

1 **4.14 ENERGY AND MINERAL RESOURCES**

2 This Section addresses energy and mineral resources. It describes the
3 environmental setting in terms of existing energy uses and mineral resources that
4 could be affected by the proposed alignment, the regulatory setting in terms of
5 Federal, State, and local plans that could affect the Project construction and
6 operation, identifies significance criteria, describes any applicant proposed
7 measures, and provides an impact analysis discussion.

8 **4.14.1 Environmental Setting**

9 PG&E provides electricity to all or part of 47 counties in California, constituting most
10 of the northern and central portions of the State. In 2007, PG&E obtained 32
11 percent of electricity from its own generation sources and the remaining 68 percent
12 from outside sources. PG&E-owned generating facilities include nuclear, natural
13 gas, and hydroelectric, with a net generating capacity of more than 6,200
14 megawatts. Outside suppliers to PG&E include the California Department of Water
15 Resources, irrigation districts, renewable energy suppliers, and other fossil fuel-fired
16 suppliers. PG&E operates approximately 159,000 circuit miles of transmission and
17 distribution lines. PG&E is interconnected with electric power systems in the
18 Western Electricity Coordinating Council, which includes 14 western states; Alberta
19 and British Columbia, Canada; and parts of Mexico. In 2007, PG&E delivered
20 86,179 gigawatt-hours of electricity to its customers.

21 PG&E provides natural gas to all or part of 39 counties in California, comprising
22 most of the northern and central portions of the state. PG&E obtains more than 60
23 percent of its natural gas supplies from western Canada and the balance from U.S.
24 sources. PG&E operates approximately 48,000 miles of transmission and
25 distribution pipelines. In 2007, PG&E delivered 875 billion cubic feet (Bcf) of natural
26 gas to its customers.

27 **Yolo County**

28 Yolo County is supplied and serviced by PG&E. Peak electrical loads have been
29 increasing in recent years, and the reserve margin for Yolo's electricity supplies has
30 been low, varying from 8 to 10 percent. Based on reserve margins, absolute supply
31 is considered a problem for electricity. Natural gas supplies to the region are
32 provided from Canada and the southwest United States. Significant natural gas
33 reserves are found in Yolo County. Prices of natural gas are anticipated to rise due
34 to Federal policies. Electricity supplies to the region are secure and prices will

1 continue to rise. Peak period load has been increasing and currently is a major
2 problem and will continue.

3 Solar, wind, biomass, and geothermal energy potential all exist in Yolo County. Yolo
4 County uses about 22 trillion British thermal units (Btu's) per year (260 million Btu's
5 of primary energy per person) which is about 18 percent of the energy use in the
6 Sacramento Metropolitan Statistical Area (SMSA) and about 0.3 percent of that in
7 the state. About half of the county's energy use is motor fuels, while 19 percent is
8 natural gas and 12 percent goes to electrical use. Overall, the county appears to
9 have adequate energy resources.

10 Yolo County has an extensive history of mining sand and gravel mineral resources in
11 the county, as well as gold and mercury within the Cache Creek watershed. The
12 Cache Creek Area Plan (CCAP) was adopted by the Yolo County Board of
13 Supervisors in August 1996 and approved by County Voters in November 1996.
14 The CCAP comprises the Off-Channel Mining Plan (OCMP), which is a mining and
15 reclamation plan, and the Cache Creek Resources Management Plan (CCRMP),
16 which is a creek management plan. The focus of the CCAP is groundwater
17 protection, agricultural preservation, restoration of Cache Creek, and limitation and
18 regulation of mining.

19 The alluvial deposits in the Cache Creek area are recognized as a major regional
20 source of aggregate for the production of concrete, asphalt, and road base
21 materials. Commercial aggregate mining occurred in the creek from the early 1900's
22 through 1996 when the County negotiated a "trade" with mining operators of vested
23 in-channel rights for vested off-channel rights.

24 The CCRMP, adopted August 20, 1996 and amended August 15, 2002, eliminated
25 in-channel commercial mining, and established an improvement program for
26 implementing on-going projects to improve channel stability and restore habitat
27 along the creek banks. The CCRMP provides the policy framework for restoration of
28 the 14.5-mile Lower Cache Creek. It includes specific implementation standards
29 within the Cache Creek Improvement Program (CCIP). The CCIP is the
30 implementation plan for the CCRMP that identifies categories of
31 restoration/protection projects along a precisely defined stretch of the creek. These
32 include bank stabilization, channel maintenance, revegetation, and habitat
33 restoration according to identified design requirements.

1 The CCRMP/CCIP does allow for limited “maintenance” excavation to occur in order
2 to restore the creek and improve creek stability over time. The adoption of the
3 CCAP allowed the County to eliminate commercial mining activity from within the
4 creek channel and “substitute” that activity with off-channel mining which allowed for
5 appropriate regulated harvesting of the mineral resource deposits.

6 **Sutter County**

7 Local energy needs can likely be met over the short-term (5 to 10 years) without new
8 sources of energy development. New transmission line and substation development
9 is not necessary in the short-term to serve expected growth. The primary
10 considerations for the siting of new cogeneration facilities is fuel availability and the
11 access to existing transmission lines. Air quality issues pose significant regulatory
12 and environmental constraints to the development of new cogeneration and waste to
13 energy facilities. Sutter County has extensive natural gas resources and continued
14 production is likely. As of November 1995, Sutter County produced approximately 5
15 percent of all the natural gas produced in California from 252 wells in 19 gas fields.

16 PG&E provides electric and gas service to Sutter County. Since 1988 there has
17 been a steady increase in electric energy use, while over the same period natural
18 gas has fluctuated somewhat, with a slight decrease in consumption. In 1995,
19 Sutter County’s total electric use was 475,139,824 kilowatts and gas use was
20 23,093,240 therms. As population of the county increases, the demand for these
21 energy resources will also increase. Based on discussions with PG&E by Sutter
22 County for information for the General Plan, current gas and electric supplies at the
23 time the General Plan was written are expected to meet demands in Sutter County
24 for the foreseeable future. An option to augment existing electric power sources is
25 cogeneration, and possibly waste to energy development, which is considered a
26 subset of cogeneration. These resources have been utilized to a limited degree in
27 Sutter County. Another feasible energy option, based on the county’s climate, is
28 solar energy. However, technology at the time of the writing of the General Plan had
29 not reached the level of economic feasibility needed to stimulate new facility
30 development. Other energy types, such as wind, geothermal, and oil production, are
31 not expected to occur at any significant levels. However, significant natural gas
32 production is expected to continue in the county. Overall, the county appears to
33 have adequate energy resources.

