



**San Joaquin Valley Unified
Air Pollution Control District**

**Chevron U.S.A. Inc.
Lost Hills Steam Pilot Project**

Project Number S-1092524

**Lost Hills Oil Field
Kern County**

**Initial Study and Draft
Mitigated Negative Declaration**

December 2011

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT GOVERNING BOARD 2011

CHAIR: J. STEVEN WORTHLEY
Supervisor, Tulare County

VICE CHAIR: Ann Johnston
Mayor, City of Stockton

MEMBERS:

TONY BARBA
Supervisor, Kings County

ALEXANDER C. SHERRIFFS, M.D.
Appointed by the Governor

JUDITH G. CASE
Supervisor, Fresno County

CHRIS VIERRA
Mayor, City of Ceres

RONN DOMINICI
Supervisor, Madera County

HUB WALSH
Supervisor, Merced County

HENRY JAY FORMAN, PH.D
Appointed by Governor

RAYMOND A. WATSON
Supervisor, Kern County

RANDY MILLER
Mayor, City of Taft

VACANT
Small City Representative, Kings County

WILLIAM O'BRIEN
Supervisor, Stanislaus County

VACANT
Large City Representative, Tulare Count

LEROY ORNELLAS
Supervisor, San Joaquin County

AIR POLLUTION CONTROL OFFICER:

SEYED SADREDIN



INITIAL STUDY AND DRAFT MITIGATED NEGATIVE DECLARATION

Chevron U.S.A. Inc. Lost Hills Steam Pilot Project (Project S-1092524)

December 2011

Lead Agency:	San Joaquin Valley Air Pollution Control District 1990 East Gettysburg Avenue Fresno CA 93726-0244
Agency CEQA Contact:	Jessica Willis, Air Quality Specialist Phone: (559) 230-6000 Fax: (559) 230-6061
Agency Permits Contact:	Richard Edgehill, Air Quality Engineer Phone: (661) 392-5500 Fax: (661) 392-55851
Project Sponsor and Location:	Chevron U.S.A. Inc. P. O. Box 1392 Bakersfield, CA 93302
Project Contact:	Larry Landis, Health, Environment, and Safety Manager Phone: (661) 654-7141 Fax: (661) 654-7606



A. INTRODUCTION

The San Joaquin Valley Unified Air Pollution Control District (District) has received an Authority to Construct application from Chevron U.S.A. Inc. (Chevron) to install and operate ten (10) natural gas-fired 85.0 MMBtu/hr and one (1) 62.5 MMBtu/hr steam generators equipped with low-NO_x burner assemblies, or equivalent burners, and flue gas recirculation at various specified locations within Chevron's Light Oil Western Stationary Source in the Lost Hills Oil Field, Kern County, California.

B. PURPOSE AND AUTHORITY

The District has discretionary approval power over the project via its Permits Required Rule (Rule 2010) and New and Modified Stationary Source Review Rule (Rule 2201). No other agency is known to have discretionary approval over the project. As such, the District is the public agency having principal responsibility for approving the project and serves as Lead Agency; California Environmental Quality Act (CEQA) Guidelines 15367.

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The ERG was prepared to comply with this requirement and is an internal document used to comply with CEQA.

The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Under CEQA the Lead Agency is required to:

- Conduct preliminary reviews to determine if applications are subject to CEQA [CCR §15060].
- Conduct review to determine if projects are exempt from CEQA [CCR §15061].



- Prepare Initial Studies for projects that may have adverse environmental impacts [CCR §15063].
- Determine the significance of the environmental effects caused by the project [CCR §15064]
- Prepare Negative Declarations or Mitigated Negative Declarations for projects with no significant environmental impacts [CCR §15070].
- Prepare, or contract to prepare, EIRs for projects with significant environmental impacts [CCR §15081].
- Adopt reporting or monitoring programs for the changes made to projects or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment [PRC §21081.6 & CCR §15097].
- Comply with CEQA noticing and filing requirements.

C. PROJECT BACKGROUND INFORMATION

Project Description

Chevron is an oil production company with facilities located in Kern County, California. Chevron is a major source as defined in District Rule 2201 (New and Modified Stationary Source Review Rule), section 3.23. Therefore, the installation and operation of stationary source equipment for this project is subject to District permit requirements. One major requirement is that new and modified equipment that has air contaminant emissions must satisfy the requirements of New Source Review (NSR). The main requirements of NSR are to require the installation of Best Available Control Technology (BACT) to minimize emission increases from such equipment and to mitigate emission increases over certain thresholds by providing emission reductions either by limiting the use of existing equipment or by providing emission offsets.

Chevron proposes to install and operate eleven (11) new steam generators and supporting water treatment facilities within their current operations in the Lost Hills Oil Field. The steam generators will be located at various specified locations within their existing Light Oil Western Stationary Source (Facility S-2010). The proposal includes ten (10) natural gas-fired 85.0 MMBtu/hr and one (1) 62.5 MMBtu/hr steam generators equipped with North American GLE low-NOx burner assemblies (or equivalent) capable of achieving NOx emissions of 7 ppmvd @ 3% O₂ and flue gas recirculation (FGR). The steam generators are necessary to produce steam for existing and future thermally enhanced oil recovery (TEOR) operations. Chevron intends to stage construction of the steam generators over the next several years. As the units are built out, water softening facilities will be constructed to keep pace with the increase demand for soft water that each steam generator requires. The water softening facilities will consist fundamentally of resin beds in vessels, through which the mineral laden raw water will be pumped. The water softening resin will be replenished or refreshed with salt water brine.



Collectively the water softening facilities (to include pipelines, waste water injection wells, etc.) and the steam generators constitute the “Project” and are referred to as such throughout this document. The District has received an Authority to Construct (ATC) application for the new steam generators and prepared an engineering evaluation (EE) to evaluate the impacts from emissions associated with the operations of the steam generators. Water softening plant operations are not expected to result in the release of fugitive criteria pollutant emissions; therefore an ATC application is not required for the water softening plant.

Chevron Facility S-2010 received their Title V permit on April 30, 2004. Pursuant to Rule 2520 (Federally Mandated Operating Permits), Section 3.20, the Project can be classified as a Title V significant modification and can be processed with a Certificate of Conformity (COC). As such, prior to the issuance of the ATCs, the Project must be submitted to the US Environmental Protection Agency (US EPA) for a 45-day comment period. Chevron must apply to administratively amend the Title V operating permit to include the requirements of the ATCs issued with the Project.

Project Construction

Construction of the steam generators is expected to begin in 2013 with full buildout expected to occur after 2016, with the water treatment facilities being built concurrently. The steam generators and water softening facilities will be sited in areas where there will be minimal “new” disturbance of soil, native vegetation, and habitat. Construction activities include site preparation, installation of eleven (11) steam generators, installation of water treatment equipment, and installation of piping and electrical systems.

Approximately six (6) acres of soil is expected to be disturbed in connection with the construction. All of the surface area disturbed by construction is expected to remain as part of the plant site after construction is complete. Both project areas (Section 29 and Section 33) will have two (2) vehicle access points during and after construction. Temporary equipment staging areas will become part of the plant site and/or be set aside for employee and visitor vehicle parking.

There will be few if any new permanent employees; existing Chevron staff and contract workers will be reassigned to this location from other positions at Lost Hills or nearby projects that are ramping down. It is expected that approximately 78 workers will be needed during peak construction activities.

Process Description

A steam generator is a device that uses a heat source to boil liquid water and convert it into its vapor phase, referred to as steam. The heat may be derived from the combustion of a fuel. For this project, the steam generators will be authorized to burn



only Public Utility Commission (PUC) quality natural gas with a sulfur content not exceeding 1.0 grain of sulfur per 100 standard cubic feet (scf). The proposed steam generators will be equipped with North American GLE low-NO_x burner assemblies (or equivalent) capable of achieving NO_x emissions of 7 ppmvd at 3% O₂ and FGR, which satisfies the Technologically Feasible BACT requirement of District Rule 2201. All water used in the steam generators will come from the Tulare Formation following softening.

Oilfield steam generators are designed to produce wet steam in the range of 50 - 70% quality and at pressures up to 2,500 psia for injection into oil reservoirs to enhance the recovery of viscous crude oils. Steam leaves the steam generation plant and enters the field distribution system. The distribution system transports the steam to measurement and control equipment located at each gauge setting. There the steam is metered and controlled to achieve the target single-well injection rate of between 2,500 and 5,000 barrels of steam per cycle. The new steam generators will be used for steam enhanced oil production at various specified locations. Chevron has an existing ATC (S-2010-308) for 80 cyclic steam wells. Depending on the results of the initial pilot to define the optimum cycle frequency and steam injection rates, Chevron may apply for additional wells.

Chevron proposes to operate the steam generators with NO_x emissions equal to or less than the 15 ppmvd @ 3% O₂ emission limit in District Rule 4306 NO_x during a 60-day “shakedown” period immediately following start-up of each new steam generator. The shakedown period for each unit will conclude upon completion of the required start-up compliance source test and will not exceed 60-days. After the shakedown period, the NO_x emission limit will be 7 ppmv @ 3% O₂.

Project Location

The Project is located in Kern County, California, which is the San Joaquin Valley Air Basin (see Figure 1). Table 1 below identifies the three (3) specified locations in which the steam generators will be located. These locations are within the boundaries of the existing Lost Hills Oil Field, as designated by the California Department of Oil, Gas, and Geothermal Resources (DOGGR).

The Lost Hills Oil Field covers an area of approximately 31.25 square miles and is located approximately 45 miles northwest of the City of Bakersfield and two (2) miles northwest of the unincorporated community of Lost Hills (see Figures 2 and 3). Figure 4 and Figure 5 show the Project boundaries within the Lost Hills Oil Field.

The number of steam generators allowed in each project area will be limited as follows:

- No more than seven (7) units will be located in the NW $\frac{1}{4}$ of Section 29;
- No more than four (4) units will be located in the SE $\frac{1}{4}$ of Section 29; and
- No more than three (3) units will be located in the NW $\frac{1}{4}$ Section 33.



Table 1. Location of Proposed Project

Section	Township	Range	Meridian	General Plan Zone Code
29 (NW ¼)	26 S	21 E	MDB&M	8.1, 8.4
29 (SE ¼)				8.1, 8.4
33 (NW ¼)				8.4

A total of no more than eleven (11) units will be constructed. The varying number of steam generators allowed in each project area allows the applicant the flexibility to install the steam generators in various locations while also providing options for compliance with District permitting requirements and ensuring the project will not result in significant health risks.

General Plan Designation and Zoning

The Project site is currently designated in the Kern County 2009 General Plan as Intensive Agriculture (Code 8.1) and Mineral and Petroleum (Code 8.4) and is currently zoned as Exclusive Agriculture (Zone A). Pursuant to Section 19.12.020(E) of the Zoning Ordinance of Kern County; steam generators (excluding coal fired), are a permitted use, by right, in Zone A.

Surrounding Land Uses and Setting

The areas immediately surrounding the Project are currently zoned as Exclusive Agriculture (Zone A) and are designated in the Kern County 2009 General Plan as Intensive Agriculture (Code 8.1), Mineral and Petroleum (Code 8.4) and State and Federal Lands (Code 1.1). Land immediately north and east of the Project site is currently used for agriculture purposes, while the land south and west of the site is currently used for oil field production.

