

EXECUTIVE SUMMARY

A. INTRODUCTION/BACKGROUND

On April 9, 2007, SNGS, LLC filed an application (Application No. 07-04-013) and a Proponent's Environmental Assessment (PEA) to the California Public Utilities Commission (CPUC) for the Sacramento Natural Gas Storage (SNGS) Facility (the Proposed Project). The purpose of the application is to obtain a Certificate of Public Convenience and Necessity (CPCN) from the CPUC. A supplement to the original application and PEA was submitted on July 16, 2007. This amendment included the Yolo County interconnect component, which consisted of a buried 12-inch interconnection pipeline between Sacramento Municipal Utility District (SMUD) Line 700 and the Pacific Gas and Electric (PG&E) Line 172 and associated metering facilities located in the City of West Sacramento and Yolo County. On September 12, 2008, SNGS, LLC filed a second amendment, which withdrew its proposal to include the Yolo County interconnect and metering station.

As proposed by SNGS, LLC, the Proposed Project would use a depleted natural gas reservoir (Florin Gas Field) located within the City of Sacramento and partially within and adjacent to an unincorporated area of the County of Sacramento to store up to 7.5 billion cubic feet (bcf) of natural gas. The Proposed Project includes the existing underground natural gas storage reservoir, a wellhead site, a compressor station, a buried 16-inch interconnection pipeline between the wellhead and compressor site, and a buried 16-inch interconnection pipeline between the compressor site and SMUD Line 700. Please refer to Section B, Description of Proposed Project, of this environmental impact report (EIR) for additional details regarding the project.

The Florin Gas Field reservoir is situated approximately 3,800 feet below the ground surface. Natural gas was previously extracted from the Florin Gas Field by Proctor and Gamble, Vendada National, TXO Production Corporation, and Union Oil Company until 1987 when the natural gas supply was depleted. Shortly thereafter, the wells and appurtenance facilities were capped and abandoned in accordance with regulations set forth by the Division of Oil, Gas, and Geothermal Resources (DOGGR).

SNGS, LLC's stated objectives for the SNGS Facility are as follows:

1. Provide strategically located natural gas storage in California.
2. Provide a secure and reliable gas supply for the Sacramento metropolitan area in the event of a disruption of service from the main supply pipeline that services the area.
3. Satisfy SMUD's natural gas storage needs to specifically provide a fuel supply to power their electrical generating plants. The total volumetric capacity available to SMUD under

its Storage Service Agreement with SNGS, LLC is 4.0 bcf, which yields approximately a 30-day supply.

The CPUC is the state lead agency responsible for compliance with the California Environmental Quality Act (CEQA). This EIR has been prepared by CPUC in compliance with CEQA guidelines. This EIR discloses environmental impacts that could result from the construction and operation of SNGS, LLC's Proposed Project and mitigation measures, which, if adopted by the CPUC or other responsible agencies, could avoid or minimize significant environmental effects. In accordance with CEQA guidelines, this EIR also evaluates alternatives to the Proposed Project that could avoid or minimize the significant environmental effects. This EIR provides a comparison of the environmental effects of the Proposed Project and the alternatives, and identifies the Environmentally Superior Alternative.

The Proposed Project EIR is an information document only and does not make a recommendation regarding the approval or denial of the project. The purpose of the EIR is to inform the public on the environmental setting and impacts of the Proposed Project and alternatives. This EIR will be used by the CPUC in conducting the proceeding to determine whether to grant SNGS, LLC's requested CPCN. This Executive Summary (ES) provides an overview of the Proposed Project and the alternatives considered, as well as the environmental findings and mitigation measures specified in this EIR.

A.1 Description of the Proposed Project

Figure ES-1 provides an overview of the Proposed Project. Project facilities can be divided into the following components:

1. **Florin Gas Field:** The gas field is approximately 3,800 feet belowground and underlies approximately 379 acres in the City of Sacramento and the County of Sacramento. Several land uses are located above the field, including residential, industrial, and commercial (including the former Sacramento Army Depot), and park uses (Danny Nunn Park).
2. **Wellhead Site:** The wellhead site is proposed to be located at the northeast corner of the intersection of Junipero Street and Power Inn Road. Up to six new injection/withdrawal wells, one water disposal well, and one observation well are proposed to be drilled and constructed on a currently vacant 4-acre parcel. A 10-foot-tall masonry wall would be constructed around the property. Access to the site would be through a gate on Junipero Street. Five water tanks measuring 12 feet in diameter and 10 feet high would be situated on the west side of the site and would be used to temporarily store water inadvertently extracted with the natural gas. In addition, a control shelter and injection pumps would be installed within the fenced/walled limits to operate the wells and other equipment on site.

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- 3. Compressor Station:** The compressor station is proposed to be located northeast of the wellhead site on the former Sacramento Army Depot that is now a business/industrial park called Depot Park in the City of Sacramento. The proposed compressor station would be located on an approximately 5-acre site on a mostly undeveloped portion of Depot Park. The compressor station would include two electric drive compressors, each paired with a 3,500 horsepower (hp) electric motor. A back-up compressor with an electric motor of up to 3,500 hp may also be installed. Electric power to the site would be provided by SMUD and would require 4,160 volts of electricity. The compressors would be housed in a building approximately 50 by 110 feet and would stand approximately 24 feet high. A 6-foot-high chain link security fence would surround the compressor station. The compressors would provide sufficient pressure to inject the natural gas into the Florin Gas Field. The compressors and valving would also regulate the pressure in the interconnect pipelines that would connect to the existing SMUD pipeline. Metering equipment would be located at the compressor station site for the SMUD pipeline interconnect.
- 4. Pipeline Connections:** Pipeline components would connect from the wellhead site to the compressor station and from the compressor station to an existing SMUD Line 700 located beneath Fruitridge Road. Each pipeline connection is described below:

 - Connection from the wellhead to the compressor station would require a 16-inch-diameter pipeline. This pipeline would be approximately 1.5 miles long and would be installed at a minimum depth of 6 feet below grade.
 - Connection from the compressor station to the existing SMUD Line 700 would require a 16-inch diameter pipeline from the compressor station to the SMUD interconnect just south of Fruitridge Road within Depot Park. This pipeline would be approximately 0.8-mile long and would be installed at a minimum depth of 6 feet below grade.

A.2 Environmental Setting of the Proposed Project

The Proposed Project evaluated in this EIR includes four primary components including the natural gas field reservoir, wellhead site, compressor station, and the connecting pipelines. The wellhead site and compressor station sites are generally devoid of vegetation. Existing uses surrounding the wellhead site are industrial and commercial to the north, south, and east of the site, and residential to the west of the site, on the west side of Power Inn Road. The compressor station site is surrounded by industrial uses, with open space to the south and west. A Union Pacific Railroad (UPRR) right-of-way forms the western boundary of Depot Park. Pipeline components are located near or adjacent to residential uses, vacant land, and industrial park uses.

A.3 Summary of Public Involvement Activities

The CEQA EIR process for the SNGS, LLC Proposed Project began with the CPUC's issuance of the Notice of Preparation (NOP) of an EIR.

- The CPUC issued the NOP on November 16, 2007, and distributed it to the State Clearinghouse and federal, state, and local trustees and agencies that may be affected by the Proposed Project. The NOP was sent to 6 federal agencies, 21 state agencies, and 41 local agencies and planning groups. The NOP was also distributed to private organizations, Native American groups, and local libraries. The public notice was also sent to 749 private citizens including property owners within 300 feet of the Proposed Project, as well as any party previously requesting notice in writing to the CPUC. In addition, copies of the NOP were placed in libraries within the vicinity of the project. The public notices were also published on November 16, 2007, in The Sacramento Bee. Additionally, information was posted on the internet on the project website at http://www.cpuc.ca.gov/environment/info/dudek/sngs/SNGS_Home.htm as described in the Public Notice.
- One public scoping meeting was held on December 6, 2007, prior to the selection of alternatives and the preparation of the analysis documented in this EIR. The scoping meeting was held at the Depot Conference Center at 8215 Ferguson Avenue in the City of Sacramento.
- Fifteen persons attended the scoping meeting, including representatives from local and state agencies, organizations, and private citizens. Six individuals provided written comments during the public scoping meeting.
- Nine letters were received during the NOP scoping period (November 16 to December 18, 2007) from public agencies and private citizens. One letter was received after the scoping period. In December 2007, a comprehensive Scoping Report was issued summarizing concerns received from the public and various agencies. Commenting agencies and scoping meeting attendees were notified that the Scoping Report was on the CPUC's website available for review.

A.4 Public Scoping Issues

Written and oral comments were received during the CEQA scoping process from the general public as well as the following federal, state, and local agencies, and private and public organizations:

State Agencies

- California Department of Conservation, DOGGR
- Governor's Office of Planning and Research, State Clearinghouse and Planning Unit
- California Department of Transportation, District 3-Sacramento Area Office

Local Agencies and Planning Groups

- City of Sacramento, Fire Department
- City of Sacramento, Development Services Department
- County of Sacramento, Department of Transportation

Public and Private Organizations

- PG&E
- Remy, Thomas, Moose, and Manley
- UPRR (received outside NOP comment period)

Scoping Meeting Commenters

- Tomas Buford, City of Sacramento
- Kevin McCarty, City of Sacramento, Councilmember District 6
- Robert Habel, DOGGR
- Chris Butcher, Remy, Thomas, Moose, and Manley
- Constance Slider, Avondale Glen-Elder Neighborhood (AGENA)
- Diana Portillo, Colonial Manor Neighborhood Association

The majority of public comments focused on the potential impacts to public safety of the SNGS Facility located within an urban setting, most often expressing concerns with issues arising from gas migration from the gas field and potential for risk of explosion and fire. The specific issues raised during the public scoping process are summarized below according to three major themes: project description and objectives, alternatives, and environmental issues.

Project Description and Objectives

Public comments requested that the EIR should fully disclose all aspects of the project. Several comments stated that further explanation and detail of project components should be provided.

Alternatives

Comments from government agencies and private organizations suggested alternatives, including alternative non-urban locations to minimize impacts to public health and safety.

Environmental Issues

Public and agency comments raised concerns regarding the potential impacts of the SNGS Facility on the environment, most often expressing concerns with conflicts with planned uses and public health and safety. Other concerns dealt with traffic and transportation, land use compatibility, noise, public services and utilities, air quality, hydrology and water quality, geologic hazards, biological resources, and cultural resources impacts.

A.5 Areas of Controversy Known to the Lead Agency

A number of areas of known controversy have been identified based on public scoping information provided to the CPUC and testimony before the Administrative Law Judge. These included the following:

- Potential for leakage of natural gas from the reservoir to the groundwater aquifer and surface in this area of high population density
- Potential for fire and explosion from pipelines and other facilities associated with the Proposed Project
- Potential impact of using hazardous chemicals including methyl mercaptan, an odorizing agent for natural gas
- Use of portions of Depot Park for some of the project facilities
- The size of the reservoir based upon disagreement among experts.

B. ALTERNATIVES

Alternatives to SNGS, LLC's Proposed Project are identified and evaluated in accordance with CEQA Guidelines. CEQA Guidelines (Section 15126.6(a)) state:

An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.

CEQA Guidelines (Section 15364) define feasibility as:

. . . capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

Alternatives to the Proposed Project were suggested during the scoping period (November through December 2007) by the general public and local agencies in response to the NOP. Other alternatives were developed by EIR preparers or presented by SNGS, LLC. In total, 18 alternatives in addition to the No Project Alternative were considered in the screening process. Alternatives considered included six alternative storage site locations within Sacramento County and in close proximity to SMUD's service area; possible combination of these alternative gas storage sites; alternative storage sites outside the Sacramento area; seven project design alternatives as identified by SNGS, LLC for the proposed Florin Gas Field project; and three alternatives to natural gas storage. Alternatives to natural gas storage include methods of meeting project objectives that do not require development of a new underground natural gas storage facility (e.g., additional natural gas supply, energy conservation, and/or alternative fuels).

Alternatives to the Proposed Project were screened according to CEQA guidelines to determine those alternatives to carry forward for analysis in the EIR and alternatives to eliminate from detailed consideration. The alternatives were primarily evaluated according to: (1) whether they would meet most of the basic project objectives; (2) whether they would be feasible considering legal, regulatory, and technical constraints; and (3) whether they have the potential to substantially lessen any of the significant effects of the Proposed Project. Other factors considered, in accordance with CEQA Guidelines (Section 15126.6(f)), were site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and proponent's control over alternative sites. Economic factors or costs of the alternatives (beyond economic feasibility) were not considered in the screening of alternatives since CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly" (CEQA Guidelines Section 15126.6(b)).

The detailed results of the alternatives screening analysis are contained in Section C to this EIR (Alternatives). A summary description of the alternatives considered and the results of screening are provided in Section B.1. Figure ES-2 illustrates the geographic locations of alternative gas fields considered for evaluation in this EIR analysis.

B.1 Alternatives Fully Evaluated in the EIR

B.1.1 Alternative Gas Fields

Freeport Gas Field Alternative

Description: The Freeport Gas Field is located on a suburban fringe site and is partially located under the Sacramento Regional Wastewater Treatment Plant (SRWTP). The field is surrounded to the north, west, and south by Elk Grove, population 59,984, a neighborhood of Laguna Creek, which is a suburb of Sacramento. The Interstate 5 (I-5) freeway crosses the western boundary of the site. Working gas storage capacity in this field is estimated to be over 1 bcf. Development of this field would involve constructing facilities similar to those required for the Proposed Project, including injection/withdrawal wells, compressor station, and underground connecting pipeline(s) between the wells and compressor station, as well as an interconnecting pipeline from the gas field to SMUD's natural gas pipeline system. Connection to the SMUD system under this alternative would require the construction of a 16-inch interconnect pipeline for approximately 1 mile through rural areas. This alternative would cost roughly the same to construct as the Proposed Project but would only provide storage capacity for approximately one-seventh of that provided by the Proposed Project.

Rationale for Full Analysis: Development of the Freeport Gas Field is technically feasible and would provide a natural gas storage field in a suburban fringe site, which may reduce the potential safety impacts associated with the project while meeting project objectives 1 and 2 and partially meeting project objective 3. This alternative has been recommended to be carried forward for further analysis in the EIR as it would partially meet project objectives, is technically feasible, and has the potential to reduce project impacts.

