but such effects would be site-specific and would not result in substantial flooding on or off site. Impacts would not be significant.

e. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems to provide substantial additional sources of polluted runoff?

LESS THAN SIGNIFICANT. The Proposed Project does not include construction of a stormwater drainage system and, as described above, construction of the Proposed Project would not result in a significant impact to runoff rates or patterns, and would not result in flooding on or off site. Polluted runoff could be introduced if an accidental leak or spill results in the release of hazardous materials such as motor oil or lubricating fluid, particularly during or immediately prior to a storm event. The SWPPP that would be implemented as part of the Proposed Project would include BMPs to avoid hazardous materials spills. The SWPPP would identify locations for storage of hazardous materials during construction, as well as protective measures, notifications, and cleanup requirements for an incidental spill or other potential release of hazardous materials (SCE, 2010 – Section 3.4). Potential impacts associated with the contribution of polluted runoff would not be significant.

f. Would the project otherwise substantially degrade water quality?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Compliance with existing water quality standards and waste discharge requirements would minimize the potential for water quality impacts to occur, per the discussion provided in Section B.3.9.2 (a). As described in Project Description Section B.1.11.3, Overhead 115-kV Subtransmission Line Construction, tubular steel pole foundations in soft or loose soil that extend below the groundwater level may be stabilized with drilling mud slurry, which would be placed in the hole after drilling to prevent the sidewalls from sloughing. The concrete for the foundation would then be pumped to the bottom of the hole, displacing the mud slurry. During this process, it is expected that no groundwater would come to the surface; therefore, dewatering of the hole is not expected to be necessary. However, if shallow or perched groundwater is unexpectedly encountered during construction, such as during installation of tubular steel poles, dewatering activities would be required and Mitigation Measure WR-1 (Construction site dewatering management) would be applied to ensure that adverse impacts to groundwater supplies or quality would not occur.

Mitigation Measure for Water Quality

WR-1 **Construction site dewatering management.** If groundwater is unexpectedly encountered during construction, dewatering activities shall be performed in compliance with the California Stormwater Quality Association (CASQA) Handbook for Construction or other similar

guidelines, as approved by Kern County. The project proponent(s) shall notify Kern County and the Lahontan Regional Water Quality Control Board at the onset of dewatering activities, and submit written description of all executed dewatering activities, including steps taken to return encountered groundwater to the subsurface, upon the completion of dewatering activities at the affected site(s). The Environmental Monitor shall periodically check grading activities for groundwater exposure.

g. Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

NO IMPACT. The Proposed Project is not located within a 100-year floodplain and does not include the construction of housing.

h. Would the project place within a 100-year floodplain structures that would impede or redirect flood flows?

NO IMPACT. The Proposed Project is not located within a 100-year floodplain and would not place structures within a floodplain such that flood flows would be impeded or redirected.

i. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

NO IMPACT. The Proposed Project is not located within vicinity to a levee or dam and is not subject to flooding or inundation resulting from failure of a levee or dam.

j. Would the project cause inundation by seiche, tsunami, or mudflow?

LESS THAN SIGNIFICANT. The Proposed Project is not located near an ocean, perennial lake, or river, and is therefore not subject to inundation by seiche or tsunami. Portions of the Proposed Project are located near steep slopes within Poison Canyon and south of Trona that could become unstable during periods of heavy precipitation. Implementation of the Proposed Project would not affect any existing risk of mudflow events to occur, but would introduce the potential for project infrastructure to be inundated as a result of a mudflow event. Such potential is considered low, and potential impacts would be less than significant.