Lost Hills Elementary School and A. M. Thomas Middle School are located southeast of the Project site. The District has verified that the Project site is not within 1,000 feet of the outer boundary of either school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to the project.



Other Public Agencies Whose Approval Is Required

US Environmental Protection Agency (US EPA)

As the Project is classified as a Title V minor modification to be processed with a COC, it must be submitted to the US EPA for a 45-day comment period. Chevron must apply to administratively amend the Title V operating permit to include the requirements of the ATCs issued with the Project.

US Fish and Wildlife Service (USFWS)

The USFWS has regulatory authority over projects that could result in the “take” of any species identified as threatened or endangered. If the Project would result in the incidental take of any federally identified species, an Incidental Take Permit and/or a Habitat Conservation Plan would be required.

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR)

The DOGGR has the authority to order the re-abandonment of a previously abandoned well. Prior to construction, Chevron will provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the steam generator sites have been submitted to DOGGR for review.

California Department of Fish and Game (CDFG)

The CDFG has regulatory authority over projects that could result in the “take” of any species identified by the State of California as threatened or endangered. If the Project would result in the take of any identified species, an Incidental Take Permit would be required.

California Regional Water Quality Control Board (RWQCB)

The Project will result in no waste or water discharge; hence no approvals from the RWQCB will be required. Also, no streambed or lake alterations will occur as a result of the Project.

California Department of Transportation (Caltrans)

As the Project will not encroach on public right-of-ways, encroachment permits are required from Caltrans.



Kern County Planning Department

The Project is within Chevron's existing surface boundaries in the Lost Hills Oil Field. The proposed steam generators are permitted uses under the existing county land use designations and zoning. As such, the Kern County Planning Department requires only the issuance of grading and building permits. All applicable building permits from the Kern County Planning and Building Department will be acquired prior to commencement of site work. Currently no other specific project-related items have been identified which will require further approval by the Kern County Planning Department.

Other Agencies

The District is not aware of any other agencies with approval authority for the Project.

D. DECISION TO PREPARE A MITIGATED NEGATIVE DECLARATION

Consistent with CEQA requirements the District prepared an Initial Study that evaluated potential environmental effects of the Project. The District has determined that with mitigation the Project will have a less than significant impact on the environment. The District concludes that a Mitigated Negative Declaration would be appropriate for the Project. Project design elements and mitigation measures that reduce the Project's impact on the environment would be enforced through:

- District permit conditions and offset fees;
- Incorporation of Best Performance Standards (BPS);
- Corrective actions to be taken to reduce impacts if species known to be protected are identified within the Project site; and
- Cessation of construction activities if cultural/archaeological remains are found.



Figure 1: The San Joaquin Valley Air Basin

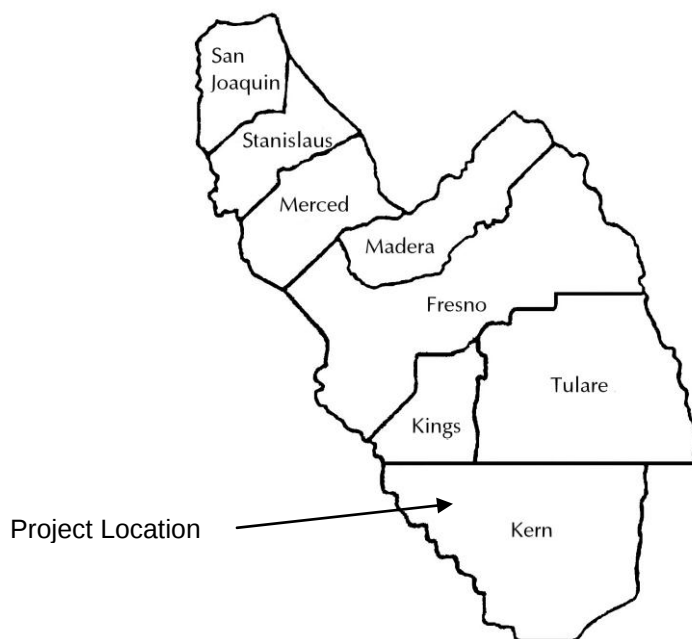
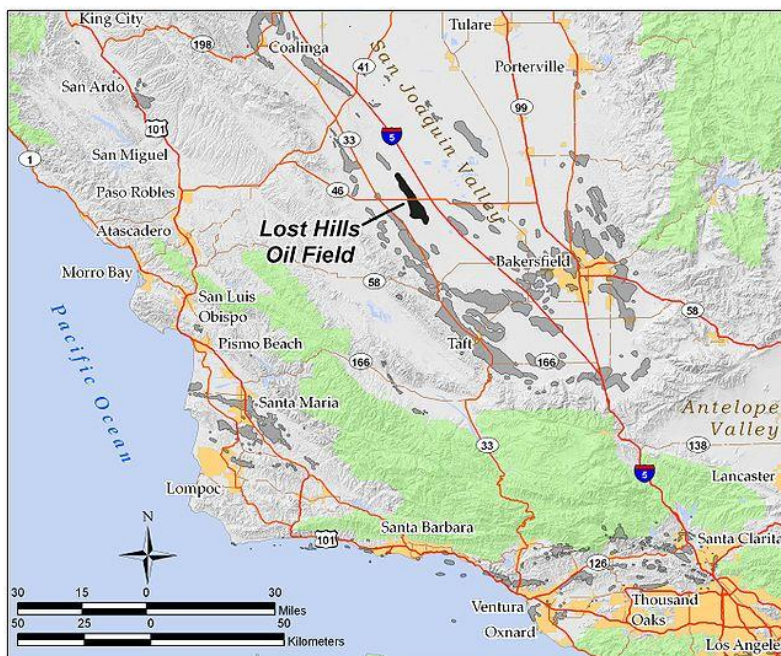


Figure 2: Lost Hills Oilfield



Map provided by Wikipedia. July 2010. Website: http://en.wikipedia.org/wiki/Lost_Hills_Oil_Field



Figure 3: Project Site and Vicinity Map

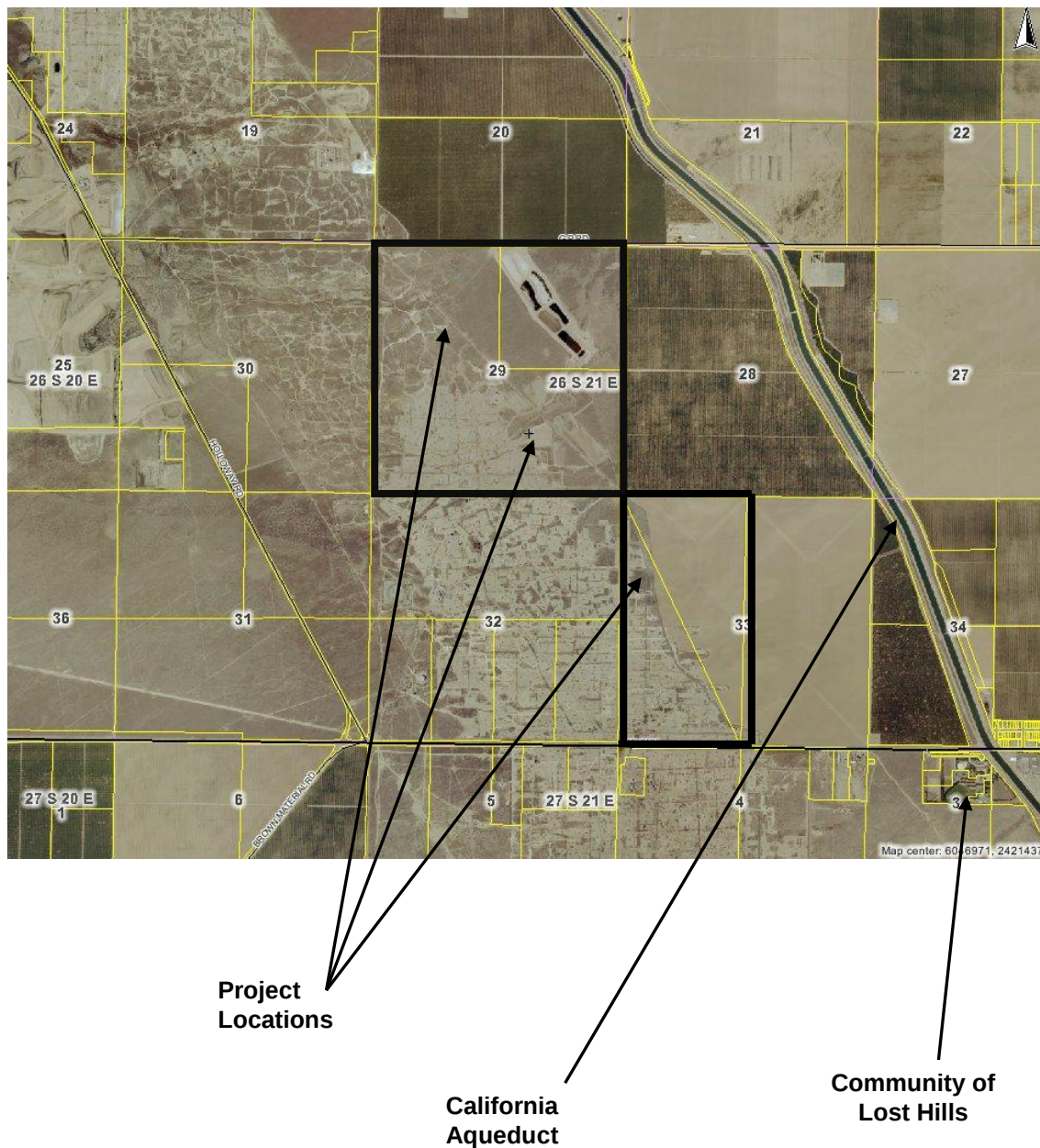




Figure 4: Lost Hills Oil Field and Project Boundary (Section 29)