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Snodgrass Slough Gas Field Alternative

Description: The Snodgrass Slough Gas Field is located in an agricultural area. To the east and adjacent of the field is the Reclamation District 551 Borrow Canal. The Sacramento River and California State Highway 160 are located approximately 3 miles to the west of the site. Walnut Grove, located approximately 4 miles to the south of the site, is the nearest population center with a population of 669 people. Working gas storage capacity in this field is estimated to be greater than 2 bcf. Development of this field would involve constructing facilities similar to those required for the Proposed Project, including injection/withdrawal wells, compressor station, and underground connecting pipeline(s) between the wells and compressor station, as well as an interconnecting pipeline from the gas field to SMUD's natural gas pipeline system. Connection to the SMUD system under this alternative would require the construction of an approximately 16-inch interconnect pipeline for approximately 5 miles through rural areas. Construction of this interconnect pipeline would require horizontal directional drilling (HDD) across the slough, I-5, and the UPRR. This alternative would be more costly to implement than the Proposed Project because of the longer pipeline that would be required. In addition, it would only store approximately one-third of the gas that the Proposed Project would store.

Rationale for Full Analysis: Development of the Snodgrass Slough Gas Field would provide a natural gas storage field outside of an urban area, thereby reducing the potential public safety impacts associated with the Proposed Project while partially meeting project objectives 1, 2, and 3. While this field has produced natural gas between 1993 and 1998, the geologic structure has not been studied in detail; therefore, the technical feasibility may be limited and require further geologic evaluation and special engineering. While careful consideration needs to be given to the potential technical limitations of this alternative, it may be potentially feasible. Therefore, it has been recommended to be carried forward for further analysis in the EIR, as it would partially meet project objectives, may be technically feasible, and has the ability to reduce project impacts.

Thornton Gas Field Alternative

Description: The Thornton Gas Field is located in a predominantly agricultural area. The field is located less than a mile east of Franklin Boulevard and approximately 1.5 miles east of the I-5 freeway. The Cosumnes River Preserve is adjacent to the field to the north. The nearest population center is Thornton, which is located approximately 1 mile to the south of the site and has a population of 4,650 people. The Thornton Gas Field is large with a working gas storage capacity greater than 7.5 bcf. Development of this field would involve constructing facilities similar to those required for the Proposed Project, including injection/withdrawal wells, compressor station, and underground connecting pipeline(s) between the wells and compressor station, as well as an interconnecting pipeline from the gas field to SMUD's natural gas pipeline

system. Connection to the SMUD system under this alternative would require the construction of a 7-mile, 16-inch-diameter interconnect pipeline through primarily rural areas. This alternative would store approximately the same amount of gas as the Proposed Project but would be more costly to construct due to the increased size. This alternative would also require the injection of cushion gas, which would not be recoverable and would also increase the cost of this alternative.

Rationale for Full Analysis: Development of the Thornton Gas Field is technically feasible and would provide a natural gas storage field outside of an urban area, thereby reducing potential health and safety impacts associated with the Proposed Project while meeting project objectives. While this alternative may create additional impacts associated with construction and operation of proposed facilities adjacent to the Cosumnes River Preserve, it has been recommended to be carried forward for further analysis in the EIR as it would meet project objectives, is technically feasible, and has the ability to reduce project impacts assuming facilities would be located outside the Cosumnes River Preserve.

B.1.2 Project Design Alternatives

The following are project design alternatives identified by SNGS, LLC for the Proposed Project, which consider alternative connecting pipeline routes between the project's facilities. Under these project design alternatives, the project facilities would remain the same as the Proposed Project and only the pipeline route between the wellhead site and compressor station would differ.

Alternative Wellhead Site to Compressor Station Pipeline Route 1

Project facilities under the Alternative Pipeline Route 1 are the same as the Proposed Project, except for the route that the 16-inch-diameter underground natural gas pipeline would run from the wellhead site to the compressor station. Under this alternative, the gas pipeline would begin at the wellhead, and head due east, parallel with Junipero Street, crossing an active industrial use yard, before turning northwest by the UPRR tracks. It would then parallel the UPRR tracks northwest to Elder Creek Road. At this point, the alignment would continue northwest to Lemon Hill Avenue before entering the compressor station. This route would be approximately 7,800 feet long, approximately 450 feet longer than the Proposed Project.

Rationale for Full Analysis: Alternative Pipeline Route 1 would reduce traffic impacts on Power Inn Road and may reduce safety impacts because it is further away from residences while meeting project objectives 1, 2, and 3. Because this alternative has the potential to reduce project impacts, it has been recommended to be carried forward for full EIR analysis.

Alternative Wellhead Site to Compressor Station Pipeline Route 2

Project facilities under the Alternative Pipeline Route 2 are the same as the Proposed Project, except for the route which the 16-inch-diameter underground natural gas pipeline would run from the wellhead site to the compressor station. Under this alternative the gas pipeline would begin at the wellhead, run approximately 600 feet north within existing utility alignment to Berry Avenue, turn east and run parallel to Berry Avenue, and then turn northwest and parallel the UPRR tracks northwest to Elder Creek Road. At this point, the alignment continues northwest to Lemon Hill Avenue before entering the compressor station. This route would be approximately 7,700 feet long, approximately 350 feet longer than the Proposed Project.

Rationale for Full Analysis: Alternative Pipeline Route 2 would reduce traffic impacts on Power Inn Road and may reduce safety impacts because it is further away from residences while meeting project objectives 1, 2, and 3. Because this alternative would meet project objectives, is feasible, and has the potential to reduce project impacts, it has been recommended to be carried forward for full EIR analysis.

Alternative Wellhead Site to Compressor Station Pipeline Route 3

Project facilities under the Alternative Pipeline Route 3 are the same as the Proposed Project, except for the route that the 16-inch-diameter underground natural gas pipeline would run from the wellhead site to the compressor station. Under this alternative the gas pipeline would begin at the wellhead, would run north approximately 1,650 feet within an existing utility alignment, and then continue approximately 650 feet north along Power Inn Road to Elder Creek Road. From that intersection, the pipeline would be installed within Elder Creek Road, running east for approximately 1,800 feet, to the intersection with the UPRR tracks. At this point, the alignment continues northwest to Lemon Hill Avenue before entering the compressor station. This route would be approximately 7,100 feet long total, approximately 250 feet shorter in length than the Proposed Project.

Rationale for Full Analysis: Alternative Pipeline Route 3 is the shortest alignment and would reduce construction-related impacts while meeting project objectives 1, 2, and 3. Because this alternative would meet project objectives, is feasible, and has the potential to reduce project impacts, it has been recommended to be carried forward for full EIR analysis.

B.2 Alternatives Eliminated from Full EIR Evaluation

The following alternatives were evaluated for their potential to meet CEQA requirements but were ultimately eliminated from consideration in the EIR. A detailed description of each alternative and the rationale for its consideration and elimination is presented in Section C, Alternatives.

B.2.1 Alternative Gas Fields

Stone Lake Gas Field Alternative

Description: The Stone Lake Gas Field consists of two small fields located to the south of the Freeport Gas Field near the Elk Grove and Laguna neighborhoods. The fields are located in a residential area on the southern urban fringe of the Sacramento Metro area. The western field is located beneath the I-5 freeway and immediately to the south of Elk Grove Boulevard. The eastern field is east of I-5 freeway and adjacent and to the north of Elk Grove Boulevard. The field is located in the Stone Lake Refuge. Working gas storage capacity in this field is estimated to be approximately 0.75 bcf. Development of this field would involve constructing facilities similar to those required for the Proposed Project, including injection/withdrawal wells, compressor station, and connecting pipeline(s) between the wells and compressor station, as well as an interconnecting pipeline from the gas field to SMUD's natural gas pipeline system. Connection to the SMUD system under this alternative would require the construction of an approximately 2-mile, 16-inch-diameter interconnect pipeline through a partially urbanized area.

Rationale for Elimination: The Stone Lake Gas Field would provide a natural gas storage field outside of an urban area, thereby reducing the potential safety impacts associated with the Proposed Project. However, other environmental impacts to biological resources may be greater than those associated with the Proposed Project due to construction and operation activities within the Stone Lake Refuge; therefore, this alternative may not meet environmental screening criteria. This alternative would not meet the CEQA screening criteria for project objectives or feasibility. While this alternative would meet project objective 1, due to its limited ability to store natural gas, it would not meet project objectives 2 and 3. In addition, three faults occur within the Stone Lake Gas Field, which may create pathways for leakage and safety concerns. Therefore, due to geologic conditions, the field may not meet the technical feasibility criteria. The Stone Lake Gas Field Alternative would not meet project objectives criteria or technical feasibility criteria and therefore was not carried forward for full EIR analysis.

Poppy Ridge Gas Field Alternative

Description: The Poppy Ridge Gas Field is a small gas field located to the east of the eastern-most Stone Lake Gas Field. It is also beneath a residential area on the urban fringe of the Sacramento Metro area. It is located to the south of Elk Grove Boulevard and 1 mile east of Franklin Boulevard. Poppy Ridge, like the Freeport and Stone Lake gas fields, is located in the Laguna neighborhood of Elk Grove. Working gas storage capacity in this field is estimated to be approximately 0.12 bcf. Development of this field would involve constructing facilities similar to those required for the Proposed Project, including injection/withdrawal wells, compressor station, and connecting pipeline(s) between the wells and compressor station, as well as an

interconnecting pipeline from the gas field to SMUD's natural gas pipeline system. Connection to the SMUD system under this alternative would require the construction of an approximately 2-mile, 16-inch-diameter interconnect pipeline through an urban area.

Rationale for Elimination: This alternative appears to be technically feasible. However, the Poppy Ridge Gas Field is located in an urban area and therefore would not substantially reduce potential health and safety impacts associated with the Proposed Project and therefore would not meet the CEQA screening criteria for environmental criteria. This alternative would meet project objective 1. However, due to its limited ability to store natural gas, it would not meet project objectives 2 and 3 and therefore would not meet project objectives criteria. Because the Poppy Ridge Gas Field Alternative would not meet project objectives or environmental criteria, it was not carried forward for full EIR analysis.

Sacramento Airport Gas Field Alternative

Description: The Sacramento Airport Gas Field is located beneath the Sacramento Airport. It is comparatively larger in area than the other alternatives considered and is approximately 6 miles long (north to south) and is 1.5 miles at its widest point across (west to east). At its northernmost point, the Sacramento Airport Gas Field touches West Riego Road. The western boundary of the field is the Sacramento River, the southern boundary is State Highway 22, and the eastern boundary is Power Line Road. Other than the airport, the gas field is located beneath agricultural fields. The field covers 11 square miles and the storage capacity in this field is 7.5 bcf, similar to that of the Proposed Project. Development of this field would involve constructing facilities similar to those required for the Proposed Project, including injection/withdrawal wells, compressor station, and connecting pipeline(s) between the wells and compressor station, as well as an interconnecting pipeline from the gas field to SMUD's natural gas pipeline system. Connection to the SMUD system under this alternative would require the construction of an approximately 5- to 10-mile, 16-inch-diameter interconnect pipeline.

Rationale for Elimination: While the Sacramento Airport Gas Field would meet project objectives and would provide a natural gas storage field outside of residential areas, thereby reducing the potential health and safety impacts associated with the Proposed Project, it would not meet the feasibility screening criteria. The geologic formation of the reservoir, which includes faults, discontinuous sand lenses, and massive discontinuity in the production zones throughout the field, preclude this alternative due to feasibility. Furthermore, this alternative could create potential siting conflicts with the airport, as well as additional environmental impacts associated with the need to construct a 5- to 10-mile pipeline to connect to SMUD pipelines. For these reasons, this alternative was not carried forward for full EIR analysis.

Combined Gas Field Alternative

Description: Six alternative gas storage sites within Sacramento County and in close proximity to SMUD's service area were considered in the alternatives screening process. The Freeport, Snodgrass Slough, and Thornton gas fields have been selected through the alternatives screening process for detailed EIR analysis. Combining any of these three off-site gas field alternatives would require duplication of construction and operation of project facilities at each gas field including injection/withdrawal wells, compressor station, and connecting pipelines from the wells to the compressor station and also to connect to the SMUD system. Construction and operation of duplicated facilities would not have the ability to further avoid or substantially lessen significant environmental effects beyond those environmental impacts associated with each individual alternative gas field site; therefore, this combination of gas fields was not considered.

The combination of Sacramento Airport, Stone Lake, and Poppy Ridge alternative gas fields were not carried forward for EIR analysis. While the Sacramento Airport Gas Field Alternative would meet project objectives, it would not meet technical feasibility screening criteria due to geologic concerns, and therefore was not carried forward for full EIR analysis. Combining the Sacramento Gas Field with another alternative gas field would not change the technical feasibility of developing the Sacramento Airport Gas Field and therefore was not considered. Only the Poppy Ridge and Stone Lake alternative gas fields were determined not to meet project objectives screening criteria due to their limited size. Therefore, an alternative combining these two alternative gas fields was considered.

The Stone Lake and Poppy Ridge gas fields are located on the urban fringe of the Sacramento Metro area. The Stone Lake Gas Field is located in the Stone Lake Refuge near the community of Elk Grove. The Poppy Ridge Gas Field is located 2 to 3 miles east of the Stone Lake Gas Field, underneath a residential area of Elk Grove. Development of both fields in combination would involve constructing and operating duplicate facilities similar to those required for the Proposed Project at each gas field site, including injection/withdrawal wells at each field, compressor stations at each field, and connecting pipelines from the wells to the compressor station at each field as well as connecting pipelines to the SMUD system. Connection to the SMUD system under this combined alternative would require construction of an approximately 2-mile 16-inch-diameter pipeline through a partially urbanized area to connect the Stone Lake Gas Field to the SMUD system as well as an approximately 2-mile 16-inch-diameter pipeline through an urbanized area to connect the Poppy Ridge Gas Field to the SMUD system. Working gas storage capacity under this combined gas field alternative is estimated to be approximately 0.87 bcf (0.75 bcf Stone Lake plus 0.12 bcf Poppy Ridge).