34 According to the California Division of Mines and Geology, the county does not
35 contain any significant or substantial deposits of mineral resources.

1 **Sacramento County**

2 Sacramento County, the Sacramento Municipal Utilities District (SMUD), and PG&E
3 are responsible for accommodating energy demand through growth planning.
4 Energy planning includes the ready transfer of information between the County
5 Planning Department and the utilities responsible for establishing and implementing
6 long-term plans. According to the Energy Plan associated with the 1993 General
7 Plan, based on past trends, annual per capita consumption of energy in Sacramento
8 County is projected to increase from 195 million Btu's in 1975 to 266 million Btu's by
9 1995. This increase, combined with projected population growth, would result in an
10 85 percent increase in total energy consumption in the county, from 134 trillion Btu's
11 in 1975 to approximately 248 trillion Btu's in 1995. The Energy Plan looks to
12 numerous economic, social, environmental, and political reasons for making more
13 efficient use of energy and for developing renewable sources to replace the
14 dwindling supplies of fossil fuels. The Energy Plan states the possibility that with the
15 technology now available, it is possible to obtain at least the same level of benefits
16 from products and services with a lower investment of energy. According to the
17 Energy Plan, 6 percent of total energy in the county comes from renewable sources
18 (hydroelectricity). Overall, the county appears to have adequate energy resources.

19 According to the City of Sacramento General Plan, the area of Sacramento County
20 where the proposed Project is located includes Mineral Resources Zone 1 (MRZ-1)
21 and Mineral Resource Zone 3 (MRZ-3). MRZ-1 includes areas where adequate
22 information indicated that no significant mineral deposits are present, or where it is
23 judged that little likelihood exists for their presence. MRZ-3 includes areas
24 containing mineral deposits, the significance of which cannot be evaluated with
25 available data. The proposed Project is located primarily in MRZ-1 (Sacramento
26 County 1993).

27 **Placer County**

28 PG&E provides electricity to Placer County (excluding the City of Roseville) and
29 provides natural gas for commercial and residential use in Placer County, including
30 the City of Roseville. PG&E relies on three major sources for its gas piping system:
31 Canada, Southwestern United States, and California. Most customers directly
32 purchase their natural gas from the utility company; however, large PG&E gas
33 customers can purchase their gas from the supplier of their choice and pay PG&E
34 only for the gas transportation services they actually use. Overall, the county
35 appears to have adequate energy resources.

1 According to the Placer County Mineral Resource Plan, mineral deposits are
2 widespread throughout Placer County. Known mineral resources in the County
3 include sand, gravel, clay, gold, quartz, decomposed granite, and crushed quarry
4 rock. Clay, stone, gold, and sand and gravel for construction aggregate were
5 extracted as of the adoption of the Mineral Resource Plan in 1994. The Project area
6 within Placer County does not contain any substantial mineral resource areas
7 (Placer County 1994).

8 **City of Roseville**

9 The City of Roseville operates its own electric utility, Roseville Electric, with 50,000
10 customers. The electric system consists of transmission and generation facilities,
11 sub-transmission and substation facilities, and distribution facilities. Roseville
12 Electric owns and operates a 160-megawatt power plant that produces enough
13 electricity to meet up to 40 percent of its energy needs. The natural gas-fired
14 combined-cycle plant uses 1.4 million gallons of recycled water in the plant's energy
15 generation and cooling processes. The city-owned utility also strives to achieve a
16 sustainable energy future by investing in clean, renewable energy projects and
17 energy efficiency through innovative programs including Green Roseville and
18 Blueprint for Energy Efficiency and Solar Technology (BEST) Homes.

19 Mineral resources, consisting of sand and gravel, are limited and no mineral
20 extraction operations currently exist or are anticipated to exist in the city as noted in
21 the General Plan for the City of Roseville.

22 **4.14.2 Regulatory Setting**

23 **Federal**

24 There are no applicable federal regulations associated with energy and mineral
25 resources for the Project.

26 **State**

27 *California's Energy Efficiency Standards for Residential and Nonresidential Buildings*

28 Title 24, Part 6, of the California Code of Regulations establishes California's Energy
29 Efficiency Standards for Residential and Nonresidential Buildings. The standards
30 were updated in 2005 and set a goal of reducing growth in electricity use by 478
31 gigawatt-hours per year (GWh/y) and growth in natural gas use by 8.8 million therms
32 per year (therms/y). The savings attributable to new nonresidential buildings are

1 163.2 GWh/y of electricity savings and 0.5 million therms/y. For nonresidential
2 buildings, the standards establish minimum energy efficiency requirements related to
3 building envelope, mechanical systems (e.g., HVAC and water heating systems),
4 indoor and outdoor lighting, and illuminated signs.

5 *Division of Oil, Gas, and Geothermal Resources*

6 The Division of Oil, Gas, and Geothermal Resources (DOGGR) within the State
7 Department of Conservation supervises the drilling, operation, maintenance, and
8 abandonment of oil, gas, and geothermal wells to protect the environment, public
9 health, and safety, and encourage good conservation practices. The DOGGR
10 collects data on the location of groundwater, oil, gas, and geothermal resources, and
11 records the location of all drilled and abandoned wells.

12 *California Geological Survey*

13 The California Geological Survey within the State Department of Conservation has
14 the responsibility to identify and assist in the utilization of mineral deposits, and to
15 identify geological hazards, including fault locations.

16 *Special Publication 51*

17 California Surface Mining and Reclamation Policies and Procedures have been
18 prepared by the State Mining and Geology Board (SMGB) in cooperation with the
19 Office of Mine Reclamation and the California Geological Survey.