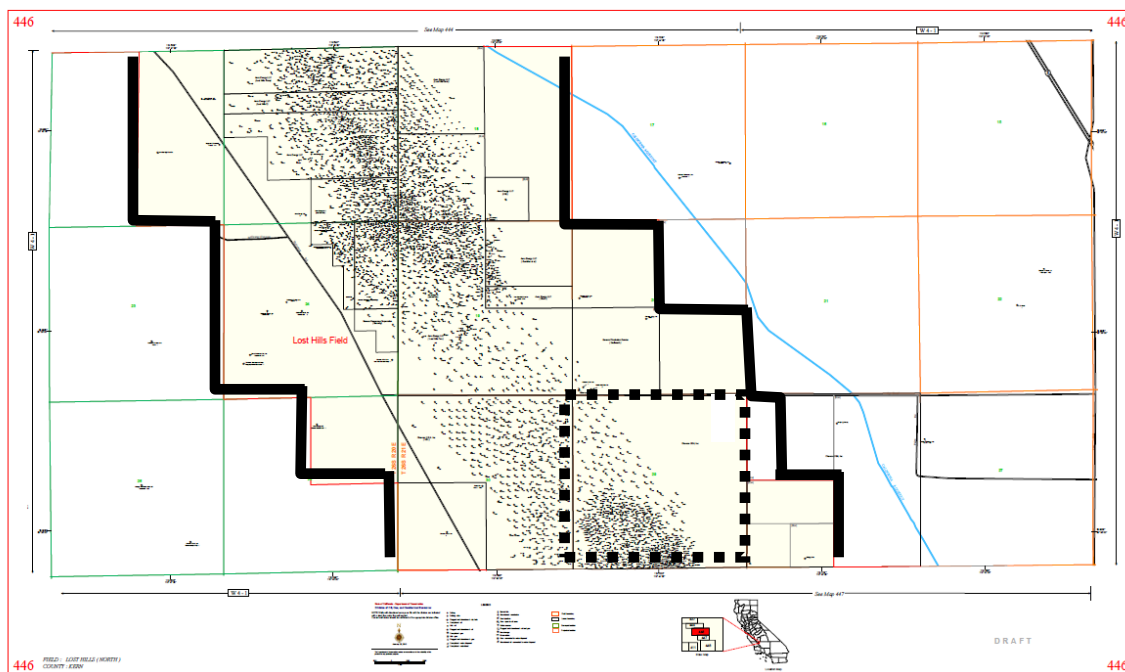
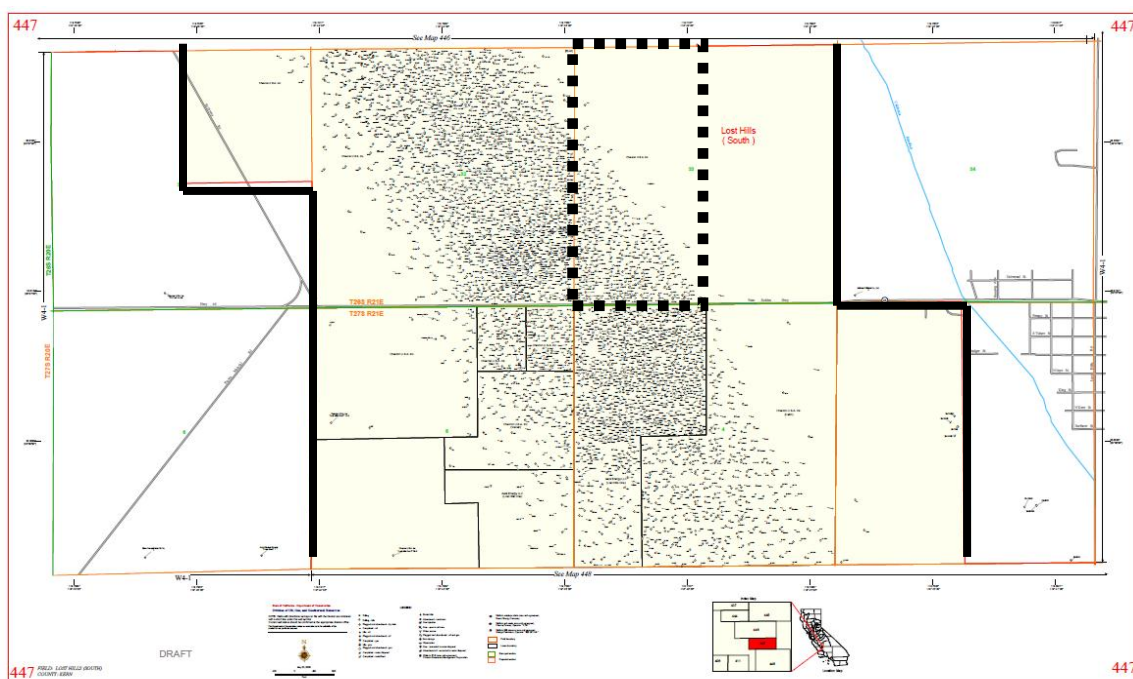


Figure 5: Lost Hills Oil Field and Project Boundary (Section 33)





E. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed Project, involving at least one impact that is a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated", as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☒	Air Quality
☒	Biological Resources	☐	Cultural Resources	☐	Geology / Soils
☐	Greenhouse Gas Emissions	☐	Hazards & Hazardous Materials	☐	Hydrology / Water Quality
☐	Land Use / Planning	☐	Mineral Resources	☐	Noise
☐	Population / Housing	☐	Public Services	☐	Recreation
☐	Transportation / Traffic	☐	Utilities / Service Systems	☐	Mandatory Findings of Significance

F. DETERMINATION

I certify that the Project was independently reviewed and analyzed and that this document reflects the independent judgment of the District.

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION has been prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: _____

Date: _____

Printed name: David Warner

Title: Director of Permit Services



G. ENVIRONMENTAL IMPACT CHECKLIST

I. AESTHETICS				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to trees, rock, outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

Scenic Vistas and Visual Character (a-d)

Conclusion: The Project will not have an impact on scenic vistas, damage scenic resources, degrade visual character in and around the sites or create new sources of light or glare.

Discussion: The Project is located within Chevron's existing surface boundaries in the Lost Hills Oil Field which historically has allowed for the exploration and production of oil. The Project is consistent with current and surrounding land uses.

No scenic vistas or highways exist on the Project site or on the properties adjacent to the Project site. No scenic resources such as rock outcroppings, trees, or historic buildings exist on the Project site. The absence of scenic vistas and other scenic resources on or near the Project site precludes the possibility of potential adverse impacts.

The Project is located approximately two (2) miles northwest of the community of Lost Hills and over one (1) mile from Highway 46. Existing lighted oilfield sources are located between the Project site and Lost Hills and Highway 46. Ground preparation activities will be conducted during daylight hours only. Minimal operational lighting may be installed at the site and will be consistent with the existing operations.

Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that construction and operation of the Project would have a detrimental impact on aesthetics.



Mitigation: None required.

References

California Department of Transportation. *California Scenic Highway Mapping System*.
Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

II. AGRICULTURAL RESOURCES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1197) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resource Board. Would the Project				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)), timberland (as defined by Public Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X



Farm and Forest Lands (a-e)

Conclusion: The Project will not conflict with existing zoning and will not have an impact on agriculture and forest lands.

Discussion: The Project site is currently designated in the Kern County 2009 General Plan as Intensive Agriculture (Code 8.1) and Mineral and Petroleum (Code 8.4) and is currently zoned as Exclusive Agriculture (Zone A). Pursuant to Section 19.12.020(E) of the Zoning Ordinance of Kern County; steam generators (excluding coal fired), are a permitted use, by right, in Zone A.

The Project is within the existing Lost Hills Oil Field boundaries as designated by DOGGR. The exploration and production of oil have historically been allowed on the Project site. The northeast corner of the Project site is under Williamson Act contract. However, Chevron owns the entire site and will not construct or install steam generators on the area that is under the Williamson Act contract. The Project site is not designated as Prime Farmland, Unique Farmland, or of Statewide Importance. No forest lands are located on the Project site. The Project is consistent with current and surrounding land uses and will not convert farm or forest lands to non-farm or non-forest uses. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that construction and operation of the Project would have an impact on farm or forest lands.

Mitigation: None required.

References

California Department of Conservation. *Farmland Mapping & Monitoring Program*. Website: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx>.

County of Kern. *2009 General Plan*. Website: <http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf>.

County of Kern. *Code of Ordinances, Title 19 – Zoning*. Website: <http://www.co.kern.ca.us/planning/pdfs/KCZOMar09.pdf>.

County of Kern. *Kern County Online GIS Mapping*. Website: <http://www.co.kern.ca.us/gis/>.

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc. Electronic and Telephone Communication.



III. AIR QUALITY	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?		X		
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?				X

Air Quality Plans and Standards (a, b, c)

Conclusion: The Project, with the incorporation of mitigation measures, will have a less than significant impact on air quality.

Discussion: The District is tasked with implementing programs and regulations by the Federal Clean Air Act and the California Clean Air Act. In that capacity, the District has prepared plans to attain federal and state Ambient Air Quality Standards (AAQS). The District has established thresholds of significance for criteria pollutant emissions, which are based on federal offset requirements for stationary sources. The District's thresholds of significance for determining whether project emissions would have a significant adverse impact on air quality are: 10 tons per year (tpy) reactive organic gases (ROG), which includes emissions of volatile organic compounds (VOC); 10 tpy oxides of nitrogen (NOx), and 15 tpy particulate matter smaller than 10 micrometers (PM10).

Stationary sources in the District are subject to some of the toughest regulatory requirements in the nation. Emission reductions achieved through implementation of federal offset requirements are a major component of the District's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined not to conflict or obstruct implementation of the District's air quality plans.



Project Details

Chevron proposes to install and operate eleven (11) new steam generators and supporting water treatment facilities within their current operations in the Lost Hills Oil Field. The steam generators will be located at various specified locations within their existing Light Oil Western Stationary Source (Facility S-2010). The proposal includes ten (10) natural gas-fired 85.0 MMBtu/hr and one (1) 62.5 MMBtu/hr steam generators equipped with North American GLE low-NOx burner assemblies (or equivalent) capable of achieving NOx emissions of 7 ppmvd @ 3% O₂ and flue gas recirculation (FGR). The steam generators are necessary to produce steam for existing and future thermally enhanced oil recovery (TEOR) operations. Chevron intends to stage construction of the steam generators over the next several years. As the units are built out, water softening facilities will be constructed to keep pace with the increase demand for soft water that each steam generator requires. Based on existing operations, it is expected that one (1) water softening facility could accommodate three (3) steam generators. The water softening facilities will consist fundamentally of resin beds in vessels, through which the mineral laden raw water will be pumped. The water softening resin will be replenished or refreshed with salt water brine.

Collectively the water softening facilities (to include pipelines, waste water injection wells, etc.) and the steam generators constitute the "Project". The District has received an Authority to Construct (ATC) application for the new steam generators and prepared an engineering evaluation (EE), incorporated herein by reference, to evaluate the impacts from emissions associated with the operations of the steam generators. Water softening plant operations are not expected to result in the release of fugitive criteria pollutant emissions; therefore an ATC application is not required for the water softening plant.

Construction Emissions

Construction of the Project is expected to begin in 2014 with full buildout expected to occur by 2016. However, to provide conservative emissions estimates, construction emissions are based on a 10 month construction period in 2011. The steam generators and water softening facilities will be sited in areas where there will be minimal "new" disturbance of soil, native vegetation, and habitat. Construction activities include site preparation, installation of eleven (11) steam generators, installation of four (4) water treatment facilities, installation of piping and electrical systems, and construction worker commutes. Table 2 below presents the annual construction emissions for the Project.

As demonstrated in Table 2, construction related emissions do not exceed the District's thresholds of significance and, therefore, mitigation measures are not required. The District concludes that project related construction emissions will have a less than significant impact on air quality.



Table 2 – Construction Emissions ^a

	VOC (tons/year)	NOx (tons/year)	PM10 (tons/year)
Worker Commute	0.90	1.35	0.14
Fugitive Dust	0.00	0.00	4.50
Water Truck	0.04	0.37	0.00
Construction Equipment	1.50	7.30	0.90
Total Emissions	2.44	9.02	5.54
Significance Threshold	10.00	10.00	15.00
Exceeds Significance Threshold?	No	No	No
a Emissions based on construction of 11 steam generators and 4 water softening facilities in a 10-month period			

Operational Emissions

Mobile Source Emissions: The Project will be maintained and manned by existing Chevron personnel and contractors. Therefore, the Project will not result in any new mobile source emissions.