Rationale for Elimination: Combining the Stone Lake and Poppy Ridge gas fields would meet project objective 1; however, due to its limited working capacity to store natural gas, this combined gas field alternative would not meet project objectives 2 and 3, and therefore would not meet CEQA screening criteria for project objectives. This combined gas field alternative would not meet CEQA screening criteria for technical feasibility as three faults occur within the Stone Lake Gas Field, which may create pathways for leakage. Finally, while the Stone Lake Gas Field would provide a natural gas field outside of an urban area, thereby reducing potential health and safety impacts associated with the Proposed Project, in combination with the Poppy Ridge Gas Field, health and safety impacts would not be substantially reduced as the Poppy Ridge Gas Field is located in an urban area. Furthermore, operating two gas storage facilities with separate wells; compressor stations; and pipelines may increase the potential for accidents, including fire and explosions, than would be associated with the operation of a single facility. This is due to the increased length of pipelines and the fact that two reservoirs would be operating at one time increasing the potential for leakage of natural gas from the reservoir.

Additionally, combining the Stone Lake and Poppy Ridge gas fields would have greater impacts to biological resources as the Stone Lake Gas Field is located in the Stone Lake Refuge. Therefore, combining the Stone Lake and Poppy Ridge gas fields would not meet the CEQA screening criteria for environmental effects as it would not avoid or substantially reduce environmental impacts of the Proposed Project. Combining the Stone Lake and Poppy Ridge gas fields as an alternative to the Proposed Project would not meet project objectives criteria, technical feasibility criteria, or environmental screening criteria and therefore was not carried forward for full EIR analysis.

Gas Fields Outside of Sacramento

Description: Gas fields outside of the Sacramento area were considered, including Wild Goose in Colusa County, and a number of other depleted or partially depleted gas or oil fields in the region. Development of these field(s) would involve constructing facilities similar to those required for the Proposed Project, including injection/withdrawal wells, compressor station, and connecting pipeline(s) between the wells and compressor station, as well as an interconnecting pipeline from the gas field to SMUD's natural gas pipeline system.

Rationale for Elimination: Development of a gas storage field outside the Sacramento area may potentially be feasible and depending on the location, may reduce the potential public health and safety impacts associated with the Proposed Project by developing natural gas storage outside the metropolitan area. However, this alternative would not meet the CEQA screening criteria for project objectives. While this alternative would meet project objective 1, it would not meet project objectives 2 and 3, which specifically require that the gas storage field be located in the Sacramento area in order to provide secure and reliable gas supply to the Sacramento

metropolitan area in the event of a disruption of service, and to provide storage needed to specifically supply SMUD natural gas storage needs to power their electrical generating plants. Because this alternative would be subject to transportation curtailment and not provide direct interconnection to SMUD's gas pipeline system, it would not meet most of the project objectives, and therefore was not carried forward for further analysis in the EIR.

Use of Natural Gas Storage Tanks

Description: This alternative would involve the use of aboveground or partially buried storage tanks that would store natural gas in the Sacramento Area. The storage capacity of each tank is expected to be 0.05 bcf of natural gas. This would mean that approximately 80 such tanks would be necessary to meet the 4.0 bcf storage requirements. Even partially buried, these tanks could be over 100 feet in diameter and 75 to 100 feet high. No specific locations have been identified. For purposes of the analysis provided in this EIR, it is assumed that natural gas storage tanks under this alternative would be placed in locations near existing SMUD pipelines.

Rationale for Elimination: The development of approximately 80 natural gas storage tanks located in or near SMUD natural gas lines could result in substantial risk of fire or explosion both from the tanks themselves and from the connecting pipelines. Additionally, development of 80 of these large tanks would result in substantial aesthetic impacts and land use impacts. Although this alternative could meet most project objectives and is considered technically feasible, it would not meet environmental screening criteria due to the substantial safety, land use, and aesthetics impacts and therefore was not carried forward for full EIR analysis.

B.2.2 Project Design Alternatives

The following are project design alternatives as identified by SNGS, LLC for the Proposed Project that were eliminated from consideration.

Alternative Compressor Station Location 1

Project facilities under the alternative compressor station location 1 are the same as the Proposed Project except for the location of the compressor station. Under this alternative the compressor station would be immediately adjacent and to the east of the wellhead site, located on the northeast quadrant of Power Inn Road and Junipero Street. At least one or two additional parcels of land, currently occupied by active businesses, would have to be acquired. The compressor station would be approximately 500 feet from residences under this alternative.

Rationale for Elimination: Although this alternative would meet project objectives and would be feasible, it would not reduce environmental impacts of the Proposed Project. This alternative

would require relocation of current businesses and would be closer to residences; therefore, it was not carried forward for further analysis in the EIR.

Alternative Compressor Station Location 2

Project facilities under the alternative compressor station location 2 are the same as the Proposed Project except for the location of the compressor station. Under this alternative the compressor station would be near Fruitridge Road, adjacent to the west of the UPRR right-of-way, on the Depot Park property.

Rationale for Elimination: Although this alternative would meet project objectives and would be feasible, it would not reduce environmental impacts of the Proposed Project. This alternative would be closer to businesses and, therefore, was not carried forward for further analysis in the EIR.

Alternative Wellhead Site at Compressor Station Site

Project facilities under the alternative wellhead site location are the same as the Proposed Florin Project except for the location of the wellhead site. Under this alternative, the wellhead site would be constructed adjacent to the compressor station on the Depot Park site. This alternative would move this project component away from the adjacent residences and Danny Nunn Park on Power Inn Road.

Rationale for Elimination: For the wellhead site to operate correctly it needs to be located near the center of the natural gas field. However, this alternative would move the wellhead site approximately 1 mile from the natural gas field boundary. Therefore, this alternative does not meet the feasibility criteria for the project and was not carried forward for full EIR analysis.

B.2.3 Alternatives to Natural Gas Storage

New Natural Gas Supply Pipeline

Description: This alternative would construct another natural gas supply line to the Sacramento area, potentially from Canada or other western states. This would provide an alternative supply of gas to the region but would not accomplish more storage.

Rationale for Elimination: Although this alternative would eliminate the proposed storage facilities, it may not be feasible and/or meet project objectives because it would not provide further storage and the availability of a new gas supply for the pipeline is not known. Furthermore, this alternative would create additional environmental impacts and safety concerns associated with construction of a new natural gas supply pipeline. For these reasons, this alternative was not carried forward for further analysis in the EIR.

Energy Conservation and Demand-Side Management

Description: Energy conservation and demand-side management programs are designed to reduce customer energy consumption. PG&E and SMUD offer a number of energy conservation programs for customers, including financial incentives for installing specific energy-efficient appliances or taking other measures to conserve energy. PG&E and SMUD also provide programs to raise awareness among customers regarding their energy usage and ways to conserve, as well as providing a variety of free brochures on improving energy efficiency.

Rationale for Elimination: Reductions in demand through related energy conservation programs are an important part of PG&E's and SMUD's future operations and are incorporated into long-term energy need forecasts. As separate and stand-alone programs, however, these programs do not provide either the capacity or reliability needs of providing natural gas storage to the Sacramento metropolitan area. Energy conservation and demand-side management would not occur at a scale that would eliminate the need for natural gas storage in the Sacramento metropolitan area as described in Section A.2 of this EIR, Project Purpose and Need. While this alternative would avoid environmental impacts of the Proposed Project, this alternative was not carried forward for further analysis in the EIR because it would not meet project objectives and feasibility criteria.

B.3 No Project Alternative

CEQA requires an evaluation of the No Project Alternative so that decision makers can compare the impacts of approving the project with the impacts of not approving the project. According to CEQA Guidelines (Section 15126.6(e)), the No Project Alternative must include the assumption that conditions at the time of the NOP (i.e., baseline environmental conditions) would not be changed since the Proposed Project would not be installed, and the events or actions that would be reasonably expected to occur in the foreseeable future if the project were not approved. The first condition is described in the EIR for each environmental discipline as the "environmental baseline," since no impacts of the Proposed Project would be created. This section defines the second condition of reasonably foreseeable actions or events. The impacts of these actions are evaluated in each issue area's analysis in Section D.

Under the No Project Alternative, the SNGS Facility would not be built, thereby not developing natural gas storage for the Sacramento metropolitan area. In the event of disruption of the gas PG&E Lines 400/401, an adverse condition in the Sacramento area would occur as natural gas is used to generate approximately 30% of the electricity in the Sacramento area. SMUD has identified a need for at least a 30-day backup supply of natural gas in the event of an outage of the PG&E natural gas distribution system. Under the No Project Alternative, the proposed SNGS Facility would not be built. The primary objective of the Proposed Project to increase storage in

the event of an interruption of the importation system would not be met, thereby requiring SNGS and PG&E to implement cutbacks on non-essential uses of energy. Depending on the length of interruption, natural gas would run out at some locations.

C. ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

C.1 Impact Assessment Methodology

The analysis of environmental impacts is based upon the environmental setting applicable to each resource/issue and the manner in which the construction, operation, and maintenance of the Proposed Project or alternatives would affect the environmental setting and related resource conditions. In accordance with CEQA requirements and guidelines, the impact assessment methodology also considers the following three topics: (1) the regulatory setting, which includes an evaluation of whether the Proposed Project or alternatives would be consistent with adopted federal, state, and local regulations and guidelines; (2) growth-inducing impacts; and (3) cumulative impacts. Regulatory compliance issues are discussed in each resource/issue area section. The EIR document is organized according to the following major issue area categories:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soil, and Paleontology
- Hazardous Materials, Public Health and Safety
- Hydrology and Water Quality
- Land Use, Agriculture and Recreation
- Noise and Vibration
- Population and Housing
- Public Services and Utilities
- Transportation and Traffic
- Visual Resources.

In order to provide for a comprehensive and systematic evaluation of potential environmental consequences to the resource/issue areas, the environmental impact assessments for the Proposed Project and alternatives are based upon a classification system, with the following four associated definitions:

- **Class I:** Significant; cannot be mitigated to a level that is less than significant.
- **Class II:** Significant; can be mitigated to a level that is less than significant.
- **Class III:** Adverse but less than significant, no mitigation required.
- **Class IV:** Beneficial impact.
- **No Impact:** No impact identified.

In a number of instances, SNGS, LLC has proposed measures to reduce impacts to potentially affected resources or areas. These types of actions are termed applicant proposed measures (APMs) in the EIR and are considered in the impact assessment as part of SNGS, LLC's Proposed Project description. As such, these measures are different from CEQA mitigation measures.

C.2 Mitigation Measures

The EIR describes feasible measures that could minimize significant adverse impacts (CEQA Guidelines, Section 15226.4). Within each issue area, mitigation measures are provided where environmental effects could be substantially minimized. The mitigation measures provided in this EIR have been identified in the impact assessment sections of the EIR and are presented in Section G, Mitigation Monitoring and Reporting.

C.3 Summary of Environmental Impacts and Mitigation Measures for the Proposed Project

The major findings of the EIR analysis are presented in Tables ES-1, ES-2, and ES-3. Impact findings and mitigation measures for the Proposed Project are summarized in Table ES-1. Comparative effects of the alternatives are summarized in Table ES-2. Table ES-3 provides a summary of significant unmitigable Class I impacts for the Proposed Project and alternatives. Significant and unmitigable impacts were identified for the Proposed Project in three categories, including (1) hazardous materials, public health and safety (potential hazards involving the release of hazardous materials); (2) hydrology and water quality (operation and maintenance impacts to groundwater quality); and (3) noise (construction activities would temporarily impact the local noise level).

The EIR analysis indicates that, assuming implementation of APMs and mitigation measures described in Sections D.2 through D.13, all other significant impacts to environmental resources can be mitigated to a level that is less than significant for the Proposed Project.

D. SUMMARY COMPARISON OF THE PROPOSED PROJECT AND ALTERNATIVES

D.1 Summary of Environmental Impact Conclusions

Six alternatives in addition to the No Project Alternative were identified for evaluation in this EIR. It should be noted that the screening analysis and the comparison of alternatives did not consider economic factors as either a screening tool or in comparison to the potential environmental impacts of the Proposed Project. The CPUC's CPCN proceedings may separately

and specifically consider cost issues as they pertain to economic feasibility. The environmental impacts of the Proposed Project were compared to those of each alternative to determine which was the environmentally superior alternative. Table ES-2 provides a summary of environmental impact conclusions for the Proposed Project and each of the alternatives for each environmental issue area. Impacts determined to be significant and unmitigable are identified as Class I impacts. Impacts that can be reduced to a less-than-significant impact through the use of mitigation measures are identified as Class II impacts. Impacts that are less than significant without the need for mitigation are identified as Class III impacts. Table ES-3 provides a summary of significant unmitigable (Class I) impacts for the Proposed Project and alternatives. Significant and unmitigable (Class I) impacts were identified for the Proposed Project in three categories, including (1) hazardous materials, public health and safety (potential hazards involving the release of hazardous materials); (2) hydrology and water quality (operation and maintenance impacts to groundwater quality); and (3) noise (construction activities would temporarily impact the local noise levels).

As shown in Table ES-3, Class I unmitigable impacts were identified that would potentially occur with the Proposed Project and some of the identified alternatives. Short-term Class I unmitigable construction noise impacts would be reduced to less than significant at all three alternative gas field locations due to their rural location, but would remain Class I for the project design alternatives (wellhead to compressor station pipeline routes 1, 2, and 3) as construction of the wellhead proposed by the project would remain the same.

A release of gas in a densely populated area such as the Proposed Project could have substantial consequences (Class I impact). The potential for hazards associated with upset and accident conditions involving the release of gas at the Freeport Gas Field would remain a Class I impact, as it is located near the populated area of Elk Grove. Due to the remote locations of the Snodgrass Slough and Thornton gas fields, Class I impacts for hazards would be reduced to Class II with implementation of mitigation measures presented in this EIR. While leakage of stored gas into the overlying aquifer is unlikely to occur for the Proposed Project and mitigation has been provided to reduce this already low probability, the possibility of a release of gas into the aquifer would still remain (Class I impact). Class I impacts to hydrology and water quality remain during operation for all the alternatives due to the potential for migration of gas into a drinking water aquifer.

The EIR analysis indicates that, assuming implementation of APMs and mitigation measures described in Sections D.2 through D.13, all other significant impacts to environmental resources can be mitigated to a level that is less than significant for the Proposed Project and identified alternatives.