20 *Surface Mining and Reclamation Act*

21 The Surface Mining and Reclamation Act (SMARA), Chapter 9, Division 2 of the
22 Public Resources Code, requires the State Mining and Geology Board to adopt
23 State policy for the reclamation of mined lands and the conservation of mineral
24 resources. These policies are prepared in accordance with the Administrative
25 Procedures Act, (Government Code) and are found in California Code of
26 Regulations, Title 14, Division 2, Chapter 8, Subchapter 1.

27 **Local**

28 *Yolo County General Plan*

29 The following goals, objectives, and policies related to energy resources from the
30 Yolo County General Plan (Yolo County 2002) were considered in this analysis.

1 **ENR 1: Energy Plan Integrated.** Although the Energy Plan was not originally
2 adopted as a part of the General Plan, many of the included policies set forth
3 programs to be achieved by implementation of the adopted elements of the
4 General Plan; therefore, Yolo County shall integrate the policies expressed in the
5 Yolo County Energy Plan into this General Plan, as amended.

6 **ENR 2: Energy Plan Part of the Yolo County General Plan.** Yolo County shall
7 include the Energy Plan as a functional part of this Yolo County General Plan, as
8 amended, for direct application throughout the unincorporated area of the
9 County.

10 **ENR 3: Energy Conservation.** The Yolo County Land Use Element shall be
11 implemented to:

- 12 - Direct the pattern of land use to be compact and related to transit routes
13 and centers and to minimize auto traffic needs;
- 14 - Require energy efficient development and structures;
- 15 - Encourage use of alternate energy sources and energy conservation in all
16 development approvals; and
- 17 - In-fill vacant lots, redevelop urban areas, and increase urban densities,
18 where appropriate.

19 *Cache Creek Resource Management Plan*

20 As discussed above, the Cache Creek Resources Management Plan, adopted
21 August 20, 1996 and amended August 15, 2002, eliminated in-channel commercial
22 mining, and established an improvement program for implementing on-going
23 projects to improve channel stability and restore habitat along the creek banks. The
24 CCRMP provides the policy framework for restoration of the 14.5-mile Lower Cache
25 Creek. It includes specific implementation standards within the Cache Creek
26 Improvement Program (CCIP). The CCIP is the implementation plan for the CCRMP
27 that identifies categories of restoration/protection projects along a precisely defined
28 stretch of the creek. These include bank stabilization, channel maintenance,
29 revegetation, and habitat restoration according to identified design requirements.

1 *Sutter County General Plan*

2 The following goals, objectives and policies related to energy resources from the
3 Sutter County General Plan (Sutter County 1996) were considered in this analysis.

4 **Goal 4.G:** To conserve energy resources in Sutter County.

5 **Policy 4.G-1:** The County shall encourage energy conserving land use forms
6 and practices--such as compact, high density development projects; the
7 provision of bikeways and pedestrian paths; proper solar orientation; and the
8 incorporation of transit routes and facilities.

9 *Sacramento County General Plan*

10 The following goals and policies related to energy resources from the Sacramento
11 County General Plan (Sacramento County 1993) were considered in this analysis.

12 **Air Quality Objective:** The integration of air quality planning with the land
13 use, transportation and energy planning processes.

14 **Policy AQ-2:** Use ARB, SMAQMD and SACOG guidelines for Sacramento
15 County facilities and operations in order to comply with mandated measures
16 to reduce emissions from fuel consumption, energy consumption, surface
17 coating operations, and solvent usage.

18 **Policy AQ-3:** Promote optimal air quality benefits through energy
19 conservation measures in new development.

20 *Placer County General Plan*

21 The following goals, objectives and policies related to energy and mineral resources
22 from the Placer County General Plan (Placer County 1994) were considered in this
23 analysis.

24 **Goal 3.C:** To maximize the efficient use of transportation facilities so as to: 1)
25 reduce travel demand of the County's roadway system; 2) reduce the amount
26 of investment required in new or expanded facilities; 3) reduce the quantity of
27 emissions of pollutants from automobiles; and 4) increase the energy-
28 efficiency of the transportation system.

29 **Policy 6.F.5:** The County shall encourage project proponents to consult early
30 in the planning process with the County regarding the applicability of

1 Countywide indirect and areawide source programs and transportation control
2 measures (TCM) programs. Project review shall also address energy efficient
3 building and site designs and proper storage, use, and disposal of hazardous
4 materials.

5 **Policy 1.J.3:** The County shall discourage the development of any uses that
6 would be incompatible with adjacent mining operations or would restrict future
7 extraction of significant mineral resources.

8 **Policy 1.J.4:** The County shall discourage the development of incompatible
9 land uses in areas that have been identified as having potentially significant
10 mineral resources.

11 *City of Roseville General Plan*

12 The following goals and policies related to energy resources from the City of
13 Roseville General Plan (City of Roseville 2004) were considered in this analysis.

14 **Electric Utility Goal 4:** Aggressively pursue cost-effective and
15 environmentally safe alternative sources of energy and energy conservation
16 measures.

17 **4.14.3 Significance Criteria**

18 **Energy**

19 In accordance with Appendix F of the CEQA Guidelines, potentially significant
20 energy implications of a project should be considered in an EIR. Environmental
21 impacts may include:

22 1. The project's energy requirements and its energy use efficiencies by amount
23 and fuel type for each stage of the project's life cycle including construction,
24 operation, maintenance, and/or removal. If appropriate, the energy
25 intensiveness of materials may be discussed.

26 2. The effects of the project on local and regional energy supplies and on
27 requirements for additional capacity.

28 3. The effects of the project on peak and base period demands for electricity
29 and other forms of energy.

30 4. The degree to which the project complies with existing energy standards.

- 1 5. The effects of the project on energy resources.
- 2 6. The project's projected transportation energy use requirements and its overall
- 3 use of efficient transportation alternatives.

4 **Minerals**

5 An adverse impact on mineral resources is considered significant and would require
6 mitigation if it would:

- 7 1. Result in the loss of availability of a known mineral resource that would be of
- 8 value to the region and the residents of the State.
- 9 2. Result in the loss of availability of a locally-important mineral resource
- 10 recovery site delineated on a local general plan, specific plan or other land
- 11 use plan.

12 **4.14.4 Applicant Proposed Measures**

13 There are no Applicant Proposed Measures (APMs) for Energy and Mineral
14 Resources that have been identified by PG&E in its Environmental Analysis
15 prepared for the CSLC.