Stationary Source Emissions: The Project consists of the installation and operation of eleven (11) new steam generators. The steam generators are capable of generating NOx, CO, VOC, PM10 and SOx emissions. The District has conducted an Engineering Evaluation (EE) for the Project, incorporated herein by reference, which identifies project related operational emissions. As indicated in Table 3 below, Project related annual emissions are: 21.99 tpy VOC, 33.98 tpy NOx, and 12.80 tpy PM10.

Chevron is a major stationary source with a Title V permit and, therefore, required to offset, in the form of emission reduction credits (ERCs), project related increases in stationary source emissions. VOC, NOx and PM10 offset requirements were calculated at an offset ratio of 1.5:1 based on available ERCs. As indicated in Table 3 below Chevron will be required to surrender ERCs to offset operational emissions by an estimated 32.98 tons of VOC, 50.97 tons of NOx, and 19.19 tons of PM10.

The District concludes that through a combination of project design features and permit conditions, project related operational emissions will have a less than significant impact on air quality.



Table 3 – Project Operational Emissions (11 generators ^a)

	VOC (tons/year)	NOx (tons/year)	PM10 (tons/year)
Project Stationary Source Emissions	21.99	33.98	12.80
Significance Thresholds	10.00	10.00	15.00
Exceeds Significance Thresholds	Yes	Yes	No
Offsets Required	21.99 ^b	33.98 ^b	12.80 ^c
Offsets Surrendered (ERCs) ^d	32.98	50.97	19.19
^a Water treatment operations are not expected to generate emissions. ^b Facility emissions exceed offset thresholds prior to Project implementation, therefore, emissions must be fully offset. ^c Facility emissions do not exceed offset thresholds prior to Project implementation. However, emissions exceed AAQS so all emissions must be offset. ^d Offset requirements for this project were calculated at a ratio of 1.5 to 1.			

Air Quality Plans

As summarized in Table 2, project related construction emissions are below the District's Thresholds of Significance. As summarized in Table 3, operational stationary source emissions will be mitigated to below the District's thresholds by surrendering ERCs. The ERCs must be surrendered to the District prior to the commencement of operation of the equipment proposed under the ATC. As such, the project does not conflict with the implementation strategy of the San Joaquin Valley Regional Air Quality Management Plans (2008 PM 2.5 Plan; 2007 8-Hour Ozone Plan; 2007 PM10 Maintenance Plan; 2006 PM10 SIP; 2004 1-Hour Ozone SIP; 2003 PM10 SIP). Therefore, no further mitigation measures are required.

Air Quality Standards

Determination of whether project emissions would violate any AAQS is largely a function of air quality dispersion modeling. If project emissions would not exceed state and federal AAQS at the project's property boundaries, the project would be considered to not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

The District performed an emissions modeling analysis to determine whether project related criteria pollutant emissions have the potential to contribute to the possible violation of existing air quality standards. The analysis indicates that although project related PM10 emissions would not exceed federal AAQS, these emissions have the potential to exceed California AAQS at the property's property boundaries. The District will impose permit conditions on the project requiring the surrender of ERCs to fully offset PM10 emissions. Therefore, through a combination of project design elements,



permit conditions and surrendering ERCs, impacts resulting from potential exceedances of AAQS are considered less than significant.

Cumulative Impacts

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of state and federal AAQS is a function of successful implementation of the District's attainment plans. Consequently, the District's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. If a project's emissions is less than the thresholds of significance for criteria pollutants the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the District is in non-attainment under the applicable federal or state AAQS. As discussed above, Project emissions are below the District's thresholds of significance for criteria pollutant emissions. Therefore, project related emissions would have a less than significant impact on air quality.

Mitigation: See below.

- ❖ **AIR-1** – Chevron will surrender ERCs sufficient to offset operational VOC, NO_x, and PM₁₀ emissions as required by District NSR requirements.

Health Risk Impacts (d)

Conclusion: The Project would not expose sensitive receptors to substantial pollutant concentrations.

Discussion: Under the Clean Air Act, toxic air contaminants (TACs) are airborne pollutants that may be expected to result in an increase in mortality or serious illness or which may pose a present or potential hazard to human health. Potential health impacts from TACs include long-term health effects such as cancer, birth defects, neurological damage, or genetic damage; or short-term affects such as eye watering, respiratory irritation, throat pain and headaches. TACs may also be referred to as hazardous air pollutants (HAPs). There are currently more than 900 substances classified by the US EPA and California Air Resources Board (ARB) as TACs. Air Quality problems occur when sources of TACs and sensitive receptors are located in proximity to one another.

TACs can be separated into carcinogens and non-carcinogens based on the nature of the physiological degradation associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Cancer risk is expressed as excess cancer cases per one million exposed individuals.



Non-carcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact would occur. These levels are determined on a pollutant-by-pollutant basis. Acute and chronic exposure to non-carcinogens is expressed by using a Hazard Index, which is the ratio of expected exposure levels to acceptable health-acceptable exposure levels.

The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987, and requires stationary sources to report the type and quantities of certain substances routinely released into the air. The goals of AB 2588 are to collect emission data, to identify facilities having localized impacts, to ascertain risks to acceptable levels. AB 2588 requires air districts to establish the prioritization score threshold at which facilities are required to prepare a health risk assessment (HRA). In establishing priorities, an air district must consider potency, toxicity, quantity, and volume of hazardous materials released from the facility, the proximity of the facility to potential receptors, and any other factors that the district determines may indicate that the facility may pose a significant risk.

In implementing its responsibilities under AB 2588, the District Governing Board adopted notification procedures, including prioritization score thresholds, for notifying the public of significant carcinogenic and non-carcinogenic health risks. The District concludes that use of the existing prioritization score thresholds to establish thresholds of significance under CCR §15064.7 is an appropriate and effective means of promoting consistency in significance determinations within the environmental review process. The District’s thresholds of significance for determining whether project emissions would expose sensitive receptors to substantial pollutant concentrations are:

- Carcinogens: Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds ten (10) in one million.
- Non-Carcinogens: Ground Level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than one (1) for the MEI.

An HRA is not required for a project with a prioritization score of less than one (1).

Potentially hazardous materials are not expected to be associated with the steam generator sites. The District performed a Risk Management Review (RMR) analysis to determine possible health impacts from the Project’s permitted stationary source emissions on the nearest sensitive receptors. The RMR demonstrates that the highest prioritization score for any one generator is less than one (1) and the Project’s total score is 4.12. The Project’s acute and chronic hazard indices are both below 1.0 and the cancer exposure risk for the facility is less than ten (10) in a million. Therefore, no further analysis is required and the project is approved without Toxic Best Available Control Technology (T-BACT). The District concludes that there is no substantial evidence of record to support a conclusion that the project would expose sensitive receptors to significant health risks.



Mitigation: None required.

Odor Impacts (e)

Conclusion: The Project would not create objectionable odor affecting a substantial number of people.

Discussion: While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the District. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there is no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Rather, projects must be assessed on a case-by-case basis.

Diesel exhaust from construction activities may generate odors. However, construction emissions are temporary in nature and, due to the distance from the nearest sensitive receptor (approximately 3,000 feet) the Project is not expected to affect a substantial number of people.

The District's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) defines a significant odor impact as either more than one (1) confirmed complaint per year averaged over a three year period or two (2) unconfirmed complaints per year averaged over a three year period. A review of the District's compliance complaint database revealed that there have been no odor complaints received against Chevron's operations in the Lost Hills Oilfield. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the project would create objectionable odors affecting a substantial number of people.

Mitigation: None required.

References

California Air Resources Board. *AB 2588 Air Toxics "Hot Spots" Program*. Website: <http://www.arb.ca.gov/ab2588/ab2588.htm>

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc. Electronic and Telephone Communication.

San Joaquin Valley Unified Air Pollution Control District. November 2011. *Authority to Construct: Application Review*, Applicant No. S-2010, Project No. S-1092524. Available



at San Joaquin Valley Air Pollution Control District. 1990 East Gettysburg Avenue, Fresno, CA 93726.

San Joaquin Valley Unified Air Pollution Control District. January 2002. *Guide for Assessing and Mitigation Air Quality Impacts*. Website:
<http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf>

San Joaquin Valley Unified Air Pollution Control District. November 2011. *Risk Management Review* Applicant No. S-2010, Project No. S-1092524. Available at San Joaquin Valley Air Pollution Control District. 1990 East Gettysburg Avenue, Fresno, CA 93726.

IV. BIOLOGICAL RESOURCES				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X



IV. BIOLOGICAL RESOURCES (CONTINUED)		Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Candidate, Sensitive and Special Status Species (a)

Conclusion: The Project, with incorporation of mitigation measures, will have a less than significant impact on candidate, sensitive, or special status species.

Discussion: The Project is within the existing boundaries of the Lost Hills Oil Field. The Lost Hills Oil Field consists of 31.25 square miles, which historically has been allowed for the exploration and production of oil. The Project is located on property currently occupied by Chevron for oil production activities consistent with current and surrounding land uses.

Chevron has precautionary measures in place to avoid “take” of threatened and endangered species on Chevron property or due to activities undertaken by Chevron. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct of endangered species. “Take” includes the modification or degradation of habitat that could result in death or injury to listed species through the interference of behavioral patterns of those species. These measures include the requirement of a biological survey to determine the presence or absence of candidate, sensitive, and special status species identified prior to all ground-disturbing activities.

Chevron implements a Certified Biological Representative training program for its Health, Environment, and Safety staff and selected contractor representatives, along with consulting with qualified biological contractors (see Appendix D). Buffer distances have been recommended by Chevron’s qualified biological contractor prior to ground disturbance activities as shown in Table 4 below. In any event that further investigation is necessary, Chevron complies with all USFWS and/or CDFG recommendations for assessment, analysis, and protection of biological resources

The following listed animal species are known to be found within the Lost Hills Oil Field: Blunt-nosed leopard lizard (BNLL), non-listed covered reptile species, San Joaquin kit fox, American badger, San Joaquin antelope squirrel, Giant and Tipton kangaroo rat, Short-nosed kangaroo rat or San Joaquin pocket mouse. Chevron has species specific avoidance and minimization measures in place to minimize adverse impact to these



species. Chevron will undertake all measures, as applicable to each specific species as identified in Chevron's current approach to avoid "take" of listed animal species throughout their project boundaries.