D.2 Environmentally Superior Alternative

Based on the analysis presented in this EIR, the environmentally superior alternative was determined to be the No Project Alternative. Under the No Project Alternative, the proposed SNGS Facility would not be constructed. All environmental impacts associated with the construction and operation of the Proposed Project would be eliminated, and existing environmental conditions would be unaffected. The No Project Alternative would not meet the goals and objectives of this project as established by SNGS, LLC. This alternative would also not derive the benefit of the Proposed Project, which would provide an emergency natural gas supply source to SMUD for the Sacramento metropolitan area. Under the No Project Alternative, in the event of disruption of the PG&E natural gas pipelines 400/401, SMUD may be required to implement cutbacks on non-essential energy use and may run out of natural gas at some locations, thereby potentially affecting energy supply in the Sacramento metropolitan area.

State CEQA Guidelines Section 15126, subd. (d)(2) further stipulates that “if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.” In addition to the No Project Alternative, six alternatives in two categories were identified for evaluation in this EIR, including gas field alternatives and project design alternatives.

The EIR analysis indicates that the Snodgrass Slough Gas Field alternative would rank as the environmentally superior alternative, as it would provide a natural gas storage field outside of an urban area, thereby reducing the potential public safety impacts associated with the Proposed Project while partially meeting project objectives. While this field produced natural gas between 1993 and 1998, the geologic structure has not been studied in detail and therefore the technical feasibility may be limited and require further geologic evaluation and special engineering. While careful consideration needs to be given to the potential limitations of this alternative, it may be potentially feasible.

Under the Snodgrass Slough Gas Field alternative, the significant and unavoidable (Class I) short-term construction noise impacts of the Proposed Project would be reduced to less than significant with mitigation (Class II). Due to the location away from dense population centers, this alternative with mitigation as presented in this EIR would also reduce significant and unavoidable (Class I) public health and safety impacts to less than significant (Class II). While impacts to groundwater would be reduced due to the alternative's location away from a dense population center, they would remain significant and unavoidable (Class I). Implementation of this alternative would increase short-term construction-related impacts to air, soil erosion, cultural and biological resources, hydrology/water quality, and agriculture due to the increased length of connecting pipeline required to connect to SMUD's natural gas pipeline system. While

the EIR analysis indicates that short-term construction impacts generated under these issue areas by this alternative are significant, they can be mitigated to less than significant (Class II).

In summary, from a strictly environmental perspective, the Snodgrass Slough Gas Field alternative ranks as the environmentally superior alternative, as it would reduce short-term construction noise impacts that are significant and unavoidable (Class I) to less than significant with mitigation (Class II). In addition, due to its location away from dense population centers, public health and safety impacts (Class I) would be reduced to less than significant with mitigation (Class II). Also, because of this alternative's location away from dense population centers, the Class I impact to groundwater contamination of a municipal aquifer would be reduced; however, it would remain a Class I impact. The Proposed Project is not considered environmentally preferable due to the potential consequences of release of natural gas within an area containing a substantial population.

E. ISSUES TO BE RESOLVED

The following issues must still be resolved:

- Which alternative, including consideration of the No Project Alternative, should be adopted
- Which mitigation measures should be adopted
- What level of approvals would be needed for the use of Depot Park for the Proposed Project.

Table ES-1
Summary of Impacts and Mitigation for the Proposed Project

Impact	Impact Class	Mitigation Measures	Residual Impact
<i>Air Quality</i>			
A-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	Class III	None	None
A-2: Violation of an Air Quality Standard or Substantial Contribution to an Existing or Projected Air Quality Violation	Class II (construction)/ Class III (operations)	None. See APM 3(d) (Section B). SNGS, LLC has committed to implementing APM 3(d) (as described in Table D.2-7) to reduce the Proposed Project's construction emissions to a less-than-significant level. APM 3(d) includes the following. The SMAQMD has established a construction emissions mitigation fee, which is to be used to fund repowering and retrofit projects for older construction equipment and similar emission reduction programs. The current fee is \$16,000 per ton of NO _x emissions in excess of the 85-pound-per-day significance threshold. The mitigation fee has been calculated for the Proposed Project (see Section 3.3 of the PEA Addendum (SNGS, LLC 2007b)). The fee is based on excess emissions that were estimated to occur only during weeks 16 and 17 of the construction schedule. The total mitigation fee for the Proposed Project is \$8,827 (\$8,407 NO _x mitigation fee plus a \$420 administrative fee). This fee has been recalculated based on the current SMAQMD fee and included as a mitigation measure with payment of the construction emissions mitigation fee to the SMAQMD.	Less Than Significant
A-3: Create a Cumulatively Considerable Net Increase of a Criteria Pollutant for Which the Region is in Nonattainment Under Applicable Federal or State Ambient Air Quality Standards (Including Releasing Emissions that Exceed Quantitative Thresholds for Ozone Precursors)	Class III	None	Less Than Significant
A-4: Expose Sensitive Receptors to Substantial Pollutant Concentrations	Class III	None	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
A-5: Create Objectionable Odors Affecting a Substantial Number of People	Class III	None	Less Than Significant
A-6: Compliance with Applicable District, State, and Federal Air Quality Rules and Regulations	Class III	None	Less Than Significant
A-7: Compliance with EPA General and Transportation Conformity Regulations	Class III	None	Less Than Significant
A-8: Potential to Impede or Conflict with the Emissions Reduction Targets and Strategies Prescribed in or Developed to Implement AB 32 ¹	No Impact	None	None
Biological Resources			
B-1a: Substantial Adverse Effect on Listed Candidate, or Special-Status Species (Impact to Sanford's Arrowhead)	Class II	B-1a: Prior to initiation of construction, the applicant shall retain a qualified botanist to survey for the Sanford's arrowhead from Elder Creek Road to 250 feet upstream and downstream of Morrison Creek where HDD would be conducted. This survey shall be conducted during a period of time the phenology of the plant will allow for ready identification. Any populations found shall be fenced under the supervision of the botanist and no work shall be conducted within the fenced area.	Less Than Significant
B-1b: Substantial Adverse Effect on Listed Candidate, or Special-Status Species (Impact to Vernal Pool Crustaceans and their Habitat)	Class II	B-1b: A protocol-level fairy shrimp survey shall be conducted by a qualified biologist at each potential wetland habitat. If this is not conducted, then it shall be assumed that each potential vernal pool contains these species. These occupied areas or assumed-occupied areas shall be avoided where possible through fencing off of the areas and monitoring during construction to assure the areas are not disturbed. For areas that cannot be avoided, at least two vernal pool credits shall be purchased at a USFWS-approved preservation bank for every acre directly or indirectly impacted.	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
B-1c: Substantial Adverse Effect on Listed Candidate, or Special-Status Species (Impact to Giant Garter Snake)	Class II	B-1c: Construction in areas determined to be potential habitat for the giant garter snake shall be conducted between May 1 and October 1. Consultation shall be conducted with the USFWS to obtain the necessary permits and approvals. Surveys for the species shall be conducted 24 hours before commencement of construction activities or potential activity. Any occupied area shall be avoided by construction. Any impact to upland or marsh vegetation shall be mitigated by restoration of habitat after completion of impacts.	Less Than Significant
B-1d: Substantial Adverse Effect on Listed Candidate, or Special-Status Species (Impact to Burrowing Owls)	Class II	B-1d: Owls could nest in the Proposed Project area during the spring and summer, although no nesting owls were noted during the prior biological surveys. However, they could begin nesting prior to construction. Therefore, preconstruction surveys shall be conducted by a qualified biologist within 30 days prior to initiation of construction. If burrowing owls are observed between February 1 and August 15, a 250-foot buffer shall be established around the burrow and no work shall commence in the buffer zone until young have fledged. If construction is occurring during non-breeding season, then passive relocations shall be conducted under supervision by the CDFG.	Less Than Significant
B-1e: Substantial Adverse Effect on Listed Candidate, or Special-Status Species (Impact to Foraging Habitat for the Swainson's Hawk, White-Tailed Kite, Cooper's Hawk, Great Egret, and Great Blue Heron)	Class II	B-1e: The applicant shall mitigate for loss of habitat on a .75:1 ratio through purchase of mitigation bank credits in a CDFG mitigation bank or payment of a mitigation fee to an approved habitat mitigation bank. This would be for the permanent loss of habitat at the proposed compressor station site and proposed wellhead site.	Less Than Significant
B-1f: Substantial Adverse Effect on Listed Candidate, or Special-Status Species (Impacts to Nesting Raptors and Other Nesting Migratory Birds).	Class II	B-1f: No nesting birds were recorded during previous surveys; however, birds could nest prior to construction in the spring and summer. Therefore,	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		preconstruction surveys shall be conducted during the breeding season (February 1 through August 30) within one-half mile of all construction activities. The survey shall be conducted by a qualified biologist to determine if any nesting raptors or migratory birds are present. If present, construction shall be delayed until the birds have fledged. If that is not possible, then a minimum 250-foot buffer zone shall be established in consultation with the CDFG and the nests shall be monitored during construction.	
B-2: Substantial Adverse Effect on Riparian Habitat or Other Sensitive Habitat	Class II	B-2: Mitigation measures including revegetation of pipeline alignments and compensation for loss of any vernal pools (Mitigation Measure B-1b) would reduce this impact.	Less Than Significant
B-3: Substantial Adverse Effect on Federally and State-Protected Wetlands	Class II	B-3a: The wetlands delineation prepared by Sycamore Environmental Consultants (2008) for those areas not verified in the earlier delineation by CH ₂ M HILL shall be verified and concurrence on the areas of ACOE jurisdiction shall be obtained by ACOE. Wetlands shall be avoided where feasible either through rerouting of the pipeline or the use of HDD. Where wetlands cannot be avoided, the loss of wetlands shall be compensated for through restoration of the wetlands or through creation of wetlands elsewhere, either directly or through an established wetlands bank approved by the ACOE. CDFG or RWQCB permits shall be obtained by the appropriate agency prior to initiation of construction. It is estimated that the mitigation ratios will be between 2 to 1 and 3 to 1.	Less Than Significant
		B-3b: Creek and drainage crossings shall be conducted in a manner that does not result in a sediment-laden discharge or hazardous materials release to the waterbody. The following measures shall be	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>implemented during horizontal boring (jack and bore) operations:</p> <ol style="list-style-type: none"> (1) Site preparation shall begin no more than 10 days prior to initiating horizontal bores to reduce the time soils are exposed adjacent to creeks and drainages. (2) Trench and/or bore pit spoil shall be stored a minimum of 25 feet from the top of bank or wetland/riparian boundary for Morrison Creek. Spoils shall be stored behind a sediment barrier and covered with plastic or otherwise stabilized (i.e., tackifiers, mulch, or detention). (3) Portable pumps and stationary equipment located within 100 feet of a water resource (i.e., wetland/riparian boundary, creeks, drainages) shall be placed within secondary containment with adequate capacity to contain a spill (i.e., a pump with 10 gallon fuel or oil capacity should be placed in secondary containment capable of holding 15 gallons). A spill kit shall be maintained on site at all times. (4) Immediately following backfill of the bore pits, disturbed soils shall be seeded and stabilized to prevent erosion and temporary sediment barriers left in place until restoration is deemed successful. (5) SNGS, LLC shall obtain the required permits prior to conducting work associated with HDD activities and provide proof to CPUC. Required permits may include ACOE CWA Section 404, RWQCB CWA 401, CDFG Streambed Alteration Agreement 1602. SNGS, LLC shall implement all pre- and post-construction conditions identified in 	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		the permits issued for HDD activities. This will involve methods to avoid or remediate frac-outs.	
B-4: Impacts to Wildlife Movement or Corridors	Class III	None	Less Than Significant
B-5: Conflicts with Regional Habitat Conservation Planning Efforts	Class III	None	Less Than Significant
B-6: Conflicts with local policies protecting biological resources.	Class II	B-6: SNGS, LLC shall coordinate with the City of Sacramento and the Department of the Army to avoid any loss of wetlands or to compensate for loss within the natural resource protection area set aside in The Sacramento Army Depot Reuse Plan. This could include increased use of HDD, or compensation for any wetland loss on a 2 or 3-to-1 basis.	Less Than Significant
Cultural Resources			
C-1: Construction Could Affect Known Cultural Resources	No Impact	None	None
C-2: Construction Could Affect Undiscovered Cultural Resources	Class II	C-2a: SNGS, LLC shall develop a CRTP. The CRTP shall include procedures for protection and avoidance of ESAs and archaeological high-probability areas; evaluation and treatment of the unexpected discovery of cultural resources including Native American burials; detailed reporting requirements by the Project Archaeologist; curation of any cultural materials collected during the Project; and requirements to specify that archaeologists and other discipline specialists meet the Professional Qualification Standards mandated by the California Office of Historic Preservation. Specific protective measures such as avoidance shall be defined in the CRTP to reduce potential adverse impacts on any presently undetected cultural resources to less-than-significant levels. The CRTP shall be submitted to the CPUC for review and approval at least 30 days before the start of	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>construction. The CRTP shall define construction procedures for areas near known/recorded cultural sites.</p> <p>C-2b: Conduct construction monitoring. Archaeological monitoring shall be conducted by a qualified archaeologist (see Mitigation Measure C-2a) familiar with the types of historic and prehistoric resources that could be encountered within the Proposed pipeline alignment. A Native American monitor may also be required at the discretion of the project archaeologist. Cultural resources discovered during monitoring shall be evaluated to determine if they are significant historical resources. The effect of the project on significant historical resources shall be determined. If the finding is determined to be a significant historical resource, and if avoidance of the resource is not feasible, then a data recovery program shall be performed pursuant to the CRTP (see Mitigation Measure C-2a). Any resultant archaeological collections and their records shall be curated at an appropriate institution.</p> <p>If human remains are discovered, there shall be no further excavation or disturbance of the discovery site or any nearby area reasonably suspected to overlie adjacent human remains until the project applicant has immediately notified the County Coroner and otherwise complied with the provisions of State CEQA Guidelines Section 15064.5(e). If the remains are found to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours. The most likely descendant of the deceased Native American shall be notified by the NAHC and given the opportunity to make proper</p>	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		disposition of human remains. If NAHC is unable to identify the most likely descendant, or if no recommendations are made within 24 hours, remains may be reinterred with appropriate dignity elsewhere on the property in a location not subject to further subsurface disturbance. If recommendations are made and not accepted, the NAHC will mediate.	
C-3: Future Maintenance Operations Could Affect Cultural Resources	No Impact	None	None
<i>Geology and Soils</i>			
G-1: Risk to People or Structures within a Known Alquist-Priolo Earthquake Fault Zone	No Impact	None	None
G-2: Exposure of People or Structures to Strong Seismic Ground Shaking	Class II (wellhead site, compressor station, and pipeline segments 1 and 2)/ Class III (natural gas field)	G-2: The seismic design of the facilities will employ a lateral acceleration one-third greater than that required by the 2007 California Building Code. Therefore, the facilities will be designed to withstand ground shaking higher than anticipated by the CBC.	Less Than Significant
G-3: Seismically Induced Ground Failures, Including Liquefaction, Lateral Spreading, and Seismic Slope Instability	Class III	None	Less Than Significant
G-4: Slope Instability, Including Landslides, Earth Flows, and Debris Flows	No Impact	None	None
G-5: Soils that Could Damage Foundations or Have High Erosion Potential	Class III	None	Less Than Significant
G-6: Geologic Unit that Could Become Unstable	No Impact	None	None
G-7: Expansive Soils	Class III	None. See APM 4 (Section B).	Less Than Significant
G-8: Adequacy of Soils to Support Septic/Wastewater Systems	No Impact	None	None