16 **4.14.5 Impact Analysis and Mitigation**

17 **Impact Discussion**

18 *Project Life Cycle Energy Requirements*

19 The Project would not require a significant amount of energy resources throughout
20 the Project's life cycle. Energy use efficiencies and fuel type for each stage of the
21 Project's life cycle (including construction, operation, maintenance, and/or removal)
22 would not significantly affect energy resources. Impacts related to Project life cycle
23 energy requirements are expected to be less than significant (Class III).

24 The operation phase of the Project would allow for the transport of additional non-
25 renewable resources (natural gas), although the Project itself would not utilize
26 significant amounts of non-renewable resources. The Project would result in the
27 conveyance of natural gas to end users. Therefore, the Project would result in the
28 off-site emissions related to natural gas usage.

29 The Project would facilitate movement of natural gas in southern Sutter County, Yolo
30 County, Sacramento County, and Placer County. While the Project would facilitate

1 the delivery of non-renewable resources, these resources would be exploited and
2 expended now and in the near future regardless of the proposed Project as the
3 production of natural gas that would be distributed by the Project has been, or would
4 be, approved by permitting agencies. Therefore, impacts would be less than
5 significant (Class III).

6 *Local and Regional Energy Supplies*

7 The Project would not have an adverse impact on local and regional energy supplies
8 or on requirements for additional capacity because construction would be temporary
9 and energy use associated with construction and operation of the proposed Project
10 would not be significant. Impacts to energy resources are expected to be less than
11 significant (Class III). As discussed above under Project Life Cycle Energy
12 Requirements, construction of the Project would require fossil fuels, a nonrenewable
13 resource, to power construction vehicles. However, construction would be
14 temporary and energy use would not be considered significant. While the Project
15 would facilitate the delivery of non-renewable resources, these resources would be
16 exploited and expended now and in the near future regardless of the proposed
17 Project as the production of natural gas that would be distributed by the Project has
18 been, or would be, approved by permitting agencies. Therefore, impacts would be
19 less than significant (Class III).

20 *Energy Demand*

21 The Project would not have an adverse impact on peak and base period demands
22 for electricity and other forms of energy because construction would be temporary
23 and energy use associated with construction and operation of the proposed Project
24 would not be significant. Impacts to energy resources are expected to be less than
25 significant (Class III). As discussed above under Project Life Cycle Energy
26 Requirements, construction of the Project would require fossil fuels, a nonrenewable
27 resource, to power construction vehicles. However, construction would be
28 temporary and energy use would not be considered significant. Therefore, impacts
29 would be less than significant (Class III).

30 *Energy Standards*

31 The Project would comply with existing energy standards. Impacts to energy
32 resources are expected to be less than significant (Class III). The proposed Project
33 would not include the construction of new structures and therefore Title 24,
34 California's Energy Efficiency Standards for Residential and Nonresidential Buildings

1 would not apply to this Project. The Project would not result in the inefficient,
2 unnecessary, or wasteful consumption of energy because construction would be
3 temporary and energy use associated with construction and operation of the
4 proposed Project would not be significant. Therefore, impacts would be less than
5 significant (Class III).

6 *Energy Resources*

7 The Project would not have an adverse impact on energy resources because the
8 Project itself would not utilize significant amounts of non-renewable resources. The
9 short-term energy consumption necessary for the implementation of the proposed
10 Project would result in long-term energy benefits. Impacts to energy resources are
11 expected to be less than significant (Class III). Construction of the Project would
12 require fossil fuels, a nonrenewable resource, to power construction vehicles.

13 The operation phase of the Project would allow for the transport of additional non-
14 renewable resources (natural gas), although the Project itself would not utilize
15 significant amounts of non-renewable resources.

16 The Project would facilitate more efficient movement of natural gas in southern
17 Sutter County, Yolo County, Sacramento County, and Placer County. As stated
18 above, the short-term energy consumption necessary for the implementation of the
19 proposed Project would result in long-term energy benefits including a more efficient
20 distribution system that expends less energy than the current distribution system.
21 While the Project would facilitate the delivery of non-renewable resources, these
22 resources would be exploited and expended now and in the near future regardless
23 of the proposed Project as the production of natural gas that would be distributed by
24 the Project has been, or would be, approved by permitting agencies. Therefore,
25 impacts would be less than significant (Class III).

26 *Transportation Energy Use*

27 Traffic associated with the proposed Project would not result in adverse impacts on
28 energy resources because construction-related traffic would be minimal and
29 operation of the proposed Project would not result in a substantial long-term
30 increase in the number of vehicle trips. Impacts to energy resources are expected to
31 be less than significant (Class III). As discussed in Section 4.13, Traffic and
32 Transportation, construction of the proposed Project would result in a limited number
33 of additional vehicles on the road by temporary construction workers. Construction
34 and installation of the proposed pipeline would require approximately 90 to 130

1 workers. These workers would be dispersed over the pipeline Project. Work crews
2 would only work on a particular segment of the pipeline for two days. Construction
3 of the proposed Project would therefore not result in a significant increase in
4 vehicles on the roads. Operation of the substations would not impact transportation
5 or circulation because the stations would be unmanned facilities. While there would
6 be occasional operation and maintenance activities, the Project would not increase
7 the number of trips on roadways on a regular basis.

8 Project-related traffic would not result in a substantial long-term increase in the
9 number of vehicle trips and thus would not result in an increase in energy use
10 associated with transportation. Therefore, impacts would be less than significant
11 (Class III).

12 *Mineral Resource Valuable to Region or State*

13 The Project would not result in the loss of availability of a known mineral resource
14 that would be of value to the region and the residents of the State, and therefore
15 impacts would be less than significant (Class III). A field examination was
16 conducted by Alvin Franks on June 9, 2008. There were no minerals found that
17 could be affected by the construction of the proposed Project. The field examination
18 of the material close to the roads along the Project alignment found no
19 mineralization that could be affected by the Project as planned. Mineral resources in
20 the Project area are limited and no economic deposits of metallic minerals are
21 known to exist in or near the Project area. A small deposit of natural gas is known to
22 be in the Dunnigan Hills, but not in the vicinity of the pipeline. The primary mineral
23 resources are non-metallic mineral commodities, consisting primarily of gravel and
24 sand, and crushed rock (Franks 2008).