Table 4 – Recommended Buffer Distances

San Joaquin Kit Fox Dens:	Pupping Dens (occupied)	n/a - Chevron USA Inc. shall contact California Dept. of Fish & Game (CDFG) and United States Fish & Wildlife Service (USFWS).
	Pupping Dens (unoccupied)	200 feet
	Known	100 feet
	Potential	50 feet
Blunt-Nosed Leopard Lizard:	-	300 feet (contact CDFG and USFWS for further guidance at discretion of qualified biologist)
Giant Kangaroo Rat Burrows:	-	100 feet
Tipton Kangaroo Rat Burrows:	-	100 feet
San Joaquin Antelope Squirrel Burrows:	-	50 feet
Other Sensitive Species:	-	As determined by a qualified biologist

The following listed plant species of that may be found within the Lost Hills Oil Field include the San Joaquin woolly threads and the California jewelflower. Chevron maintains standards for protecting plant species through minimization and avoidance measures. Spring rare plant surveys would be conducted by a qualified biologist for projects in low disturbance areas, within the disturbance area whenever a project schedule allows for surveys during the appropriate season. Habitat evaluations outside of the optimum season would be relied upon for determining potential impacts when seasonal surveys are not conducted. Rare plant populations would be permanently marked for avoidance whenever possible. In relation, if avoidance is not possible, a qualified biologist would recommend minimization measures with guidance from the USFWS and/or CDFG, as appropriate. To avoid "take" of these plant species, Chevron complies with all USFWS and CDFG recommendations for assessment, analysis, and protection of resources.

A Biological Survey and Habitat Impact analysis was conducted on the proposed Project site on February 19, 2010 (see Appendix D). The results of the analysis demonstrated sensitive plant species are not anticipated to be present within the Project area. Furthermore, sensitive wildlife species were not observed during the time the survey was conducted. Based on the lack of small mammal burrows within the Project



site and roadway edges, and the lack of BNLL observations in the Project area during previous CDFG protocol BNLL surveys, impacts to these species are not anticipated. After evaluation of the Project site, it is reasonable to conclude the Project should not result in direct impacts to threatened or endangered species provided standard Chevron precautionary measures are implemented and mitigation measures are incorporated.

Mitigation: See below.

- ❖ **BIO-1** – A qualified registered biologist will conduct a focused pre-construction survey to determine the presence/absence of potential impacts on sensitive species prior to the onset of ground disturbance. The survey shall be conducted in accordance with the standard protocol of the USFWS and CDFG. If more than 30 days pass before the onset of ground disturbance, an additional survey shall be conducted by a Certified Biological Representative within 30 days prior to the onset of ground disturbance.
- ❖ **BIO-2** – If sensitive species or their nests/dens are detected in the pre-construction survey, the appropriate standardized avoidance measures will be implemented to preclude take of the species. If standardized avoidance measures cannot be achieved Chevron will consult with the CDFG and USFWS to develop alternative compliance measures. If standardized avoidance measures fail and there is a take of a threatened or endangered species Chevron will notify USFWS and CDFG immediately.

Riparian Habitats, Sensitive Natural Communities and Wetlands (b, c)

Conclusion: The Project will have a less than significant impact on riparian habitats, sensitive natural communities or federally protected wetlands.

Discussion: The Project is within the existing boundaries of the Lost Hills Oilfield. The Project is located on property currently occupied by Chevron for oil production activities consistent with current and surrounding land uses. The Project site is not part of any riparian habitat or other sensitive natural community as identified by the USFWS or CDFG. There are no waters on the Project site subject to Section 404 of the Clean Water Act. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have an impact on riparian habitats, sensitive natural communities or wetlands.

Mitigation: See below.

- ❖ **BIO-3** – A qualified registered biologist will conduct a focused pre-construction survey to determine the presence/absence of potential impacts on riparian habitats, sensitive natural communities and wetlands prior to the onset of ground disturbance. The survey shall be conducted in accordance with the standard protocol of the USFWS and CDFG. If more than 30 days pass before the onset of ground



disturbance, an additional survey shall be conducted by a Certified Biological Representative within 30 days prior to the onset of ground disturbance.

Migratory Corridors (d)

Conclusion: The Project will have a less than significant impact on migratory corridors.

Discussion: The Project is within the existing boundaries of the Lost Hills Oilfield. The Project is located on property currently occupied by Chevron for oil production activities consistent with current and surrounding land uses. There is no substantial wildlife migration through the Project site due to the existence of major impediments, including the California Aqueduct to the east and Highway 46 located south of the Project site. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have an impact on the migratory corridors and the movement of threatened and endangered species.

Mitigation: See below.

- ❖ **BIO-4** – A qualified registered biologist will conduct a focused pre-construction survey to determine the presence/absence of potential impacts on migratory corridors prior to the onset of ground disturbance. The survey shall be conducted in accordance with the standard protocol of the USFWS and CDFG. If more than 30 days pass before the onset of ground disturbance, an additional survey shall be conducted by a Certified Biological Representative within 30 days prior to the onset of ground disturbance.

Policies, Ordinances and Conservation Plans (e-f)

Conclusion: The Project will not conflict with local policies or ordinances protecting biological resources or any provision of adopted federal, state, regional, or local conservation plans.

Discussion: Kern County has a Draft Habitat Conservation Plan (HCP) that is designed to protect biological resources. The Project site is located in a “Productive Oil Area” that is designated as having “White Zone” habitat quality in the HCP. These characteristics identify Chevron’s operations as occurring in a developed oilfield with limited sensitive species habitat quality. The Project is not located within the boundaries of a Multiple Species Habitat Conservation Plans (MSHCP), Natural Community Conservation Plans (NCCP) or any USFWS designated critical habitat. Through compliance with Chevron’s environmental policies and practices, no take of endangered species are expected to occur during Project implementation due to the practice of avoidance measures. The District concludes that there is no substantial evidence of record to support a conclusion that the construction and operation of the Project would conflict with local policies or ordinances, or any provision of adopted federal, state, regional, or local conservation plans protecting biological resources.



Mitigation: None required.

References

California Department of Conservation, Division of Oil, Gas and Geothermal Resources. *DOGGR Online Mapping System (DOMS)*. Website: <http://maps.conservation.ca.gov/doms/index.html>

California Department of Fish and Game. *Conservation and Mitigation Banks in California Approved by the Department of Fish and Game*. Website: <http://www.dfg.ca.gov/habcon/conplan/mitbank/catalogue/catalogue.html>

California Department of Fish and Game. *Natural Community Conservation Planning*. Website: <http://www.dfg.ca.gov/habcon/nccp/>.

County of Kern. *2009 General Plan*. Website: <http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf>

County of Kern. *First Draft Valley Floor Habitat Conservation Plan*. Website: http://www.co.kern.ca.us/planning/pdfs/vfhcp_dec06.pdf

County of Kern. *Kern County Online GIS Mapping*. Website: <http://www.co.kern.ca.us/gis/>

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc. Electronic and Telephone Communication.

United States Fish and Wildlife Service. *Conservation Plans and Agreements Database*. Website: http://ecos.fws.gov/conserv_plans/public.jsp

United States Fish and Wildlife Service. *FWS Critical Habitat for Threatened & Endangered Species – Critical Habitat Portal*. Website: <http://crithab.fws.gov/>

United States Fish and Wildlife Service. *Endangered Species Glossary*. Website: <http://www.fws.gov/midwest/Endangered/glossary/index.html>



V. CULTURAL RESOURCES				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?			X	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
d) Disturb any human remains, including those interred outside of formal cemeteries?			X	

Historical Resources (a)

Conclusion: The Project will not have an impact on historical resources.

Discussion: The Project is within the existing boundaries of the Lost Hills Oilfield. The Project is located on property currently occupied by Chevron for oil production activities consistent with current and surrounding land uses. A query of state and federal registers indicated that there are no registered historic resources within the Project site. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have an impact on historical resources.

Mitigation: None needed.

Archaeological and Paleontological Resources and Human Remains (b, c, d)

Conclusion: The Project, with the incorporation of mitigation measures, will have a less than significant impact on archaeological and paleontological resources and human remains.

Discussion: The Project is within the existing boundaries of the Lost Hills Oilfield. The Project is located on property currently occupied by Chevron for oil production activities consistent with current and surrounding land uses.

Human remains are not known to exist within the Project site. Although there is a possibility of archaeological/paleontological resources being uncovered during construction activities at sites that have been previously developed, the area being disturbed is small. Prior to developing a specific location, the location will be reviewed to determine if there are any potentially impacted archaeological/paleontological resources such as abandoned structure, grave sites, or fossil beds. Standard protocol



in compliance with existing regulations would require that, in the event that archaeological/paleontological resources, including human remains, are discovered during surface surveys, digging, scraping, or other construction activities, all work within 100 feet be ceased until the significance and extent of the find can be recovered by a qualified archaeologist/paleontologist for study. Mitigation measures have been incorporated into the Project to minimize impacts on archaeological and paleontological resources. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have a significant impact on archaeological or paleontological resources.

Mitigation: See below.

- ❖ **CUL-1** – In the event that archaeological/paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. Chevron will notify and retain a qualified archaeologist/paleontologist to assess and provide an evaluation of the significance of the find. Chevron shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the project site once the evaluation of the find is complete by the qualified archaeologist/paleontologist.
- ❖ **CUL-2** – In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. Chevron shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains.

References

California Code of Resources §15064.5

California Department of Parks and Recreation. Office of Historic Preservation. Website: http://ohp.parks.ca.gov/listed_resources/?view=county&criteria=15

California Health and Safety Code §7050.5

California Natural Resources Agency. *CERES: State Historical Landmarks for Kern County*. Website: http://ceres.ca.gov/geo_area/counties/Kern/landmarks.html



Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

National Register of Historic Places Website:
<http://www.nationalregisterofhistoricplaces.com/ca/Kern/state.html>

Native American Heritage Commission. *Professional Guide for the Preservation and Protection of Native American Remains and Associated Grave Goods*. Website:
<http://www.nahc.ca.gov/profguide.html>

Public Resources Code § 5097.94 and §5097.98

United States. National Park Service. *National Register of Historic Places Database*.
Website: <http://nrmhp.focus.nps.gov/natreghome.do?searchtype=natreghome>

VI. GEOLOGY / SOILS				
Would the Project	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	



VI. GEOLOGY / SOILS (CONTINUED)	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
Would the Project				
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

Seismic Activity and Geological Stability (a, c, d)

Conclusion: Potential risks of loss, injury or death resulting from strong seismic activity, unstable or expansive soils, and ground failure are less than significant.

Discussion: The Project is located on property currently occupied by Chevron, within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The Project site is consistent with current land use which has historically been used for oil production. The Project is located in an area with stable soils with little potential for strong seismic activity and ground failure.

No major fault systems are known to exist in Kern County. The nearest fault to the Project site is the San Andreas Fault, approximately four miles west of the Kern County Line, or approximately 12 miles west of the Project site. The Project is not located within an Alquist-Priolo Earthquake Fault Zone or within 500 feet of a known active fault trace. The Project is not located within a liquefaction hazard area, or within a landside hazard area. The Project will not be located on an unstable geological unit, unstable soil, or expansive soil. Therefore, potential for extensive surface rupture, strong ground shaking, and seismic ground failure, including liquefaction and landslides, is considered to be minimal.

The Project site is consistent with current land use and the Project is designed in accordance with all building code requirements including those pertaining to excavations, grading, and foundations. Adherence to California Buildings Standards Code (CBSC) requirements and compliance with California seismic design requirements would ensure that the Project would not expose persons or property to substantial risk of loss, injury or death resulting from seismic activity.

The District concludes that there is no substantial evidence of record to support a conclusion that the Project would result in significant risks to life and property as a result of impacts to geologic and soil resources.



Mitigation: None required.