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
G-9: Impact on Unique Geologic or Paleontological Resources	Class II	G-9: Prior to the start of construction, a qualified paleontologist will conduct a field survey to identify sensitive stratigraphic units within the construction area that might be disturbed. If paleontological resources are discovered during construction-related earthmoving activities, all ground-disturbing activity in the vicinity of the discovery will be halted; the City of Sacramento Community Development Department or the County of Sacramento, as appropriate, will be notified; and specimen or data recovery, as determined adequate by a qualified paleontologist and consistent with the Society of Vertebrate Paleontology guidelines, will be completed before construction in the vicinity of the discovery resumes. These procedures should ensure that the Proposed Project will have a less-than-significant impact on paleontological resources.	Less Than Significant
<i>Hazardous Materials, Public Health and Safety</i>			
HAZ-1a: Potential Hazards Associated with the Routine Use, Transport, and Disposal of Hazardous Materials During Construction of the Proposed Project	Class II	HAZ-1a: Hazardous wastes generated during construction and operation of the Proposed Project shall be transported to an approved facility for the specific type of material.	Less Than Significant
HAZ-1b: Potential Hazards Associated with the Generation and Disposal of Drilling Mud and Cuttings from Well Drilling and Horizontal Directional Drilling (HDD)	Class II	HAZ-1b: SNGS, LLC shall contain drilling mud and cuttings from well drilling and HDD in portable tanks and shall remove and dispose of these at approved facilities for this type of waste.	Less Than Significant
HAZ-1c: Use, Transportation and Storage of Methyl Mercaptan	Class II	HAZ-1c: SNGS, LLC shall ensure that transportation of methyl mercaptan used in project operations shall comply with all DOT, Caltrans, EPA, DTSC, California Highway Patrol, and California State Fire Marshal regulations, including the Vehicle Code Section 32100 (Division 14.3) for transportation of inhalation hazards.	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		HAZ-1c <i>ii</i> : SNGS, LLC shall require that the route used to deliver methyl mercaptan use US-50 (instead of SR-99) and Howe Avenue to either Power Inn Road or to Folsom Boulevard, Jackson Road, and Florin Perkins Road. This will minimize exposure to sensitive receptors.	
		HAZ-1c <i>iii</i> : SNGS, LLC shall only store and inject methyl mercaptan exclusively at the compressor station. If that is not feasible, the methyl mercaptan shall be stored in a specialized structure and the delivery routes shall be similar to that for the compressor station, except that only a small portion of Power Inn Road shall be used.	
HAZ-2a: Potential Impact from Gas Leaking from the Gas Reservoir After Repressurization of the Gas Field for Gas Storage ²	Class I	HAZ-2a <i>i</i> : SNGS, LLC shall conduct laboratory tests of cores and may also conduct in site bore-hole tests of the cap rock structure if recommended after review by qualified industry experts prior to storage of natural gas. These tests shall include determination of the properties of the cap rock strength relative to the projected pressures exerted by the stored natural gas. If possible, these tests will also provide data to evaluate the effects of the cycling of gas pressure, which is similar to the pressure that exists during operation of the gas storage facility. These tests shall also determine the properties of the cap rock itself, including permeability and porosity of the cap rock within the range of the projected gas storage pressures. These tests shall be monitored and approved by the DOGGR prior to allowing the storage of natural gas.	Significant and Unavoidable
		HAZ-2a <i>ii</i> : SNGS, LLC shall develop a gas detection plan at key points within the area over the Florin Gas Field. The plan will include the installation of monitoring wells	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>for detection of anomalous pressure changes in the deep groundwater aquifer immediately above the cap rock structure. These wells shall be equipped with instrumentation to monitor and record (with electronic data loggers) aquifer pressure, temperature, and other parameters as needed. The number, location, depth, screened interval, and instrumentation of the deep aquifer monitor wells will be selected jointly by qualified petroleum industry and groundwater experts. The intent of the deep aquifer wells is to allow detection of the anomalous pressure, which is a way to tell if there is leakage of stored gas into zones above the cap rock from the underlying Florin Gas Field.</p> <p>This plan shall also include gas detection instruments, well probes, and sampling of the aquifer for entrained natural gas. This plan shall be reviewed and approved by DOGGR, the City of Sacramento Fire Department, and the Sacramento County Environmental Management Department prior to implementation and shall include natural gas detectors at strategic locations. In the event that natural gas is detected and confirmed to be seeping from the reservoir, the gas reservoir shall be reduced to lessen and eliminate the potential for seepage. The deep aquifer monitoring will commence prior to repressurizing the Florin gas reservoir, so that baseline conditions can be established, including ambient levels of natural gas if present.</p> <p>The four primary elements of this gas monitoring mitigation measure are:</p> <ol style="list-style-type: none"> 1) Establish a baseline or background level for natural gas at the surface prior to storage operations. This will allow comparison and sound 	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>evaluation of future Project-related gas monitoring results.</p> <p>2) Periodically measure for levels of detectable gas at pre-determined surface locations. This will allow the storage operator to ascertain whether the levels of gas detected at the surface, if any, have increased noticeably above the previously established background levels. It is expected that small variations may occur which may not individually rise to any significant level, but trends over several sample periods could provide an indication of a change that requires further investigation.</p> <p>3) Quantify and, if necessary, qualify any changes in an attempt to identify the source. First, based on sampling and testing of gas samples, it should be determined whether the gas quality signature is similar to the native gas production in the area or to pipeline gas. Gas in the storage reservoirs will be almost exclusively pipeline gas with components that should be relatively easy to identify compared to native gas.</p> <p>4) Based on any specific changes observed, the operator shall respond to the data and corresponding analysis with additional testing, surveillance, or mitigation, as appropriate. If the data indicates that any detected surface gas is from the storage operation, then a plan will be developed to identify the leaking pipeline, well or reservoir, including procedures to further test and correct the situation. If it appears that the source of the gas is related to a non-storage facility, the operator should attempt to identify the owner or</p>	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>operator of that facility and inform them of the findings of the study. The overall gas monitoring program will be evaluated after 5 years to determine its future usefulness.</p> <p>The monitoring program will consist of the following features:</p> <ol style="list-style-type: none"> 1) Permanent monitoring/testing sites at the Project well site and compressor station site 2) Leakage surveys at predetermined locations on a regular basis 3) Utilize standard, industry approved gas measurement equipment 4) Field personnel trained on gas sampling methods and instrumentation, identifying stressed vegetation and other indicators of potential leakage. <p>Two permanent test stations will be located at the wellhead site. Two additional test stations will be installed at the compressor station site. Additional sites for sampling shall be identified in the sampling plan. Baseline measurements, using portable analytical gas instruments, will be made within 48 hours of the installation of the test station. Portable analytical gas instruments will consist of infrared gas analyzers or other combustible gas analyzers. Flame Ionization Detectors (FID) may be used as the primary detector for monitoring. All portable analytical gas equipment will be calibrated daily using a laboratory certified methane calibration gas. All test sites will be identified and all test data will be gathered and recorded. The testing program will be conducted prior to initiation of injection of gas and weekly thereafter.</p>	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
HAZ-2b: Potential for Release of Natural Gas and Resulting Fire and Explosion from Wellhead Site, Compressor Station, and Pipeline Segments 1 and 2.	Class I (wellhead site and pipeline segments 1 and 2)/ Class II (compressor station)	<p>HAZ-2b<i>i</i>: The following mitigation shall be incorporated into the compressor station site:</p> <ul style="list-style-type: none"> • The compressor station shall be secured by two levels of security. The perimeter of the 382-acre industrial park is secured with a security fence and gate, with a 24-hour site security staff. The compressor station site itself will be surrounded by an 8-foot-high steel security fence with barbed wire, with gates maintained in a closed and locked default status, actuated with key cards. • The station's control center, which is located at the compressor station site, shall be manned 24 hours per day. • Emergency backup power shall be provided by a 75-kilowatt diesel generator. • Motion detectors shall be installed on posts along the perimeter security fence. Motion detected within the facility will result in an alarm and trigger the activation of security lighting during periods of darkness. • A security lighting system shall be provided within the compressor station site. The system will be manually operated, but will have automatic activation in the event of an emergency alarm for fire, smoke, or intrusion. • All buildings on the site shall be equipped with fire and smoke detectors. In addition, the compressor building will be equipped with heat and flash detectors. All sensors will be integrated into the control system with audible and visual alarms. 	Significant and Unavoidable (Wellhead Site and Pipeline Segments 1 and 2)/Less than Significant (Compressor Station)
		<p>HAZ-2b<i>ii</i>: The following mitigation shall be incorporated into the wellhead site portion of the project:</p>	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<ul style="list-style-type: none"> • The wellhead site shall be surrounded by a 10-foot-high masonry wall, with a security gate actuated by key card entry. • The wells shall be provided with fire and gas detectors and will be under continual audio/video surveillance from the continually manned compressor station. They will also be provided with three ESD valves: a subsurface down-hole ESD, an ESD located at the wellhead, and an ESD located at the pipeline interface. In the event of either a high or low pressure alarm, a fire alarm at the wellhead, or potentially dangerous level of natural gas is detected, these ESD valves will automatically close in order to limit the supply of natural gas to the fire or leak. • A third-party peer review shall be conducted by a well control specialist, under the supervision of the Sacramento City Fire Department. • A backup power system shall be installed to provide electrical power in an emergency or power outage. • A security lighting system shall be provided. The system will be manually operated, but will have automatic activation in the event of an intrusion. • Motion detectors shall be installed along the top, inside perimeter of the masonry wall. Motion detected within the facility will result in an alarm and trigger the activation of security lighting during periods of darkness. • Security cameras shall be installed along the inside top of the masonry wall. Visual signals will be relayed to the Control Center 24 hours per day. 	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<ul style="list-style-type: none"> • All alarms at the wellhead site shall be monitored 24 hours per day at the Control Center. 	
		<p>HAZ-2biii: The CPUC shall conduct, or cause to be conducted in coordination with the DOT, an independent, third-party design review of the applicant's construction drawings, supporting calculations, and specifications and shall monitor and observe construction to ensure compliance with all applicable laws, ordinances, regulations, and standards (LORS). The applicant shall make payments to the CPUC for these design review, plan check, and construction inspection services. These design review and construction observation services shall not in any way relieve the applicant of its responsibility and liability for the design, construction, operation, maintenance and emergency response for these facilities.</p>	
		<p>HAZ-2biv: A 6-inch-wide polyethylene marker tape shall be installed approximately 18 inches below the ground surface, above the center of the pipeline. The marking tape shall be brightly colored and shall be marked with an appropriate warning (e.g., Warning—High-Pressure Natural Gas Pipeline).</p>	
		<p>HAZ-2bv: 100% of the circumferential welds shall be radiographically inspected in accordance with API Standard 1104, Welding of Pipelines and Related Facilities. This shall be approved by the DOT.</p>	
		<p>HAZ-2bvi: The applicant shall submit to the CPUC an O&M manual, prepared in accordance with 49 CFR 192.605. The O&M manual shall address internal and external maintenance inspections of the completed facility, including but not limited to details of integrity testing methods to be applied, corrosion monitoring and testing of the cathodic protection system, and leak monitoring.</p>	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>In addition, the O&M manual shall also include a preventative mitigation measure analysis for the use of automatic shutdown valves per federal DOT Part 192.935(c) requirements. The O&M manual shall also incorporate all of the applicant's proposed mitigation.</p> <p>HAZ-2bvii: The applicant shall conduct an in-line inspection of the pipeline if the maximum allowable operating pressure (MAOP) creates a circumferential stress greater than 40% of the specified minimum yield strength (SMYS). The in-line inspection tool shall be capable of identifying pipe anomalies caused by internal and external corrosion and other causes of metal loss. The inspections shall be performed at regular intervals, in accordance with the applicant's integrity management program.</p> <p>HAZ-2bviii: The following mitigation measures shall be incorporated into the project by the applicant:</p> <ul style="list-style-type: none"> • The minimum depth of cover for each of the pipeline segments shall be 6 feet. • 100% of the circumferential welds shall be inspected using radiographic techniques in accordance with API 1104. • A sectionalizing valve shall be provided on the pipeline segment between the well field and the compressor station. • A control system and associated equipment shall be provided to facilitate ultra-fast closure of important safety valves, including those in the well field and on the pipeline segment between the well field and the compressor station. • During periods where there is no flowing gas, the block valves at each end of each pipeline 	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>segment shall be closed, to “shut in” the facilities. During non-operational periods, the pipeline segments shall be pressurized but shall be isolated from all natural gas sources.</p> <ul style="list-style-type: none"> • All pipeline segments shall be designed to Class 4 (most conservative) area classification per 49 CFR 192. 	
		<p>HAZ-2bix: An integrity management program for HCA portions of the pipeline shall also be prepared in accordance with 49 CFR 192, Subpart O. The integrity management program shall be submitted to the DOT and CPUC.</p> <p>The following project components shall implement the following measures:</p> <ul style="list-style-type: none"> • Wellhead site (HAZ-2bii–HAZ-2bvii) • Compressor station (HAZ 2bi) • Pipelines 1 and 2 (HAZ-2bi–HAZ-2bix). 	
HAZ-3: Potential for the Project to Emit Hazardous Emissions or Handle Acutely Hazardous Waste within 0.25 Mile of an Existing or Proposed School	Class III	None	Less Than Significant
HAZ-4: Project is Located on a Site on a List Compiled Pursuant to Government Code Section 65962.5, Indicating it Would Present a Significant Hazard to the Public and the Environment	Class III	None	Less Than Significant
HAZ-5: Interference with an Adopted Emergency Response Plan or Emergency Evacuation Route	No Impact	None	None