25 *Mineral Resource Recovery Site*

26 The Project would not result in the loss of availability of a locally-important mineral
27 resource recovery site delineated on a local general plan, specific plan or other land
28 use plan (City of Sacramento 2006, City of Roseville 2004, Placer County 1994,
29 Sacramento County 1993, Sutter County 1996, Yolo County 2002, 2008). Impacts
30 would be less than significant (Class III). A field examination was conducted by
31 Alvin Franks on June 9, 2008. There were no minerals found that could be affected
32 by the construction of the proposed Project. The field examination of the material
33 close to the roads along the proposed alignment found no mineralization that could
34 be affected by the Project as planned.

1 **4.14.6 Impacts of Alternatives**

2 A No Project Alternative as well as twelve options have been proposed for the
3 alignment in order to minimize or eliminate environmental impacts of the proposed
4 project and to respond to comments from nearby landowners. The twelve options,
5 labeled A through L, have been analyzed in comparison to the portion of the
6 proposed route that has been avoided as a result of the option. Descriptions of the
7 options can be found in Section 3.0, Alternatives and Cumulative Projects, and are
8 depicted in Figure 3-2A through 3-2K.

9 **No Project Alternative**

10 Without the Project, there would be no temporary construction activities and no long-
11 term transport of non-renewable resources. Thus, there would be no energy or
12 mineral impacts.

13 **Option A**

14 The area through which the Option A alignment would pass has the same energy
15 and mineral resources as the proposed Project. Energy impacts associated with
16 Option A would be the same as the proposed Project because Option A would
17 consist of the construction of a natural gas pipeline in the same area as the
18 proposed Project. There are not any mineral resources to be avoided along the
19 Option A portion of the proposed alignment; therefore, there would be no change in
20 impacts regarding protection of mineral resources. There would not be a change in
21 the magnitude of impacts for any of the significance criteria. Option A would not
22 require a significant amount of energy resources throughout the Project's life cycle
23 since, while the Project would require fossil fuels and would allow for the transport of
24 additional nonrenewable resources (natural gas), the Project itself would not utilize
25 significant amounts of non-renewable resources. Nor would Option A adversely
26 affect local and regional energy supplies or requirements for additional capacity
27 since construction would be temporary and the resources delivered by Option A
28 would be exploited and expended regardless of the Project. Nor would Option A
29 adversely affect peak and base period demands for electricity and other forms of
30 energy since construction would be temporary and thus fossil fuels associated with
31 construction would be limited. Option A would comply with existing energy
32 standards and would not adversely affect energy resources. Traffic associated with
33 Option A would not adversely affect energy resources since the Project would result
34 in only a limited number of construction workers and would not increase the number
35 of trips on roadways on a regular basis during Project operation. Option A would not

1 result in the loss of availability of a known mineral resources that would be of value
2 to the region and the residents of the state, nor would Option A result in the loss of
3 availability of a locally-important mineral resources recovery site delineated on a
4 local general plan, specific plan or other land use plan. No significant mineral
5 resources are located in the Project area that could be affected by the construction
6 of Option A. Therefore, all impacts would remain the same as the proposed Project
7 under Option A.

8 **Option B**

9 The area through which the Option B alignment would pass has the same energy
10 and mineral resources as the proposed Project. Energy impacts associated with
11 Option B would be the same as the proposed Project because Option B would
12 consist of the construction of a natural gas pipeline in the same area as the
13 proposed Project. There are not any mineral resources to be avoided along the
14 Option B portion of the proposed alignment; therefore, there would be no change in
15 impacts regarding protection of mineral resources. There would not be a change in
16 the magnitude of impacts for any of the significance criteria. Option B would not
17 require a significant amount of energy resources throughout the Project's life cycle
18 since, while the Project would require fossil fuels and would allow for the transport of
19 additional nonrenewable resources (natural gas), the Project itself would not utilize
20 significant amounts of non-renewable resources. Nor would Option B adversely
21 affect local and regional energy supplies or requirements for additional capacity
22 since construction would be temporary and the resources delivered by Option B
23 would be exploited and expended regardless of the Project. Nor would Option B
24 adversely affect peak and base period demands for electricity and other forms of
25 energy since construction would be temporary and thus fossil fuels associated with
26 construction would be limited. Option B would comply with existing energy
27 standards and would not adversely affect energy resources. Traffic associated with
28 Option B would not adversely affect energy resources since the Project would result
29 in only a limited number of construction workers and would not increase the number
30 of trips on roadways on a regular basis during Project operation. Option B would not
31 result in the loss of availability of a known mineral resources that would be of value
32 to the region and the residents of the state, nor would Option B result in the loss of
33 availability of a locally-important mineral resources recovery site delineated on a
34 local general plan, specific plan or other land use plan. No significant mineral
35 resources are located in the Project area that could be affected by the construction

1 of Option B. Therefore, all impacts would remain the same as the proposed Project
2 under Option B.

3 **Option C**

4 The area through which the Option C alignment would pass has the same energy
5 and mineral resources as the proposed Project. Energy impacts associated with
6 Option C would be the same as the proposed Project because Option C would
7 consist of the construction of a natural gas pipeline in the same area as the
8 proposed Project. There are not any mineral resources to be avoided along the
9 Option C portion of the proposed alignment; therefore, there would be no change in
10 impacts regarding protection of mineral resources. There would not be a change in
11 the magnitude of impacts for any of the significance criteria. Option C would not
12 require a significant amount of energy resources throughout the Project's life cycle
13 since, while the Project would require fossil fuels and would allow for the transport of
14 additional nonrenewable resources (natural gas), the Project itself would not utilize
15 significant amounts of non-renewable resources. Nor would Option C adversely
16 affect local and regional energy supplies or requirements for additional capacity
17 since construction would be temporary and the resources delivered by Option C
18 would be exploited and expended regardless of the Project. Nor would Option C
19 adversely affect peak and base period demands for electricity and other forms of
20 energy since construction would be temporary and thus fossil fuels associated with
21 construction would be limited. Option C would comply with existing energy
22 standards and would not adversely affect energy resources. Traffic associated with
23 Option C would not adversely affect energy resources since the Project would result
24 in only a limited number of construction workers and would not increase the number
25 of trips on roadways on a regular basis during Project operation. Option C would not
26 result in the loss of availability of a known mineral resources that would be of value
27 to the region and the residents of the state, nor would Option C result in the loss of
28 availability of a locally-important mineral resources recovery site delineated on a
29 local general plan, specific plan or other land use plan. No significant mineral
30 resources are located in the Project area that could be affected by the construction
31 of Option C. Therefore, all impacts would remain the same as the proposed Project
32 under Option C.