Soil Erosion (b)

Conclusion: The Project will not result in substantial soil erosion or the loss of topsoil and impacts are less than significant.

Discussion: The construction of the steam generators would involve ground-disturbing activities, including pad preparation and installation of piping and electrical systems, which could potentially create erosion. Construction of the steam generators is consistent with the current land use and oilfield operations and will occur in areas that have been previously disturbed by similar activities. The steam generators will be built on soil with ratings of low susceptibility to erosion. Potential impacts to soil erosion will be reduced through compliance with Kern County Planning and Building Department requirements. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would result in substantial soil erosion or loss of topsoil.

Mitigation: None required.

Soil Capacity for Wastewater (e)

Conclusion: The Project will have no impact on the capacity of the soil to support wastewater disposal systems.

Discussion: The Project includes the construction and operation of 11 steam generators. The Project does not include or require the use of septic tanks or wastewater systems. Therefore, the Project will not impact the soil or its capacity to support wastewater disposal.

Mitigation: None required.

References

California Department of Conservation, California Geological Survey. *Fault Parameters-Alquist Priolo Earthquake Fault Zones*. Website:
<http://www.conservation.ca.gov/cgs/rghm/ap/Pages/Index.aspx>

California Department of Conservation, California Geological Survey. *Seismic Shaking Hazards in California*. Website:
<http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamain.html>



California Department of Conservation, California Geological Survey. *Special Publication 42 Interim Revision 2007: Fault –Rupture Hazard Zones in California*.
Website: <ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf>

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

Natural Resources Conservation Service (NRCS) *Web Soil Survey*. Website:
<http://websoilsurvey.nrcs.usda.gov/app/>

VII. GREENHOUSE GAS EMISSIONS				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Greenhouse Gases (a, b)

Conclusion: Project related greenhouse gas (GHG) emissions will have a less than significant impact on the environment and will not conflict with applicable plans, policies, or regulations to reduce GHG emissions.

Discussion: Assembly Bill (AB) 32 was adopted establishing a cap on statewide greenhouse gas emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emissions levels. In executing its legislative mandate under AB32, the ARB developed a Scoping Plan. The Scoping Plan contains the main strategies California will use to reduce GHG from Business-as-Usual (BAU) emissions projected from 2020 levels back down to 1990 levels. BAU is the projected emissions caused by growth, without any GHG reduction measures. ARB determined that a 29% reduction from BAU is necessary to achieve the 1990 GHG emissions level.

On December 17, 2009, the District adopted the policy “*District Policy – Addressing GHG Emissions Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*”. The policy was developed to assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific GHG emissions on global climate change. The approach in the policy relies on the use of Best Performance Standards (BPS) that would be applicable to projects that result in increased GHG emissions. BPS is defined as the



most effective achieved-in-practice means of reducing or limiting GHG emissions from a GHG emissions source. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29% reduction in GHG emissions from BAU is required to determine that a project would have a less than cumulatively significant impact consistent with GHG emission reduction targets established in ARB's AB32 Scoping Plan.

Construction Related GHG Emissions

Construction related greenhouse gas emissions in the form of CO₂ will result from temporary, short-term construction activities (i.e., engine exhaust emissions). BPS has not been established for construction equipment therefore, construction related GHG emissions were quantified. The project will include construction of eleven (11) new steam generators and an estimated four (4) water softening facilities that will result in 3,135.1 metric tons of CO₂.

The lifetime of excess atmospheric carbon dioxide has been estimated within the range of 19 to 49 years. Given the uncertainty in predicting the environmental half-life of atmospheric CO₂, the District determined it was appropriate to amortize the construction related GHG emissions over the life of the project. Chevron provided information that demonstrates a 20-year project life of an average steam generator and water treatment facility. As such, the District amortized construction related GHG emissions over a 20-year project life as presented below.

$$\frac{3,135.1 \text{ metric tons [Sum of Construction GHG emissions]}}{20 \text{ years [Project Life]}}$$

$$= 156.76 \text{ metric tons/year [Total Construction CO}_2\text{e]}$$

Annual Construction Greenhouse Gas Emissions
156.76 metric tons CO ₂ e/year

Project specific greenhouse gas emissions less than or equal to 230 metric tons-CO₂e/year are considered to be equivalent to zero, per District Policy (APR-2015). Therefore, it is reasonable to conclude that construction related GHG emissions for the project will have a less than cumulatively significant impact.

Operation Related GHG Emissions

Existing Chevron staff and contract workers will be reassigned to this location from other positions at Lost Hills or nearby projects that are ramping down; therefore, no increases in mobile source greenhouse gas emissions are expected.



Operational GHG emissions for this project will result from the operation of eleven (11) steam generators. The proposed steam generators will implement BPS. Therefore, per District Policy (APR-2005), the District concludes that Project related operational GHG emissions will have a less than cumulatively significant impact on global climate change.

GHG Plans, Policies, and Regulations

Kern County does not have an adopted GHG Climate Change Action Plan. As discussed above the District, acting as Lead Agency, requires either the incorporation of BPS or the demonstration of a 29% reduction in GHG emissions from BAU. BPS is proposed for this Project and complies with District policy for reducing GHG impacts. Therefore, the Project will not conflict with any known applicable plans, policies or regulations for addressing GHG impacts. The District concludes that there is no substantial evidence of record to support a conclusion that Project related GHG emissions would have a significant impact on the environment and global climate change.

Mitigation: None required.

References

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc. Electronic and Telephone Communication.

Moore, B., III, and B. H. Braswell. 1994. The lifetime of excess atmospheric carbon dioxide, *Global Biogeochem. Cycles*, 8(1), 23–38, doi: 10.1029/93GB03392.

San Joaquin Valley Unified Air Pollution Control District. December 2009. *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (APR 2005). Website:
http://www.valleyair.org/policies_per/policies/apr2005.pdf

San Joaquin Valley Unified Air Pollution Control District. November 2011. *Authority to Construct: Application Review*, Applicant No. S-2010, Project No. S-1092524. Available at San Joaquin Valley Air Pollution Control District. 1990 East Gettysburg Avenue, Fresno, CA 93726.

San Joaquin Valley Unified Air Pollution Control District. *Best Performance Standards (BPS) for Stationary Sources*. Website:
http://www.valleyair.org/Programs/CCAP/bps/BPS_idx.htm



San Joaquin Valley Unified Air Pollution Control District. March 2010. *Zero Equivalency Policy for Addressing Greenhouse Gases* (APR-2015). Website:
http://www.valleyair.org/policies_per/policies/apr2015.pdf

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

VIII. HAZARDS & HAZARDOUS MATERIALS				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?				X
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?			X	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X	



Hazardous Materials (a-d)

Conclusion: The Project will not expose the public to hazardous materials, and impacts are less than significant.

Discussion: The Project is located on property currently occupied by Chevron, within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The Project site is consistent with current land use which has historically been used for oil production. The area immediately surrounding the Project is zoned for agricultural uses, which includes general agricultural operations and oil field production. The Project is not located on a site which meets this definition of Government Code Section 65962.5, which requires specific hazardous waste facilities to submit required information to the Department of Toxic Substances Control (DTSC).

Human receptors nearest the Project are located at distances sufficient to reduce potential impacts from hazardous materials. The nearest receptor is located approximately 3,000 feet (0.57 miles) northwest of the Project site. The nearest schools, Lost Hills Elementary School and A. M. Thomas Middle School, are located in the community of Lost Hills approximately two (2) miles southeast of the Project site.

Potentially hazardous materials are not expected to be associated with the steam generator sites at this time. However, in the event that hazardous materials are needed or result from the operations of the steam generators, the materials and waste will be transported in placarded vehicles in packaging or containers as required by CFR Title 49. The District has conducted a risk screening analysis indicating that the operation of the steam generators would not pose a significant risk to the public. Therefore, the risk of exposure from the transport, use, and disposal of hazardous materials is minimal.

Development of the project consistent with DOGGR's Well Review Program will further minimize potential hazards to the public, Chevron's employees and contractors, and the environment. DOGGR's Well Review Program is available to developers to assist them in identifying potentially dangerous impacts resulting from construction operations near existing and abandoned oil and natural gas wells and the measures necessary to reduce those impacts. Chevron is familiar with this program and prior to construction will implement the elements pertinent to this project. Chevron will obtain permits as needed for abandonment, reabandonment or modifications to the wells. Mitigation measures, consistent with DOGGR's recommendations in the Well Review Program, have been incorporated into the project to ensure the development would have no impacts resulting from abandoned wells.

Compliance with existing safety standards in the construction and long-term operation of the steam generators will minimize any potential hazard to the public, Chevron's employees and contractors, and the environment. Occupational safety standards exist in Federal and State laws to minimize worker safety risks from both physical and



chemical hazards in the workplace. The California Department of Industrial Relations Division of Occupational Safety and Health (Cal/OSHA) is responsible for developing and enforcing safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle, if need be. Therefore, impacts resulting from the accidental release of hazardous materials are expected to be less than significant.

The District concludes that there is no substantial evidence of record to support a conclusion that the transportation, use, or disposal of hazardous materials would pose a hazard to the public.

Mitigation: See below.

- ❖ **HAZ-1** – Prior to the start of construction activities, Chevron shall provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the sites have been submitted to DOGGR for compliance with DOGGR’s “Well Review Program”.
- ❖ **HAZ-2** – During construction activities, if unknown, unrecorded or abandoned wells are discovered or if any wells are damaged, Chevron shall immediately notify DOGGR.
- ❖ **HAZ-3** – Any wells discovered or exposed during construction activities will be tested for flammable vapors.

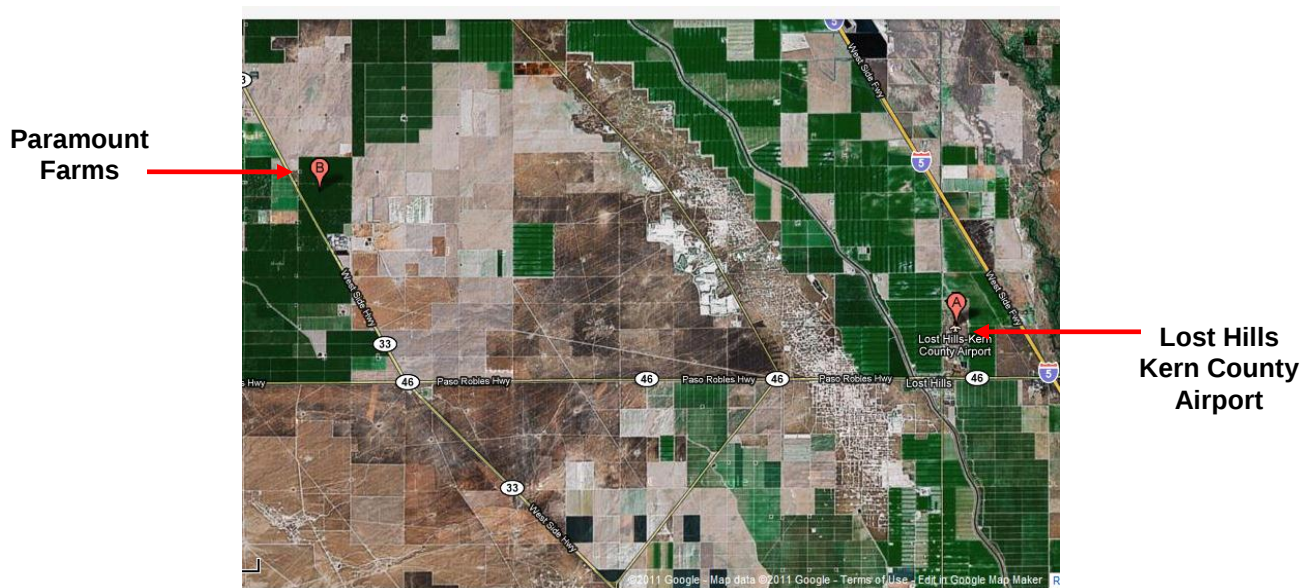
Airports and Airstrips (e, f)

Conclusion: The Project is not located near active airports or airstrips; therefore, the Project will not have an impact on the safety of people residing or working in the Project area.