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
HAZ-6: Exposure to Wildland Fires	Class II	HAZ-6: SNGS, LLC shall prepare a fire protection plan that shall be approved by the City of Sacramento Fire Department during the construction of the facilities. This plan shall include procedures to reduce the potential for creation of fires from welding and the provision of firefighting equipment and trained personnel to put out any fire that may be ignited.	Less Than Significant
Hydrology And Water Quality			
H-1: Water Quality Degradation from Erosion and Sedimentation During Construction	Class III	None	Less Than Significant
H-2: Degradation of Water Quality Through Spill of Potentially Harmful Materials Used in Construction	Class III	None	Less Than Significant
H-3: Impacts to Surface Waters	No Impact (aboveground facilities)/Class II (belowground facilities)	H-3a: Creek and drainage crossings shall be conducted in a manner that does not result in a sediment-laden discharge or hazardous materials release to the waterbody. The following measures shall be implemented during horizontal boring (jack and bore) operations: (1) Site preparation shall begin no more than 10 days prior to initiating horizontal bores to reduce the time soils are exposed adjacent to creeks and drainages. (2) Trench and/or bore pit spoil shall be stored a minimum of 25 feet from the top of the bank or wetland/riparian boundary for Morrison Creek. Spoils shall be stored behind a sediment barrier and covered with plastic or otherwise stabilized (i.e., tackifiers, mulch, or detention). (3) Portable pumps and stationary equipment located within 100 feet of a water resource (i.e., wetland/riparian boundary, creeks, drainages) shall be placed within secondary containment	None (aboveground facilities)/Less Than Significant (belowground facilities)

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>with adequate capacity to contain a spill (i.e., a pump with 10-gallon fuel or oil capacity should be placed in secondary containment capable of holding 15 gallons). A spill kit shall be maintained on site at all times.</p> <p>(4) Immediately following backfill of the bore pits, disturbed soils shall be seeded and stabilized to prevent erosion and temporary sediment barriers left in place until restoration is deemed successful.</p> <p>(5) SNGS, LLC shall obtain the required permits prior to conducting work associated with HDD activities and provide proof to CPUC. Required permits may include ACOE CWA Section 404, RWQCB CWA 401, and CDFG Streambed Alteration Agreement 1602. SNGS, LLC shall implement all pre- and post-construction conditions identified in the permits issued for HDD activities.</p>	
		<p>H-3b: (1) Prior to construction, SNGS, LLC shall consult with the CVRWQCB to determine if an individual discharge permit is required for dewatering at any of the project sites anticipated to encounter groundwater. A copy of the permit or a waiver from the RWQCB, if required, shall be provided to the CPUC prior to dewatering.</p> <p>(2) In addition, SNGS, LLC shall submit a typical dewatering drawing that shall be implemented during dewatering activities. The drawing shall include the location of pumps within secondary containment; fuel storage areas; anticipated discharge point; scour protection measures; intake hose screening; and monitoring procedures to ensure that hazardous materials spills are</p>	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		addressed in a timely manner and discharge hoses are frequently inspected for leaks.	
H-4: Increased Runoff from New Impervious Areas and Alteration of Existing Drainage Patterns	Class II (above ground facilities)/ Class III (below ground facilities)	H-4a: SNGS, LLC shall prepare a drainage study and shed map as described in Section 11.7 of the City of Sacramento's Design and Procedures Manual. The drainage study shall include an overland flow release map for the Proposed Project. Sufficient off-site and on-site spot elevations shall be provided in the drainage study to determine the direction of the storm drain runoff. The Department of Utilities shall approve this study and shed map. The on-site storm drain system shall be sized per the latest design runoff standards. Prior to design, SNGS, LLC will contact the Department of Utilities for the design criteria. The building pad elevations for the wellhead and compressor station sites shall be approved by the Department of Utilities and shall be a minimum of 1.7 feet above the local controlling overland release elevation or the finished floor elevation, or the finished floor elevation shall be a minimum of 1.7 feet above the local controlling overland flow release elevation, whichever is higher.	Less Than Significant
		H-4b: SNGS, LLC shall comply with the City of Sacramento's Grading, Erosion, and Sediment Control Ordinance. This ordinance requires the applicant to prepare erosion and sediment control plans for both during and after construction of the Proposed Project and to prepare preliminary and final grading plans and plans to control urban runoff pollution from the project site during construction. This project is greater than 1 acre in size; therefore, SNGS, LLC is required to comply with the state's NPDES General Permit for Stormwater Discharges	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		Associated with Construction Activity (General Permit). To comply with the General Permit, SNGS, LLC will need to file an NOI with the SWRCB and prepare an SWPPP prior to construction. The SWPPP will be reviewed by the Department of Utilities prior to issuing a grading permit. The following items shall be included in the SWPPP: (1) vicinity map, (2) site map, (3) list of potential pollutant sources, (4) type and location of erosion and sediment BMPs, (5) name and phone number of person responsible for SWPPP, and (6) certification by property owner or authorized representative.	
H-5: Construction Impacts to Groundwater Disturbance and Water Quality Degradation	Class II (construction of wellhead site and belowground facilities)/ No Impact (construction of compressor station)	H-5a: SNGS, LLC and its contractors shall comply with all local, state, and federal regulations pertaining to stormwater and non-stormwater discharges.	Less Than Significant (construction of wellhead site and belowground facilities)/None (construction of compressor station)
		H-5b: SNGS, LLC and its contractors shall use non-toxic drilling muds during the drilling of the wells within the areas above the shale cap.	
		H-5c: If groundwater is encountered during the pipeline trenching or HDD, the site shall be dewatered prior to continuing construction. An NPDES permit shall be obtained for proper disposal of water. Treatment may be required prior to discharge.	
H-6: Encroachment into a Floodplain or Watercourse by Permanent Project Features	Class II (above ground facilities)/ Class III (below ground facilities)	See Mitigation Measure H-4a, which requires preparation of a site drainage plan.	Less Than Significant
H-7: Construction in a Potential Dam Inundation Area	Class III	None	Less Than Significant
H-8: Operation and Maintenance Impacts to Surface Water and Groundwater Quality	Class I (operation of natural gas field)/ Class II (operation of	H-8a: SNGS, LLC shall prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan in accordance with 40 CFR 112. A copy of the plan shall be submitted to the CPUC prior to project start-up.	Less than significant for operation of Wellhead Site and Compressor Station.

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
	wellhead site and compressor station)/ No Impact (operation of pipeline connections)	H-8b: SNGS, LLC shall develop groundwater monitoring wells at the wellhead site. These should be in place and a groundwater quality baseline developed prior to any drilling activities. Groundwater quality shall be monitored in both the shallow and deeper aquifers. In the event that hydrocarbon levels above baseline are detected, gas storage activities shall be suspended and the reservoir allowed to depressurize until the source of this contamination is found and corrected. Remediation may also be required if hydrocarbons contaminate the water column. Because the duration of this impact and the effectiveness of this mitigation measures are not known, the impact remains significant and unavoidable.	Impacts resulting from operation of gas field may remain significant and unavoidable.
<i>Land Use, Agriculture and Recreation</i>			
L-1: Conflict with an Applicable Land Use Plan, Policy, or Regulation	Class III	None	Less Than Significant
L-2: Physically Divide an Established Community	Class III	None	Less Than Significant
L-3: Disruption of an Established Land Use	Class II	L-3a: SNGS, LLC or its construction contractor shall provide advanced notice, between 2 and 4 weeks prior to construction, by mail to all residents or property owners within 300 feet of the Proposed Project. The announcement shall state specifically where and when construction will occur in the area. Notices shall provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction. SNGS, LLC shall also publish a notice of impending construction in local newspapers, stating when and where construction will occur. Prior to construction, copies of all notices shall be submitted to the CPUC. SNGS, LLC shall construct during the night in areas where a local jurisdiction requests such timing to reduce construction disruption, if it can be	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>demonstrated that significant noise impacts would not occur. Whether requested by either SNGS, LLC or the local jurisdiction, SNGS, LLC shall provide written evidence of local jurisdiction approval to the CPUC prior to the start of any night work. SNGS, LLC shall also provide analysis of noise impacts and proposed mitigation measures for any residents or other sensitive land uses that would be affected by nighttime construction.</p> <p>L-3b: SNGS, LLC shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring residents about noise, dust, and other construction disturbance. Procedures for reaching the public liaison officer via telephone or in person shall be included in notices distributed to the public in accordance with Mitigation Measure LU-3a. SNGS, LLC shall also establish a telephone number for receiving questions or complaints during construction and shall develop procedures for responding to callers. Procedures shall be submitted to the CPUC for review and approval prior to construction and bi-monthly reports summarizing public concerns shall be provided to the CPUC during construction.</p>	
L-4: Displace an Established Land Use	No Impact	None	None
L-5: Substantially Deteriorate a Recreational Facility or Disrupt Recreational Activities	Class III	None	Less Than Significant
L-6: Convert Farmland to Non-Agricultural Use	No Impact	None	None
L-7: Conflict with an Existing Agricultural Use or a Williamson Act Contract	No Impact	None	None