33 **Option D**

34 The area through which the Option D alignment would pass has the same energy
35 and mineral resources as the proposed Project. Energy impacts associated with

1 Option D would be the same as the proposed Project because Option D would
2 consist of the construction of a natural gas pipeline in the same area as the
3 proposed Project. There are not any mineral resources to be avoided along the
4 Option D portion of the proposed alignment; therefore, there would be no change in
5 impacts regarding protection of mineral resources. There would not be a change in
6 the magnitude of impacts for any of the significance criteria. Option D would not
7 require a significant amount of energy resources throughout the Project's life cycle
8 since, while the Project would require fossil fuels and would allow for the transport of
9 additional nonrenewable resources (natural gas), the Project itself would not utilize
10 significant amounts of non-renewable resources. Nor would Option D adversely
11 affect local and regional energy supplies or requirements for additional capacity
12 since construction would be temporary and the resources delivered by Option D
13 would be exploited and expended regardless of the Project. Nor would Option D
14 adversely affect peak and base period demands for electricity and other forms of
15 energy since construction would be temporary and thus fossil fuels associated with
16 construction would be limited. Option D would comply with existing energy
17 standards and would not adversely affect energy resources. Traffic associated with
18 Option D would not adversely affect energy resources since the Project would result
19 in only a limited number of construction workers and would not increase the number
20 of trips on roadways on a regular basis during Project operation. Option D would not
21 result in the loss of availability of a known mineral resources that would be of value
22 to the region and the residents of the state, nor would Option D result in the loss of
23 availability of a locally-important mineral resources recovery site delineated on a
24 local general plan, specific plan or other land use plan. No significant mineral
25 resources are located in the Project area that could be affected by the construction
26 of Option D. Therefore, all impacts would remain the same as the proposed Project
27 under Option D.

28 **Option E**

29 The area through which the Option E alignment would pass has the same energy
30 and mineral resources as the proposed Project. Energy impacts associated with
31 Option E would be the same as the proposed Project because Option E would
32 consist of the construction of a natural gas pipeline in the same area as the
33 proposed Project. There are not any mineral resources to be avoided along the
34 Option E portion of the proposed alignment; therefore, there would be no change in
35 impacts regarding protection of mineral resources. There would not be a change in
36 the magnitude of impacts for any of the significance criteria. Option E would not

1 require a significant amount of energy resources throughout the Project's life cycle
2 since, while the Project would require fossil fuels and would allow for the transport of
3 additional nonrenewable resources (natural gas), the Project itself would not utilize
4 significant amounts of non-renewable resources. Nor would Option E adversely
5 affect local and regional energy supplies or requirements for additional capacity
6 since construction would be temporary and the resources delivered by Option E
7 would be exploited and expended regardless of the Project. Nor would Option E
8 adversely affect peak and base period demands for electricity and other forms of
9 energy since construction would be temporary and thus fossil fuels associated with
10 construction would be limited. Option E would comply with existing energy
11 standards and would not adversely affect energy resources. Traffic associated with
12 Option E would not adversely affect energy resources since the Project would result
13 in only a limited number of construction workers and would not increase the number
14 of trips on roadways on a regular basis during Project operation. Option E would not
15 result in the loss of availability of a known mineral resources that would be of value
16 to the region and the residents of the state, nor would Option E result in the loss of
17 availability of a locally-important mineral resources recovery site delineated on a
18 local general plan, specific plan or other land use plan. No significant mineral
19 resources are located in the Project area that could be affected by the construction
20 of Option E. Therefore, all impacts would remain the same as the proposed Project
21 under Option E.

22 **Option F**

23 The area through which the Option F alignment would pass has the same energy
24 and mineral resources as the proposed Project. Energy impacts associated with
25 Option F would be the same as the proposed Project because Option F would
26 consist of the construction of a natural gas pipeline in the same area as the
27 proposed Project. There are not any mineral resources to be avoided along the
28 Option F portion of the proposed alignment; therefore, there would be no change in
29 impacts regarding protection of mineral resources. There would not be a change in
30 the magnitude of impacts for any of the significance criteria. Option F would not
31 require a significant amount of energy resources throughout the Project's life cycle
32 since, while the Project would require fossil fuels and would allow for the transport of
33 additional nonrenewable resources (natural gas), the Project itself would not utilize
34 significant amounts of non-renewable resources. Nor would Option F adversely
35 affect local and regional energy supplies or requirements for additional capacity
36 since construction would be temporary and the resources delivered by Option F

1 would be exploited and expended regardless of the Project. Nor would Option F
2 adversely affect peak and base period demands for electricity and other forms of
3 energy since construction would be temporary and thus fossil fuels associated with
4 construction would be limited. Option F would comply with existing energy
5 standards and would not adversely affect energy resources. Traffic associated with
6 Option F would not adversely affect energy resources since the Project would result
7 in only a limited number of construction workers and would not increase the number
8 of trips on roadways on a regular basis during Project operation. Option F would not
9 result in the loss of availability of a known mineral resources that would be of value
10 to the region and the residents of the state, nor would Option F result in the loss of
11 availability of a locally-important mineral resources recovery site delineated on a
12 local general plan, specific plan or other land use plan. No significant mineral
13 resources are located in the Project area that could be affected by the construction
14 of Option F. Therefore, all impacts would remain the same as the proposed Project
15 under Option F.