Discussion: The Project is located on property currently occupied by Chevron, within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The Project site is consistent with current land use which has historically been used for oil production. The Project site is not within two (2) miles of a private airport, public airport or public use airport. The nearest private airport is owned by Paramount Farms and is located at their facility approximately 10 miles northwest of the Project site. The nearest public airport is the Lost Hill Kern County Airport (L84), located approximately two (2) miles east of the Project (see Figure 6). Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project’s location near airports or airstrips would pose a risk to people residing or working in or near the Project area.



Figure 6: Project Site and Nearest Airports



Mitigation: None required.

Emergency Response and Fire Hazards (g, h)

Conclusion: The Project will not interfere with emergency response or evacuation plans; nor will it expose people or structures to risks from wildland fires.

Discussion: The Project is located on property currently occupied by Chevron, within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The oilfield comprises a contiguous area having a size of about 31.25 square miles within Kern County. The nearest residence is located approximately 3,000 feet (0.57miles) northwest of the Project site and the nearest community, Lost Hills, is approximately two (2) miles southeast of the Project site. No wildlands are within close proximity of the Project. Although there have been occasional, insignificant brush fires within the Lost Hills oilfield, the California Department of Forestry and Fire Prevention (CAL FIRE) has determined that Kern County has no Very High Fire Hazard Severity Zones (FHSZ) in the Local Responsibility Area (LRA) and only a Moderate FHSZ in the State Responsibility Area (SRA).

The Project is consistent with current land use which has historically been used for oil production. The Project would not require any physical alterations to existing public roadways that would impair or interfere with emergency response or evacuation. Therefore, the District concludes that there is no substantial evidence of record to



support a conclusion that the Project would interfere with emergency response or expose people or structures to risks from fires.

Mitigation: None required.

References

California Department of Forestry and Fire Protection. *Fire Hazard Severity Zones Map*. Website: http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones.php

California Department of Toxic Substances Control. *DTSC's Hazardous Waste and Substances Site List - Site Cleanup (Cortese List)*. Website: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm

California Environmental Protection Agency. *Cortese List: Section 65962.5(a)*. Website: <http://www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm>

Google Maps. July, 2011.

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc. Electronic and Telephone Communication.

IX. HYDROLOGY / WATER QUALITY				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?				X
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?				X



IX. HYDROLOGY / WATER QUALITY (CONTINUED)	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
Would the Project:				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?				X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
j) Inundation by seiche, tsunami, or mudflow				X

Water Quality, Waste Discharge, and Groundwater Supplies (a, b, e, f)

Conclusion: The Project will not violate any water quality standards or waste discharge requirements and will not substantially deplete or degrade groundwater supplies or interfere with groundwater recharge; therefore, impacts are less than significant.

Discussion: The Project is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations.

Construction Activities:

The steam generators and water softening facilities will be sited in areas where there will be minimal “new” disturbance of soil, native vegetation, and habitat. Soil will be compacted and/or excavated and replaced with better-compacted soil to ensure



adequate footing for new steam generator foundations. Approximately six (6) acres of soil is expected to be disturbed in connection with the construction. All of the surface area disturbed by construction is to remain as part of the plant site after construction is complete. Temporary equipment staging areas will become part of the plant site and/or be set aside for employee and visitor vehicle parking.

Operational Activities:

The steam generators will provide steam for TEOR well operations within the Lost Hills Oil Field. The DOGGR's Well Review Program requires consistency with the Underground Injection Control (UIC) regulations of the Safe Drinking Water Act and with the Basin Water Quality Control Plan adopted by the RWQCB for the Central Valley Region. Water produced by wells will be recycled to the extent possible (i.e. reinjected into the producing formation) and the excess disposed in Class II disposal wells regulated by the DOGGR. Wastes will not be discharged to land; therefore, the Project will not result in a violation of water quality standards or waste discharge requirements.

The Project does not utilize groundwater recharge. DOGGR regulations require well construction to seal from encroachment any aquifers that may exist in or beneath the project area. Make-up water (approximately 8,000 barrels) will be pumped from the Tulare Formation for use in the steam generators. The water from the Tulare Formation is of poor quality due to high total dissolved solids (TDS) and the quantity required is not anticipated to create a significant shortfall for existing uses. Therefore, the increase in groundwater usage from the Tulare Formation is not substantial and would have a less than significant impact on groundwater supply.

Potentially hazardous materials are not expected to be associated with the steam generator sites. Precipitation at the project site is rarely sufficient to cause runoff and any runoff from the steam generator sites would either percolate near the sites or runs to natural drainage channels. The lack of water bodies on the Project site precludes the possibility of potential adverse impacts on water quality.

The District concludes that there is no substantial evidence of record to support a conclusion that the Project would violate water quality standards or waste water discharge requirements or have a negative impact on groundwater supplies.

Mitigation: None required.

Drainage Systems (c, d.)

Conclusion: The Project will not have an impact resulting from the alteration of existing drainage patterns or contribution to runoff water exceeding the capacity of storm water drainage systems.



Discussion: The Project is located on property currently occupied by Chevron, within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The Project site is consistent with current land use which has historically been used for oil production. The Project does not alter any streams, rivers, or any other waterways. As discussed above, Project construction requires minimal soil disturbance, and therefore is expected to neither have an impact on existing drainage patterns nor contribute to excessive runoff water.

The existing sites will not be altered enough to have a negative effect on surface runoff or increase flooding potential. Precipitation at the project site is rarely sufficient to cause runoff. Any runoff from the steam generator sites would either percolate near the sites or runs to natural drainage channels. The Project would not introduce a new flood hazard and would not necessitate any new flood control projects. Therefore, there will be no impacts on any public drainage systems.

Mitigation: None required.

Flooding and Inundation (g - j)

Conclusion: The Project will not expose people or structures to negative impacts resulting from floods, seiche, tsunami, or mudflow; therefore, impacts are less than significant.

Discussion: The Project is located on property currently occupied by Chevron, within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The Project site is consistent with current land use which has historically been used for oil production. The Project does not include construction of any housing units. The Project is not located within the 100-year flood zone as mapped on Flood Insurance Rate Maps (FIRM), nor is it located in an FHSZ as designated by Kern County. The Project site is in a county not identified in the Tsunami Inundation maps by the California Geological Survey as a county with inundation risk. The steam generator sites are open areas and would not impede or redirect flood flows. The existing sites will not be altered enough to have a negative effect on surface runoff or increase flooding potential. Precipitation at the project site is rarely sufficient to cause runoff. Any runoff from the steam generator sites would either percolate near the sites or runs to natural drainage channels. The Project would not introduce a new flood hazard and would not necessitate any new flood control projects. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would expose persons or structures to negative impacts resulting from flooding, tsunamis, or mudflow.

Mitigation: None required.



References

California Department of Conservation, California Geological Survey. *Tsunami Information*. Website:
http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Pages/Index.aspx

County of Kern. *Kern County Online GIS Mapping*. Website:
<http://www.co.kern.ca.us/gis/>

Federal Emergency Management Agency. Website: <http://www.msc.fema.gov/>

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc. Electronic and Telephone Communication.

X. LAND USE / PLANNING Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

Land Use and Planning (a, b)

Conclusion: The Project will not divide an established community or conflict with applicable land use plans, policies, or regulations.

Discussion: The Project is located on property currently occupied by Chevron. The nearest community to the Project site is Lost Hills, which is approximately two (2) miles southeast of the Project. Therefore, the Project will not divide an established community.

The Project site is currently designated in the Kern County 2009 General Plan as Intensive Agriculture (Code 8.1), Extensive Agriculture (Code 8.3), and Mineral and Petroleum (Code 8.4) and all are currently zoned as Exclusive Agriculture (Zone A).



Pursuant to Section 19.12.020(E) of the Zoning Ordinance of Kern County; steam generators (excluding coal fired), are a permitted use, by right, in Zone A.

The Project is within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The exploration and production of oil have historically been allowed on the Project site. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would conflict with applicable land use plans, policies, or regulation.

Mitigation: None required.

Habitat and Natural Community Conservation Plans (c)

Conclusion: The Project will not conflict with any applicable HCP, MSHCP, or NCCP.

Discussion: The Project is located on property currently occupied by Chevron, within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The Project is consistent with current land use which has historically been used for oil production.

The Project is not located within the boundaries of a MSHCP, NCCP or any USFWS designated critical habitat. The County has a Draft HCP that is designed to protect biological resources. The proposed Project site is located in a "Productive Oil Area" that is designated as having "White Zone" habitat quality in the HCP. These characteristics identify Chevron's operations as occurring in a densely developed oilfield with limited sensitive species habitat quality. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would conflict with any applicable HCPs.

Mitigation: None required.

References

California Department of Fish and Game. *Conservation and Mitigation Banks in California Approved by the Department of Fish and Game*. Website:
<http://www.dfg.ca.gov/habcon/conplan/mitbank/catalogue/catalogue.html>

County of Kern. *2009 General Plan*. Website:
<http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf>

County of Kern. *First Draft Valley Floor Habitat Conservation Plan*. Website:
http://www.co.kern.ca.us/planning/pdfs/vfhcp_dec06.pdf

United States Fish and Wildlife Service. *Conservation Plans and Agreements Database*. Website: http://ecos.fws.gov/conserv_plans/public.jsp



Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

XI. MINERAL RESOURCES				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Mineral Resources (a, b)

Conclusion: The Project will not have an impact on mineral resources.

Discussion: The Project site is currently designated in the Kern County 2009 General Plan as Intensive Agriculture (Code 8.1), Extensive Agriculture (Code 8.3), and Mineral and Petroleum (Code 8.4) and all are currently zoned as Exclusive Agriculture (Zone A). The Project is located on property currently occupied by Chevron, within the existing Lost Hills Oilfield boundaries as designated by DOGGR. The Project is consistent with current land use which has historically been used for oil production. The Project site is not located in an area known to contain a mineral resource that is of value to the region or state. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would result in the loss of a known mineral resource or the availability of a locally important mineral resource recovery site.

Mitigation: None required.

References

California Department of Conservation, California Geological Survey. *Mineral Resources*. Website:
http://www.conservation.ca.gov/cgs/geologic_resources/mineral_resource_mapping/Pages/Index.aspx

County of Kern. *Kern County Online GIS Mapping*. Website:
<http://www.co.kern.ca.us/gis/>

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.