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
Noise and Vibration			
N-1: Construction activities would temporarily increase local noise levels.	Class I (wellhead site)/ Class III (compressor station and pipelines)	N-1a: SNGS, LLC shall conduct construction activities between 7:00 a.m. and 6:00 p.m. Monday through Saturday and 9:00 a.m. to 6:00 p.m. Sunday or for a shorter period if so stipulated in the relevant local noise ordinance. Exceptions shall only apply to drilling operations associated with the proposed wellhead and HDD construction.	Significant and Unavoidable (Wellhead Site)/Less than Significant (Compressor Station and Pipelines)
		N-1b: SNGS, LLC shall install temporary noise barriers between well drilling and HDD equipment and sensitive receptors. Temporary noise barriers shall be installed between the drilling rig and nearby receptors such that noise levels at nearby residences are reduced. Depending on the length of the noise barrier, it may need to be repositioned after drilling of each well has been completed and the drilling rig has been repositioned. The height and location of the noise barrier shall be determined based on the size of the drilling rig to be used and the location of the proposed wells, and shall be included in a drilling plan submitted to CPUC and the City of Sacramento for review and approval. Exceptions shall apply only upon approval by the city. It is estimated that the barriers will result in a 5 to 10 dBA attenuation, which may still result in nighttime noise impacts.	
		N-1c: SNGS, LLC or its construction contractor shall provide advanced notice, between 2 and 4 weeks prior to construction, by mail to all sensitive receptors and residences within 300 feet of construction sites, staging areas, and access roads. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more than 7 days occur, an additional notice shall be made,	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>either in person or by mail. Notices shall provide tips on reducing noise intrusion; for example, by closing windows facing the planned construction. The notice shall also advise the recipient on how to inform the applicant/contractor if specific noise- or vibration-sensitive activities are scheduled so that construction can be rescheduled, if necessary, to avoid a conflict. SNGS, LLC shall also publish a notice of impending construction in local newspapers, stating when and where construction will occur. Prior to public notification, copies of all notices shall be submitted to the CPUC for review and approval.</p>	
		<p>N-1d: SNGS, LLC shall identify and provide a public liaison before and during construction to respond to concerns of neighboring receptors, including residents, about noise construction disturbance. Procedures for reaching the public liaison officer via telephone or in person shall be included in notices distributed to the public in accordance with Mitigation Measure N-1c. SNGS, LLC shall also establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers. Prior to public notification, procedures included in the notices shall be submitted to the CPUC for review and approval. SNGS, LLC shall provide to the CPUC a bimonthly letter reporting the number of calls received and a summary of caller concerns and how concerns were addressed.</p>	
		<p>N-1e: Construction equipment, excluding HDD drilling equipment, shall be equipped with the appropriate mufflers to reduce noise impacts.</p>	
N-2: Vibration Could Cause a Temporary Nuisance During Construction	Class III	None	Less than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
N-3: Noise from Operation of the Wellhead Site	Class III	None	Less Than Significant
N-4: Noise and Vibration from Operation of the Compressor Station	Class III	None	Less Than Significant
Population and Housing			
P-1: Direct or Indirectly Induced Population Growth	No Impact	None	None
P-2: Induced Demand for Housing	Class III	None	Less than Significant
P-3: Displacement of People or Existing Housing	No Impact	None	None
P-4: Environmental Justice (regarding safety of residents please refer to Section D.6, Hazardous Materials, Public Health and Safety)	Class III	None	Less than Significant
P-5: Urban Decay and Degradation	No Impact	None	None
Public Services and Utilities			
U-1: Utility System Disruptions	Class II	U-1a: Prior to construction in which a utility service interruption is known to be unavoidable, SNGS, LLC shall notify members of the public affected by the planned outage of the impending interruption. Copies of the notices and dates shall be provided to the CPUC at the time the notices are distributed to the public and to the City of Sacramento Fire Department.	Less Than Significant
		U-1b: Underground Service Alert would be notified a minimum of 48 hours in advance of earth-disturbing activities in order to identify buried utilities. After probing the corridor for existing utilities, exact placement of the transmission pipeline would be determined so that placement of new structures will not conflict with other co-located utilities.	
		U-1c: During project design, SNGS, LLC shall coordinate with each jurisdiction affected by the underground pipeline segments to determine the exact location for placement of the structures to avoid conflicts with planned and proposed utility projects and any	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>relocation of existing utilities occurring within the direct vicinity of the project.</p> <p>Coordination with the following jurisdictional departments shall occur in conjunction with final design of the underground natural gas pipelines:</p> <ul style="list-style-type: none"> • City of Sacramento Development Services • City of Sacramento Department of Utilities • Applicable phone, cable, and fiber-optic companies • Applicable natural gas and energy companies • Sacramento County Water Agency <p>Documentation of coordinating efforts and local jurisdiction approval of final design plans for the underground pipelines shall be provided to the CPUC prior to the start of construction activities.</p>	
		<p>U-1d: Prior to construction of the pipelines, SNGS, LLC shall submit to the CPUC written documentation demonstrating coordination with the appropriate jurisdictions, including the following:</p> <ol style="list-style-type: none"> (1) Construction plans designed to protect existing utilities and showing the dimensions and location of the finalized alignment; (2) Records that the applicant provided the plans to affected jurisdiction for review, revision, and final approval; (3) Evidence that the project meets all necessary local requirements; (4) Evidence of compliance with design standards; (5) Copies of any necessary permits, agreements, or condition of approval; (6) Records of any discretionary decisions made by the appropriate agencies. 	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		U-1e: SNGS, LLC shall evaluate the potential for the underground pipelines to increase corrosion on existing pipelines. If this potential is determined to exist, SNGS shall be responsible for installation of the required cathodic protection systems that would reduce corrosion potential. A letter documenting these consultations and their results, including concurrence by the affected jurisdiction(s) and other companies, shall be provided to the CPUC prior to the start of construction.	
U-2: Public Service System Disruption	Class II (fire and police services)/ No Impact (schools)	U-2: SNGS, LLC shall coordinate with the City of Sacramento and reimburse the city for their fair share of additional equipment and personnel as determined by the city's needs study. The department is contracting with technical experts to evaluate the capabilities of the department and surrounding public and private infrastructure for the purpose of identifying areas requiring mitigation. Once identified, mitigating action costs, both one-time and recurring, are to be borne by SNGS, LLC. Additionally, SNGS, LLC's Emergency Response Plan shall have provisions to reimburse the City of Sacramento for any costs of responding to an emergency, as well as damage caused by a project-related incident. The Emergency Response Plan shall be submitted to the SFD for review and approval prior to construction.	Less Than Significant (fire and police services)/ None (schools)
U-3: Project-Required Utility and Public Service Demands	Class II (wastewater)/ Class III (water and solid waste)	U-3: Prior to discharging any water into a local wastewater pipeline or facility, SNGS, LLC shall contact the City of Sacramento and Sacramento Regional County Sanitation District for approval. All discharges shall be in accordance with all local, state, and federal regulations pertaining to wastewater disposal.	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
<i>Transportation and Traffic</i>			
T-1: Road and Lane Closure	Class III (wellhead and compressor station)/Class II (pipeline segments)	T-1a: Prior to the start of construction, SNGS, LLC shall submit a Traffic Control Plan (TCP) to the City of Sacramento and the Sacramento Fire Department (SFD). The city has jurisdiction over public roads that would be affected by underground construction activities as part of the required traffic encroachment permits. The public roadways that may be affected by construction activities are Power Inn Road, Junipero Street, Caroline Drive, and Fruitridge Road. The TCP shall define the locations of all roads that would need to be temporarily closed due to construction activities, including hauling of oversized loads by trucks and trenching activities (pursuant to SMC Section 12.16.020, temporary street closures require a permit from the city manager). Input and approval from the City of Sacramento and SFD shall be obtained and copies of approval letters from each jurisdiction must be provided to the CPUC prior to the start of construction within the jurisdiction. The TCP shall define the use of flag persons, warning signs, lights, barricades, and cones according to standard guidelines outlined in the Caltrans Construction Manual (2007), the Standard Specifications for Public Works Construction (Public Works Standards 2006), and the Work Area Traffic Control Handbook (WATCH) (American Public Works Association 2006). Documentation of the approval of these plans and the issuance of encroachment permits (if applicable) shall be provided to the CPUC prior to the start of construction activities that require temporary closure of a public roadway.	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>T-1b: SNGS, LLC shall restrict all necessary lane closures or obstructions on major roadways associated with underground construction activities to off-peak periods in urbanized areas to mitigate traffic congestion and delays. Lane closures in urbanized areas must not occur between 6:00 a.m. and 9:30 a.m. and between 3:30 p.m. and 6:30 p.m., or as directed in writing by the affected public agencies. Where feasible, nighttime construction with steel plates covering trenches during the day will be implemented, subject to the approval of agencies having jurisdiction over such measures. All trenching activities within the City of Sacramento shall comply with SMC Section 12.12.070 requirements that, “no trench shall be opened in any street for the purpose of laying pipes, conduits, or ducts more than four hundred (400) feet in advance of the pipe, conduit, or ducts being placed in the trench, except when the prior written consent of the director has been obtained” (Sacramento, City of 2000).</p>	
T-2: Construction-Generated Traffic	Class II	<p>T-2: The Traffic Control Plan described in Mitigation Measure T-1a shall also provide measures to ensure that traffic congestion and delay resulting from project construction are minimized by incorporating features such as:</p> <ul style="list-style-type: none"> • Staggered Shift Hours. During the peak period of construction activity, construction shifts shall be staggered to the degree possible, such that employee arrivals and departures from the site will avoid local roadway peak hours (7:30–8:30 a.m. and 4:30–5:30 p.m.) in the project vicinity. In order to minimize potential impacts to Fruitridge Road during the proposed tie-in to SMUD Line 700, construction activities shall occur during off- 	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		<p>peak nighttime hours. Trench plates shall be used to facilitate daytime traffic operations; however, pursuant to SMC §12.20.040, trench plates shall not be utilized for more than 3 calendar days in any location.</p> <ul style="list-style-type: none"> • Truck Scheduling. Construction-related truck traffic shall be scheduled to avoid travel during peak periods of traffic on the surrounding roadways. Similarly, delivery of required piping and construction materials shall be coordinated to avoid delivery during peak periods of traffic. 	
T-3: Physical Impacts to Roads and Sidewalks	Class II	<p>T-3: If damage to roads, sidewalks, and/or medians occurs, SNGS, LLC shall coordinate repairs with the affected public agencies to ensure that any damage is adequately repaired. Roads disturbed by construction activities or construction vehicles shall be properly restored to ensure long-term protection of road surfaces. Care shall be taken to prevent damage to roadside drainage structures. Roadside drainage structures and road drainage features (e.g., rolling dips) shall be protected by regrading and reconstructing roads to drain properly. Said measures shall be incorporated in an access agreement/easement with the applicable governing agency prior to construction. Underground trenching activities in roadways shall require returning the affected roadways to previous conditions pursuant to the affected jurisdiction's encroachment permits and franchise agreements.</p>	Less Than Significant
T-4: Impacts of Construction on Transit and Rail Operations	Class III	None	Less Than Significant
T-5: Interference with Pedestrian/Bicycle Circulation and Safety	Class II	<p>T-5: Where construction would result in temporary closures of sidewalks and other pedestrian facilities, SNGS, LLC shall provide temporary pedestrian access through alternative routes avoiding the construction areas.</p>	Less Than Significant

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
		Affected pedestrian facilities and the alternative facilities or detours to be provided shall be identified in the TCP. Where construction activity will result in bike route or bike path closures, appropriate detours and signs shall be provided. Where construction will affect bicycle travel on streets without bicycle facilities or in areas where pedestrians could enter, requirements for barricades to prevent entry or for plates to cover trenches will be used in accordance with the permit requirements of the local jurisdiction.	
T-6: Interference with Emergency Response	Class II	T-6: SNGS, LLC shall coordinate in advance with local jurisdictions to avoid restricting movements of emergency vehicles. SNGS, LLC shall request that police departments, fire departments, ambulance services, and paramedic services be notified in advance by each jurisdiction of the proposed locations, nature, timing, and duration of the construction activities and advised of any access restriction that could negatively affect their emergency response times. If necessary, SNGS, LLC shall assist local jurisdictions to ensure that such emergency services are informed of the previously mentioned kinds of logistics related to its construction activities. If project construction will block access to nearby property, provisions shall be ready at these locations at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. TCP (Mitigation Measure T-1a) shall include details regarding coordination of emergency services and identified procedures to ensure effectiveness of emergency services along project area roadways.	Less Than Significant
T-7: Construction Would Cause Temporary Loss of Parking	Class III	None	Less Than Significant
T-8: Conflict with Planned Roadway Improvement Projects	No Impact	None	None

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
T-9: Restricted Access to Properties	Class II	<p>T-9a: SNGS, LLC will notify affected parties of potential obstructions to access and shall make provisions for alternative access. Alternative access provisions will be provided by SNGS, LLC where feasible, with guide signs to inform the affected parties and the public. SNGS, LLC will give written notification to all landowners along the ROW of the construction schedule, and shall explain the exact location and duration of construction activities proposed for the wellhead site, compressor station, and pipeline alignment route and construction activities within each street (e.g., which lanes will be temporarily closed, at what times of the day, and on what dates). SNGS, LLC shall identify locations of any potential access obstruction, and shall make alternative access provisions. Written notification shall include telephone numbers for SNGS, LLC's public relations liaison and shall encourage affected parties to voice their concerns with SNGS, LLC prior to the start of construction activities so that individual problems and solutions may be identified. Alternative access provisions shall include SNGS, LLC-provided signage and, if necessary, alternative parking as provided and approved by local agencies, as well as open trenches to be covered during periods of inactivity with steel plates in order to provide maximum weight allowance for anticipated traffic.</p>	Less Than Significant
		<p>T-9b: SNGS, LLC will schedule construction so that at least one access driveway of affected businesses is left unblocked during all business hours or hours of use. This scheduling shall be provided by SNGS, LLC to the affected tenants so that they can inform employees.</p>	

Table ES-1 (Continued)

Impact	Impact Class	Mitigation Measures	Residual Impact
<i>Visual</i>			
V-1: Short-Term Visual Impacts: Construction Lighting	Class II	V-1: Site lighting will be hooded and directed toward the interior of the wellhead, compressor station, and HDD drilling locations.	Less Than Significant
V-1: Short-Term Visual Impacts: Scenic Views	Class III	None	Less Than Significant
V-2: Long-Term Visual Impacts: Scenic Views and Lighting	Class III	None	Less Than Significant

¹ Emissions reduction targets and strategies mentioned in Impact A-8 are under consideration by the California Air Resources Board (CARB).

² The potential for gas to leak from the reservoir is remote, but has a potential for substantial consequences from fire and explosions in a densely populated area.

Table ES-2
Proposed Project vs. Alternatives Summary of Environmental Impact Conclusions

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
Air Quality	Impact A-2 (for construction in Sacramento County) was determined to be Class II. Impacts A-1, A-3, A-4, A-5, and A-6 were determined to be Class III.	Impacts similar to the Proposed Project during operation. Less short-term construction impacts due to shorter construction time because of decreased pipeline length.	Impacts similar to the Proposed Project during operation. Greater short-term construction impacts due to longer construction time because of increased pipeline length.	Impacts similar to the Proposed Project during operation. Greater short-term construction impacts due to longer construction time because of increased pipeline length.	Impacts similar to the Proposed Project but this alternative would have a slightly longer construction time and greater impact area since the pipeline route between the wellhead and compressor station is 450 feet longer than the Proposed Project.	Impacts similar to the Proposed Project but this alternative would have a slightly longer construction time and greater impact area since the pipeline route between the wellhead and compressor station is 350 feet	Impacts similar to the Proposed Project but this alternative would have a slightly shorter construction time and decreased impact area since the pipeline route between the wellhead and compressor station is 250 feet

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
						longer than the Proposed Project.	shorter than the Proposed Project.
Biological Resources	Impacts B-1 and B-3 were determined to be Class II. Impacts B-2, B-4, and B-5 were determined to be Class III. Impact B-6 involved no impact.	Impacts slightly greater than the Proposed Project because it has a greater potential to impact special-status species and wetlands. Similar to the Proposed Project, Impacts B-1 and B-3 would be Class II and would require mitigation.	Impacts greater than the Proposed Project as alternative would increase impact area due to greater pipeline length. Similar to the Proposed Project, Impacts B-1 and B-3 would be Class II and would require mitigation.	Since the Proposed Project is in an urbanized area, impacts substantially greater than the Proposed Project due to location in the Cosumnes River Preserve, which is one of the biologically richest regions in California's Central Valley.	Impacts slightly less than the Proposed Project as a portion of the pipeline between the wellhead and compressor station crosses an industrial yard. No biological resources would be impacted through this portion of the alignment, reducing the amount of impact to grassland habitat and potential wetlands.	Impacts similar to the Proposed Project because it would disturb the same areas of habitat and wetlands. The additional length of pipeline between the wellhead and compressor station would impact urbanized areas. Similar to the Proposed Project, Impacts B-1 and B-3 would be Class II and would require mitigation.	Impacts slightly less than the Proposed Project because the shorter pipeline length between the wellhead and compressor station would slightly reduce impacts to the resources. Similar to the Proposed Project, Impacts B-1 and B-3 would be Class II and would require mitigation.
Cultural Resources	Impact C-1 was determined to be Class III for project facilities and involved no impact to	Impacts similar to the Proposed Project because similar ground disturbance	Impacts similar to the Proposed Project. However, the increased pipeline length may	Impacts similar to the Proposed Project. However, the increased pipeline length	Impacts slightly greater than the Proposed Project due to increased length of pipeline	Impacts slightly greater than the Proposed Project due to increased length of pipeline	Impacts slightly less than the Proposed Project due to decreased length of pipeline

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
	historical features of the former Army Depot. Impact C-2 was determined to be Class II; Impact C-3 involved no impact.	activities would occur during construction.	have the potential to impact additional sites, resulting in overall greater impacts.	may have the potential to impact additional sites, resulting in overall greater impacts.	required between the wellhead and compressor station. The longer pipeline may have the potential to impact additional sites, resulting in slightly greater impacts. Similar to the Proposed Project, Mitigation Measures would be required to reduce impacts to less than significant Class II.	required between the wellhead and compressor station. The longer pipeline may have the potential to impact additional sites, resulting in slightly greater impacts. Similar to the Proposed Project, Mitigation Measures would be required to reduce impacts to less than significant Class II.	required between the wellhead and compressor station.
Geology and Soils	Impacts G-1, G-4, G-6, and G-8 involved no impact. Impacts G-2 and G-9 were determined to be Class II. Impacts G-3, G-5, and G-7 were determined to be Class III.	Impacts similar to the Proposed Project because the geologic conditions are similar.	Impacts similar to the Proposed Project because the geologic conditions are similar.	Impacts similar to the Proposed Project because the geologic conditions are similar.	Impacts similar to the Proposed Project since it is passing through the same area as the Proposed Project with the same geologic conditions.	Impacts similar to the Proposed Project since it is passing through the same general area.	Impacts similar to those of the Proposed Project since it is passing through the same general area.