16 **Option G**

17 The area through which the Option G alignment would pass has the same energy
18 and mineral resources as the proposed Project. Energy impacts associated with
19 Option G would be the same as the proposed Project because Option G would
20 consist of the construction of a natural gas pipeline in the same area as the
21 proposed Project. There are not any mineral resources to be avoided along the
22 Option G portion of the proposed alignment; therefore, there would be no change in
23 impacts regarding protection of mineral resources. There would not be a change in
24 the magnitude of impacts for any of the significance criteria. Option G would not
25 require a significant amount of energy resources throughout the Project's life cycle
26 since, while the Project would require fossil fuels and would allow for the transport of
27 additional nonrenewable resources (natural gas), the Project itself would not utilize
28 significant amounts of non-renewable resources. Nor would Option G adversely
29 affect local and regional energy supplies or requirements for additional capacity
30 since construction would be temporary and the resources delivered by Option G
31 would be exploited and expended regardless of the Project. Nor would Option G
32 adversely affect peak and base period demands for electricity and other forms of
33 energy since construction would be temporary and thus fossil fuels associated with
34 construction would be limited. Option G would comply with existing energy
35 standards and would not adversely affect energy resources. Traffic associated with
36 Option G would not adversely affect energy resources since the Project would result

1 in only a limited number of construction workers and would not increase the number
2 of trips on roadways on a regular basis during Project operation. Option G would not
3 result in the loss of availability of a known mineral resources that would be of value
4 to the region and the residents of the state, nor would Option G result in the loss of
5 availability of a locally-important mineral resources recovery site delineated on a
6 local general plan, specific plan or other land use plan. No significant mineral
7 resources are located in the Project area that could be affected by the construction
8 of Option G. Therefore, all impacts would remain the same as the proposed Project
9 under Option G.

10 **Option H**

11 The area through which the Option H alignment would pass has the same energy
12 and mineral resources as the proposed Project. Energy impacts associated with
13 Option H would be the same as the proposed Project because Option H would
14 consist of the construction of a natural gas pipeline in the same area as the
15 proposed Project. There are not any mineral resources to be avoided along the
16 Option H portion of the proposed alignment; therefore, there would be no change in
17 impacts regarding protection of mineral resources. There would not be a change in
18 the magnitude of impacts for any of the significance criteria. Option H would not
19 require a significant amount of energy resources throughout the Project's life cycle
20 since, while the Project would require fossil fuels and would allow for the transport of
21 additional nonrenewable resources (natural gas), the Project itself would not utilize
22 significant amounts of non-renewable resources. Nor would Option H adversely
23 affect local and regional energy supplies or requirements for additional capacity
24 since construction would be temporary and the resources delivered by Option H
25 would be exploited and expended regardless of the Project. Nor would Option H
26 adversely affect peak and base period demands for electricity and other forms of
27 energy since construction would be temporary and thus fossil fuels associated with
28 construction would be limited. Option H would comply with existing energy
29 standards and would not adversely affect energy resources. Traffic associated with
30 Option H would not adversely affect energy resources since the Project would result
31 in only a limited number of construction workers and would not increase the number
32 of trips on roadways on a regular basis during Project operation. Option H would not
33 result in the loss of availability of a known mineral resources that would be of value
34 to the region and the residents of the state, nor would Option H result in the loss of
35 availability of a locally-important mineral resources recovery site delineated on a
36 local general plan, specific plan or other land use plan. No significant mineral

1 resources are located in the Project area that could be affected by the construction
2 of Option H. Therefore, all impacts would remain the same as the proposed Project
3 under Option H.

4 **Option I**

5 The area through which the Option I alignment would pass has the same energy and
6 mineral resources as the proposed Project. Energy impacts associated with Option I
7 would be the same as the proposed Project because Option I would consist of the
8 construction of a natural gas pipeline in the same area as the proposed Project.
9 There are not any mineral resources to be avoided along the Option I portion of the
10 proposed alignment; therefore, there would be no change in impacts regarding
11 protection of mineral resources. There would not be a change in the magnitude of
12 impacts for any of the significance criteria. Option I would not require a significant
13 amount of energy resources throughout the Project's life cycle since, while the
14 Project would require fossil fuels and would allow for the transport of additional
15 nonrenewable resources (natural gas), the Project itself would not utilize significant
16 amounts of non-renewable resources. Nor would Option I adversely affect local and
17 regional energy supplies or requirements for additional capacity since construction
18 would be temporary and the resources delivered by Option I would be exploited and
19 expended regardless of the Project. Nor would Option I adversely affect peak and
20 base period demands for electricity and other forms of energy since construction
21 would be temporary and thus fossil fuels associated with construction would be
22 limited. Option I would comply with existing energy standards and would not
23 adversely affect energy resources. Traffic associated with Option I would not
24 adversely affect energy resources since the Project would result in only a limited
25 number of construction workers and would not increase the number of trips on
26 roadways on a regular basis during Project operation. Option I would not result in
27 the loss of availability of a known mineral resources that would be of value to the
28 region and the residents of the state, nor would Option I result in the loss of
29 availability of a locally-important mineral resources recovery site delineated on a
30 local general plan, specific plan or other land use plan. No significant mineral
31 resources are located in the Project area that could be affected by the construction
32 of Option I. Therefore, all impacts would remain the same as the proposed Project
33 under Option I.

1 **Option J**

2 The area through which the Option J alignment would pass has the same energy
3 and mineral resources as the proposed Project. Energy impacts associated with
4 Option J would be the same as the proposed Project because Option J would
5 consist of the construction of a natural gas pipeline in the same area as the
6 proposed Project. There are not any mineral resources to be avoided along the
7 Option J portion of the proposed alignment; therefore, there would be no change in
8 impacts regarding protection of mineral resources. There would not be a change in
9 the magnitude of impacts for any of the significance criteria. Option J would not
10 require a significant amount of energy resources throughout the Project's life cycle
11 since, while the Project would require fossil fuels and would allow for the transport of
12 additional nonrenewable resources (natural gas), the Project itself would not utilize
13 significant amounts of non-renewable resources. Nor would Option J adversely
14 affect local and regional energy supplies or requirements for additional capacity
15 since construction would be temporary and the resources delivered by Option J
16 would be exploited and expended regardless of the Project. Nor would Option J
17 adversely affect peak and base period demands for electricity and other forms of
18 energy since construction would be temporary and thus fossil fuels associated with
19 construction would be limited. Option J would comply with existing energy standards
20 and would not adversely affect energy resources. Traffic associated with Option J
21 would not adversely affect energy resources since the Project would result in only a
22 limited number of construction workers and would not increase the number of trips
23 on roadways on a regular basis during Project operation. Option J would not result
24 in the loss of availability of a known mineral resources that would be of value to the
25 region and the residents of the state, nor would Option J result in the loss of
26 availability of a locally-important mineral resources recovery site delineated on a
27 local general plan, specific plan or other land use plan. No significant mineral
28 resources are located in the Project area that could be affected by the construction
29 of Option J. Therefore, all impacts would remain the same as the proposed Project
30 under Option J.