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
Hazardous Materials, Public Health and Safety	Impacts HAZ-1a, HAZ-1b, and HAZ-1c were determined to be Class II. Impacts HAZ-2a and HAZ-2b were determined to be Class I. Impact HAZ-3 was determined to be Class II. Impact HAZ-4 was determined to be Class III. Impact HAZ-5 was determined to have no impacts. Impact HAZ-6 was determined to be Class II.	Impact HAZ-2 would remain Class I; however, the consequences of the impact is considered less than that of the Proposed Project since less people would be at risk due to lower population densities. Other impacts would be similar to those of associated with the Proposed Project.	Impact HAZ-2 would be less than the Proposed Project due to this alternative's location in a less populated area, reducing the consequences of a gas leak or pipeline rupture to Class II, Other impacts would be similar to those associated with the Proposed Project.	Impact HAZ-2 would be less than the Proposed Project due to this alternative's location in a less populated area, reducing the consequences of a gas leak or pipeline rupture to Class II, Other impacts would be similar to those associated with the Proposed Project.	Impacts similar to those of the Proposed Project since it is passing through the same area as the Proposed Project.	Impacts similar to those of the Proposed Project since it is passing through the same area as the Proposed Project.	Impacts similar to those of the Proposed Project since it is passing through the same area as the Proposed Project.
Hydrology and Water Quality	Impact H-8 (operation of natural gas field) was determined to be Class I. Impact H-3 (belowground facilities), H-4 (aboveground facilities), H-5, and H-6 (aboveground facilities) were	Short-term construction impacts greater than the Proposed Project due to location in San Joaquin Delta Region. Similar impacts to the Proposed Project due to the	Short-term construction impacts greater than the Proposed Project due to location in San Joaquin Delta Region. Similar impacts to the Proposed Project due to the potential	Short-term construction impacts greater than the Proposed Project due to location in San Joaquin Delta Region. Similar impacts to the Proposed Project due to the	Impacts slightly greater than the Proposed Project due to increased construction disturbance (longer pipeline route) between the wellhead and compressor station.	Impacts slightly greater than the Proposed Project due to increased construction disturbance (longer pipeline route) between the wellhead and compressor station.	Impacts slightly less than the Proposed Project due to decreased construction disturbance (shorter pipeline route) between the wellhead and compressor station.

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
	determined to be Class II. Impacts H-1, H-2, H-4 (belowground facilities), H-6 (belowground facilities), and H-7 were determined to be Class III Impacts. Impact H-3 (aboveground facilities) involved no impact with the exception of the compressor station site with regard to wetland resources (addressed in above as Biological Resources).	potential release of gas into aquifer (H-8).	release of gas into aquifer (H-8)	potential release of gas into aquifer (H-8).			
Land Use, Agriculture, and Recreation	Impacts L-2 (compressor station and pipeline segment two and Florin Gas Field), L-4, L-6, and L-7 were determined to have no impact. Impacts L-1, L-2 (wellhead site and	Impact LU-1 may be greater because site may not be compatible with current land use plans for the area. Impacts to LU-6 and LU-7 greater due to	Impact LU-1 may be greater because site may not be compatible with current land use plans for the area. Impacts to LU-6 and LU-7 greater due to potential	This alternative has greater impacts to land use as it may not be compatible with current land use plans and due to the potential loss of agricultural	Impacts similar to the Proposed Project since it is passing through the same area as the Proposed Project.	Impacts similar to the Proposed Project since it is passing through the same area as the Proposed Project.	Impacts similar to the Proposed Project. But less impact to land use due to the reduced length of pipeline.

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
	pipeline segment one), and L-5 were determined to be Class III and Impact L-3 (wellhead site, pipeline segment one, compressor station site, and pipeline segment two) were determined to be Class II.	potential loss of agricultural land. Other land use impacts similar to the Proposed Project.	loss of agricultural land. Other land use impacts similar to the Proposed Project.	lands (Impacts L-1, L-6, and L-7). It could result in impacts to the Cosumnes River Preserve. Other land use impacts similar to the Proposed Project.			
Noise and Vibration	Impact N-1 (wellhead site construction noise) was determined to be Class I. For the wellhead site and pipeline segment one (Impacts N-2 through N-4), impacts were determined to be Class III.	Noise impacts resulting from the development of this alternative would be slightly less than those of the Proposed Project since drilling activities at the wellhead site would be located farther from sensitive uses.	Noise impacts associated with this alternative would be less than the Proposed Project since the wellhead site would be located farther from sensitive uses.	Generally, the noise impacts associated with this alternative would be less than those of the Proposed Project since drilling activities at the wellhead site would be located farther from sensitive uses.	Impacts slightly greater than the Proposed Project due to increased pipeline length between the wellhead and compressor station.	Impacts slightly greater than the Proposed Project due to increased pipeline length between the wellhead and compressor station.	Impacts slightly less than the Proposed Project due to decreased pipeline length between the wellhead and compressor station.
Population and Housing	Impacts P-1, P-3, and P-5 were determined to have no impact. Impact P-	Population and housing impacts resulting from this alternative would	Population and housing impacts resulting from this alternative would	Population and housing impacts resulting from this alternative would	Impacts similar to those of the Proposed Project since it is passing	Impacts similar to those of the Proposed Project since it is passing	Impacts similar to those of the Proposed Project since it is passing

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
	2 was determined to be Class III. Impact P-4 would not result in disproportionate degradation of inequality of economic benefits to low-income/minority communities. For safety issues, see Section D.6, Hazardous Materials, Public Health and Safety.	not be substantially different from the Proposed Project because this alternative would not place substantial facilities in the area and would presumably provide royalties to the land owners.	not be substantially different from the Proposed Project because this alternative would not place substantial facilities in the area and would presumably provide royalties to the land owners.	not be substantially different from the Proposed Project because this alternative would not place substantial facilities in the area and would presumably provide royalties to the land owners.	through the same area as the Proposed Project.	through the same area as the Proposed Project.	through the same area as the Proposed Project.
Public Services and Utilities	Impacts U-1 (utility disruptions) and U-2 (fire and police services) were determined to be Class II. Impact U-3 was determined to be Class II for wastewater and remaining services were Class III. Impact U-2 (schools) was determined to have no impact.	Impacts similar to the Proposed Project. This alternative would require similar U-1 mitigation measures as the Proposed Project which would reduce this impact to less than significant Class II. Similar to the Proposed Project, no impacts would	Due to the increased length of pipeline required to connect this gas field to the SMUD system, this alternative would potentially increase conflicts with existing utilities and could cause public service disruptions. This alternative would require similar U-1	Due to the increased length of pipeline required to connect this gas field to the SMUD system, this alternative would potentially increase conflicts with existing utilities and could cause public service disruptions. This	Impacts related to utility disruptions would be slightly greater than those of the Proposed Project due to increased length of pipeline required between the wellhead and compressor station. This alternative would require similar U-1 mitigation measures as the Proposed Project	Impacts related to utility disruptions would be slightly greater than those of the Proposed Project due to increased length of pipeline required between the wellhead and compressor station. This alternative would require similar U-1 mitigation	Impacts related to utility disruptions would be slightly less than those of the Proposed Project due to decreased length of pipeline required between the wellhead and compressor station. This alternative would require similar U-1 mitigation

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
		occur to schools. Implementation of this alternative would result in slightly longer response times for fire and police due to its suburban location. However, the construction and operation impacts related to fire and police services would be similar to the Proposed Project and would require implementation of similar U-2 mitigation measures which would reduce this impact to less than significant Class II. Impacts to utility and public service demands (water, solid waste, and wastewater) would	mitigation measures as the Proposed Project which would reduce this impact to less than significant Class II. Implementation of this alternative would result in longer response times for fire and police due to its rural location. However, the construction and operation impacts related to fire and police services would be similar to the Proposed Project and would require implementation of similar U-2 mitigation measures which would reduce this impact to less than significant Class II. As with the	alternative would require similar U-1 mitigation measures as the Proposed Project which would reduce this impact to less than significant Class II. Implementation of this alternative would result in longer response times for fire and police due to its rural location. However, the construction and operation impacts of the facilities would be similar to the Proposed Project and would require implementation of similar U-2 mitigation measures which would reduce this	between the wellhead and compressor station which would reduce this impact to less than significant Class II. Impacts to public service system disruptions (fire, police, and schools) and utility and public service demands on water, solid waste, and wastewater would be similar to the Proposed Project as the pipeline route is in the same area.	measures as the Proposed Project between the wellhead and compressor station which would reduce this impact to less than significant Class II. Impacts to public service system disruptions (fire, police, and schools) and utility and public service demands on water, solid waste, and wastewater would be similar to the Proposed Project as the pipeline route is in the same area.	measures as the Proposed Project between the wellhead and compressor station which would reduce this impact to less than significant Class II. Impacts to public service system disruptions (fire, police, and schools) and utility and public service demands on water, solid waste, and wastewater would be similar to the Proposed Project as the pipeline route is in the same area.

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
		be similar to the Proposed Project.	Proposed Project, no impacts would occur to schools. Although impacts to utility and public service demands (water, solid waste, and wastewater) would be greater than the Proposed Project due to rural location, impacts are anticipated to be less than significant Class III.	impact to less than significant Class II. Similar to the Proposed Project, no impacts would occur to schools. Although impacts to utility and public service demands (water, solid waste, and wastewater) would be greater than the Proposed Project due to rural location. Impacts are anticipated to be less than significant Class III.			
Transportation and Traffic	Impacts T-1 (wellhead site and compressor station) and T-7 were determined to be Class III. Impacts T-1 (connecting pipelines), T-2, T-3, T-5, T-6, and	Because of its rural location, impacts would be less than the Proposed Project.	Because of its rural location, impacts would be less than the Proposed Project.	Because of its rural location, impacts would be less than the Proposed Project.	Impacts less than the Proposed Project.	Impacts similar to the Proposed Project.	Impacts similar to the Proposed Project.

Table ES-2 (Continued)

Issue Area	Proposed Project	Freeport Gas Field Alternative	Snodgrass Slough Gas Field Alternative	Thornton Gas Field Alternative	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 1	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 2	Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3
	T-9 were determined to be Class II. Impacts T-4 and T-8 involved no impact.						
Visual Resources	Impact V-1 (glare associated with wellhead site and HDD construction) was determined to be Class II. Impacts V-1 (remaining aboveground and belowground construction) and V-2 were determined to be Class III.	As with the Proposed Project, implementation of this alternative with mitigation would not result in significant impacts to visual resources. Night-time light and glare associated with construction activity is considered a temporary significant impact (Class II) and would require mitigation.	As with the Proposed Project, implementation of this alternative with mitigation would not result in significant impacts to visual resources. Night-time light and glare associated with construction activity is considered a temporary significant impact (Class II) and would require mitigation.	This alternative has a potential to create visual resource impacts for visitors/hikers to the Cosumnes River Preserve due to views of project construction activities and long-term views of aboveground facilities. However, as with the Proposed Project, implementation of this alternative with mitigation would not result in significant impacts to visual resources.	Short-term construction-related impacts slightly greater than the Proposed Project due to increased length of pipeline required between the wellhead and compressor station. Impacts are anticipated to be less than significant Class III.	Short-term construction-related impacts slightly greater than the Proposed Project due to increased length of pipeline required between the wellhead and compressor station. Impacts are anticipated to be less than significant Class III.	Short-term construction-related impacts slightly less than the Proposed Project due to decreased length of pipeline required between the wellhead and compressor station. Impacts are anticipated to be less than significant Class III.

Table ES-3
Proposed Project vs. Alternatives: Summary of Significant
Unmitigable (Class I) Impacts

Issue Area	Significant Impacts (Class I)
<i>Proposed Project</i>	
Hazardous Materials, Public Health and Safety See Section D.6	<p>Potential hazards associated with reasonably foreseeable upset and accident conditions involving the release of hazardous materials</p> <p>Impact HAZ-2a: Potential impact from gas leaking from the gas reservoir after repressurization of the gas field for gas storage.</p> <p>Impact HAZ-2b: Potential for release of natural gas and resulting fire and explosion from pipelines.</p> <p>Potential for hazards, such as the release of natural gas and/or rupture of the proposed pipelines resulting in fire, explosion, and release of toxic substance.</p>
Hydrology and Water Quality See Section D.7	<p>Impact H-8: Operation and maintenance impacts to surface-water and groundwater quality.</p> <p>Release of gas due to failure of the cap rock resulting in contamination of the aquifer.</p>
Noise and Vibration See Section D.9	<p>Impact N-1: Construction activities would temporarily impact local noise levels.</p> <p>Well drilling at the wellhead site would exceed the City of Sacramento's noise standard impacting nearby sensitive receptors.</p>
<i>Alternatives—Class I Impacts Eliminated or Remaining by Alternative</i>	
Freeport Gas Field Alternative	Class I impacts remain for hazardous materials, public health and safety (HAZ-2a and HAZ-2b). Class I impacts related to hydrology and water quality (H-8) also remain. Impacts regarding construction noise (N-1) would be less than significant.
Snodgrass Slough and Thornton Gas Field Alternatives	Changes Impacts HAZ-2a and HAZ-2b Class I impacts to Class II impacts (less than significant with mitigation). The mitigation would be for potential hazards associated with reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Class I impacts related to hydrology and water quality (H-8) remain. Impacts regarding construction noise (N-1) would be less than significant.
Project Design Alternative Wellhead Site to Compressor Station Pipeline Routes 1 and 2	Class I impacts remain for hazardous materials, public health and safety (HAZ-2a and HAZ-2b); hydrology and water quality (H-8); and noise (N-1).
Project Design Alternative Wellhead Site to Compressor Station Pipeline Route 3	Class I impacts would remain for hazardous materials, public health and safety (HAZ-2a and HAZ-2b); Impacts would be slightly less for hydrology and water quality (H-8) and construction noise (N-1), but would still remain significant.