31 **Option K**

32 The area through which the Option K alignment would pass has the same energy
33 and mineral resources as the proposed Project. Energy impacts associated with
34 Option K would be the same as the proposed Project because Option K would
35 consist of the construction of a natural gas pipeline in the same area as the
36 proposed Project. There are not any mineral resources to be avoided along the

1 Option K portion of the proposed alignment; therefore, there would be no change in
2 impacts regarding protection of mineral resources. There would not be a change in
3 the magnitude of impacts for any of the significance criteria. Option K would not
4 require a significant amount of energy resources throughout the Project's life cycle
5 since, while the Project would require fossil fuels and would allow for the transport of
6 additional nonrenewable resources (natural gas), the Project itself would not utilize
7 significant amounts of non-renewable resources. Nor would Option K adversely
8 affect local and regional energy supplies or requirements for additional capacity
9 since construction would be temporary and the resources delivered by Option K
10 would be exploited and expended regardless of the Project. Nor would Option K
11 adversely affect peak and base period demands for electricity and other forms of
12 energy since construction would be temporary and thus fossil fuels associated with
13 construction would be limited. Option K would comply with existing energy
14 standards and would not adversely affect energy resources. Traffic associated with
15 Option K would not adversely affect energy resources since the Project would result
16 in only a limited number of construction workers and would not increase the number
17 of trips on roadways on a regular basis during Project operation. Option K would not
18 result in the loss of availability of a known mineral resources that would be of value
19 to the region and the residents of the state, nor would Option K result in the loss of
20 availability of a locally-important mineral resources recovery site delineated on a
21 local general plan, specific plan or other land use plan. No significant mineral
22 resources are located in the Project area that could be affected by the construction
23 of Option K. Therefore, all impacts would remain the same as the proposed Project
24 under Option K.

25 **Option L**

26 The area through which the Option L alignment would pass has the same energy
27 and mineral resources as the proposed Project. Energy impacts associated with
28 Option L would be the same as the proposed Project because Option L would
29 consist of the construction of a natural gas pipeline in the same area as the
30 proposed Project. There are not any mineral resources to be avoided along the
31 Option L portion of the proposed alignment; therefore, there would be no change in
32 impacts regarding protection of mineral resources. There would not be a change in
33 the magnitude of impacts for any of the significance criteria. Option L would not
34 require a significant amount of energy resources throughout the Project's life cycle
35 since, while the Project would require fossil fuels and would allow for the transport of
36 additional nonrenewable resources (natural gas), the Project itself would not utilize

1 significant amounts of non-renewable resources. Nor would Option L adversely
 2 affect local and regional energy supplies or requirements for additional capacity
 3 since construction would be temporary and the resources delivered by Option L
 4 would be exploited and expended regardless of the Project. Nor would Option L
 5 adversely affect peak and base period demands for electricity and other forms of
 6 energy since construction would be temporary and thus fossil fuels associated with
 7 construction would be limited. Option L would comply with existing energy
 8 standards and would not adversely affect energy resources. Traffic associated with
 9 Option L would not adversely affect energy resources since the Project would result
 10 in only a limited number of construction workers and would not increase the number
 11 of trips on roadways on a regular basis during Project operation. Option L would not
 12 result in the loss of availability of a known mineral resources that would be of value
 13 to the region and the residents of the state, nor would Option L result in the loss of
 14 availability of a locally-important mineral resources recovery site delineated on a
 15 local general plan, specific plan or other land use plan. No significant mineral
 16 resources are located in the Project area that could be affected by the construction
 17 of Option L. Therefore, all impacts would remain the same as the proposed Project
 18 under Option L.

19 **Table 4.14-1: Comparison of Alternatives for Energy and Minerals**

Alternative	Comparison with Proposed Project
No Project	No Impacts
Option A	Similar Impacts
Option B	Similar Impacts
Option C	Similar Impacts
Option D	Similar Impacts
Option E	Similar Impacts
Option F	Similar Impacts
Option G	Similar Impacts
Option H	Similar Impacts
Option I	Similar Impacts
Option J	Similar Impacts
Option K	Similar Impacts
Option L	Similar Impacts
Source: Michael Brandman Associates 2009.	

1 **4.14.7 Cumulative Projects Impact Analysis**

2 The construction of other projects in the vicinity of the proposed Project could
3 cumulatively affect energy resources. Future projects considered in the cumulative
4 projects impact analysis are listed in Table 3-2.

5 Although these other projects would consume additional energy resources, they
6 were all anticipated in various General Plans, and each will be required to prepare a
7 Utilities and Service systems analysis that demonstrates there are sufficient natural
8 gas and electricity resources to meet Project needs. When considered with other
9 past, present, and reasonably foreseeable projects the proposed Project would not
10 result in any long-term impacts on energy resources, and would therefore not be
11 cumulatively considerable. Cumulative impacts on energy resources would be less
12 than significant (Class III).

13 **4.14.8 Summary of Impacts and Mitigation Measures**

14 Since the Project would not require a significant amount of energy resources
15 throughout the Project's life cycle, it would not have an adverse impact on local and
16 regional energy supplies or on requirements for additional capacity; would not have
17 an adverse impact on peak and base period demands for electricity and other forms
18 of energy; would comply with existing energy standards; would not have an adverse
19 impact on energy resources; would not result in traffic that affects energy resources;
20 and would not result in the loss of availability of a known mineral resource that would
21 be of value to the region and the residents of the state. No mitigation measures
22 have been proposed.

23

24

25