XII. NOISE Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?			X	
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?			X	
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?				X
f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?				X

Exposure of Persons to Noise and Vibration (a-b)

Conclusion: The Project may result in the exposure of persons to increased noise or vibrations; however, the potential impacts are considered less than significant.

Discussion: The Project is within the existing boundaries of the Lost Hills Oilfield. The Project is located on property currently occupied by Chevron for oil production activities consistent with current and surrounding land uses. The Project is consistent with current land use and existing operations. The nearest residence is approximately 3,000 feet (0.57 miles) northwest of the Project site and the nearest schools, Lost Hills Elementary and A. M. Thomas Middle School, are approximately two (2) miles southeast of the Project site. Sound pressure decreases as distance between the source and the receptor increases. A sound level of 85 dB measured at 50 feet from the source would decrease to about 63 dB at a distance of 600 feet. As such, the Project will not exceed any standards set forth in the Kern County General Plan or Noise Ordinance at the nearest public receptor.



State and federal standards set by the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulate the amount of time workers may be exposed to sound levels above 90 decibels. The Project may result in noise exceeding 90 dB and a slight increase in ground vibration within 50 feet of the proposed steam generators. If the Project results in noise exceeding 85 dB, Chevron's will comply with all OSHA regulations for the protection against the effects of noise exposure (CCR §5095-5100).

The District concludes that there is no substantial evidence of record to support a conclusion that the Project would expose the public or Chevron employees to significant increases in noise or vibrations.

Mitigation: None required.

Ambient Noise Levels (c-d)

Conclusion: The Project may increase ambient noise levels in the Project vicinity; however, the Project is consistent with current land use and impacts are considered less than significant.

Discussion: The Project is located within the existing boundaries of the Lost Hills Oilfield on property currently occupied by Chevron for oil production activities. The Project is consistent with current and surrounding land uses which have historically been used for oil production.

Construction:

During construction activities, noise levels will be elevated. However, the increase in noise is temporary and will subside once construction of the Project is completed. The nearest residence is approximately 3,000 feet (0.57 miles) northwest of the Project site and the nearest schools, Lost Hills Elementary and A. M. Thomas Middle School, are approximately two (2) miles southeast of the Project site. Sound pressure decreases as distance between the source and the receptor increases. A sound level of 85 dB measured at 50 feet from the source would decrease to about 63 dB at a distance of 600 feet. Therefore, construction noise is expected to have a less than significant impact on the nearest public receptor.

Operation:

The steam generators in this project will result in a permanent increase in ambient noise levels. Ambient noise levels are not expected to increase to above 90 db except in areas immediately near the discharge headers. Future noise types and volumes will be consistent with current land use and existing operations.



Lost Hills Elementary and A. M. Thomas Middle Schools are approximately two (2) miles from the Project site. Sound pressure decreases as distance between the source and the receptor increases. A sound level of 85 dB measured at 50 feet from the source would decrease to about 63 dB at a distance of 600 feet. As such, the Project would not cause a distinguishable change in noise levels to the general public. Therefore, operational noise is expected to have a less than significant impact on the nearest public receptor.

Mitigation: None required.

Increased Noise Exposure Near Airfields (e, f)

Conclusion: The Project will not expose people residing or working in the project area to excessive noise levels.

Discussion: The Project is not located within two (2) miles of a private or public airport. The nearest private airport is owned by Paramount Farms and is located at their facility approximately 10 miles northwest of the Project site. The nearest public airport is the Lost Hill Kern County Airport (L84), located approximately two (2) miles east of the Project. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would expose people residing or working in the project area to excessive noise levels.

Mitigation: None required.

References

California Department of Industrial Relations. *General Industry Safety Orders, Group 15. Occupational Noise*. Website: <http://www.dir.ca.gov/title8/sb7g15.html>

County of Kern. *Code of Ordinances, Title 8 – Health and Safety*. Website: http://library.municode.com/HTML/16251/level2/SUHITA_TIT8HESA.html

Google Maps. February, 2011.

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc. Electronic and Telephone Communication.

Sengpiel Audio. *Damping of Sound Level with Distance*. Website: <http://www.sengpielaudio.com/calculator-distance.htm>

United States Department of Labor. *Occupational Safety and Health Administration. Regulations (Standards - 29 CFR.)* Website: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9735&p_table=STANDARDS



XIII. POPULATION / HOUSING				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Population and Housing (a, b, c)

Conclusion: The Project will not result in a substantial growth in population growth or the displacement of people or housing units.

Discussion: The Project is within the existing boundaries of the Lost Hills Oilfield. The Project is located on property currently occupied by Chevron for oil production activities consistent with current and surrounding land uses. The Project will not increase substantial population growth in the area because the Project is expected to be maintained and manned by existing Chevron personnel and contractors. The Project site is located at or very near existing steam generator sites and are developed for current operations, which does not include on-site housing. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would induce substantial population growth or displace substantial numbers of people or housing.

Mitigation: None needed.

References

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.



XIV. PUBLIC SERVICES				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?				X
ii) Police protection?				X
iii) Schools?				X
iv) Parks?				X
v) Other public facilities?				X

Fire Protection (a.i)

Conclusion: The Project will not require additional fire protection facilities and will not negatively impact the existing facility's ability to provide services.

Discussion: The Project is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations. CAL FIRE has determined that Kern County has no Very High FHSZs in the LRA and only a Moderate FHSZ in the SRA. The Project will be designed to meet the standards of the current California Fire Code and Federal safety standards. Installation and operation of the Project in accordance with these standards will minimize the potential for fire.

Chevron currently maintains Fire Prevention and Control Measures to reduce the risk of potential fires. Table 5 below presents the measures taken by Chevron to enhance fire protection within the Lost Hills Oilfield. No new or altered governmental facilities would be necessary. Therefore, the District concludes that construction and operation of the Project would have a less than significant impact on fire protection capabilities in the Project area.

Mitigation: None required.



Table 5 – Fire Prevention and Control Measures

Measure	Lost Hills - Implementation
Manuals and Guides for Fire Prevention and Response	Yes – For employees and contractors
Fire response training	Yes – employees and contractors
Fire extinguishers on vehicles	Yes
Fire extinguishers and appliances at oil and gas storage facilities	Yes
Permit before hot work to identify hazards	Yes
Weed abatement programs along pipe runs and facilities	Yes
Management training for incident response	Yes
Annual Fire Department inspections	Yes - County
Existing tankage for crude oil	Yes (Cahn 3-Chevron USA Tank Facility/Cleaning Plant)
Existing natural gas facilities	Yes (Cahn 3-Chevron USA Tank Facility/Cleaning Plant)
Front line tanks have vapor control to reduce explosive mixtures	Yes (Cahn 3-Chevron USA Tank Facility/Cleaning Plant)
Spill control berms and basins	Yes
Spill response plans and training	Yes
Fractional Increase to Current Wells	400/8,500 = 4.7%
Fire risk during drilling	Low (mitigated by blowout prevention devices, mud circulation, and mud logging)

Police Protection and Other Public Facilities (a.ii –a.v)

Conclusion: The Project will not require additional police protection, school, park, or other public facilities, nor will it negatively impact existing facilities' ability to provide services.

Discussion: The Project is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations. The Project is expected to be maintained and manned by existing Chevron personnel and contractors and, therefore, will not increase the population in the surrounding area. A lack of substantial increase in population precludes the possibility of the Project having a negative impact on police services, local schools and parks, or any other public facility. Therefore the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have a significant impact on public facilities and services.



Mitigation: None required.

References

California Department of Forestry and Fire Protection. *Fire Hazard Severity Zones Map*.
Website: http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones.php

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

XV. RECREATION Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

Recreational Facilities (a, b)

Conclusion: The Project will not have an impact on neighborhood or regional parks, or any other local recreational facilities.

Discussion: The Project consists solely of the construction and operation of steam generators and is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations. The Project is expected to be maintained and manned by existing Chevron personnel and contractors and, therefore, will not increase the population in the surrounding area. The Project does not include new recreational facilities, and a lack of substantial increase in population precludes the possibility of the Project having a negative impact on neighborhood and regional parks. The District concludes that there is no substantial evidence of record to support a conclusion that the Project would have a significant impact on or resulting from recreational facilities.

Mitigation: None required.



References

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

XVI. TRANSPORTATION / TRAFFIC				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation systems, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X



Conflict with Transportation and Transit Plans and Facilities (a, b, f)

Conclusion: The Project will not conflict with any circulation plans, congestion management programs, or alternative transportation facilities.

Discussion: The Project is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations.

There will be few if any new permanent employees. Existing Chevron staff and contract workers will be reassigned to this location from other positions at Lost Hills or nearby projects that are ramping down. It is expected that approximately 78 workers will be needed during peak construction activities. It is expected that approximately 70 heavy-duty truck trips are needed to transport construction materials. The trucks are expected to utilize one (1) of three (3) routes to access the Project site:

- from Bakersfield: Highway 58 to Lokern Road, to Highway 33; or
- Seventh Standard Road or Stockdale Highway to Interstate 5, to Highway 46 West; or
- from Taft: Highway 33 to Lost Hills Road.

Project construction related traffic is short-term and will not be sufficient to impede the flow of traffic or decrease the level of service (LOS) on these roads.

The Project consists of the construction and operation of steam generators which are used in the oil recovery process. The Project is expected to be maintained and manned by existing Chevron personnel and contractors. As the project will not yield finished product, there will be no additional off-site vehicle trips associated with the operation of the project except for the occasional maintenance supplies.

Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would conflict with transportation and transit plans or would result in negative impacts to existing circulation systems.

Mitigation: None required.

Impact (c, d, e)

Conclusion: Project related traffic will not change air traffic patterns or include hazardous design features and, therefore, will not pose a safety risk.



Discussion: The Project is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations.

The Project is not located within two (2) miles of a private or public airport. The nearest private airport is owned by Paramount Farms and is located at their facility approximately 10 miles northwest of the Project site. The nearest public airport is the Lost Hill Kern County Airport (L84), located approximately two (2) miles east of the Project. Therefore, the Project will not have an impact on safety risks resulting from a change in any air traffic patterns

The Project does not include the construction of new public roads or alterations to existing public roads or intersections. Dependent on the final locations an access road may need to be installed or upgraded. However, this road will be consistent with current operations and would remain as part of the plant site after construction is complete. Therefore, the Project will be designed in such a manner that there are no potential impacts on emergency access.

Mitigation: None required.

References

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

XVII. UTILITIES / SERVICE SYSTEMS				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X



XVII. UTILITIES / SERVICE SYSTEMS (CONTINUED)				
Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider that serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

Wastewater and Storm Water Facilities (a-c, e)

Conclusion: The Project would not exceed wastewater treatment requirements or require the construction of new wastewater or storm water facilities.

Discussion: The Project is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations.

Existing water wells use draw water from the Tulare Formation. The Project will use water from the existing water wells to generate steam. Produced water sent to the Cahn 3 Oil Cleaning Plant will be used in existing water flood operations in other locations in the Lost Hills Oil Field. The Project will result in small amounts of water softener discharge brine that will be disposed in injection wells permitted by DOGGR. In the event that additional brine disposal wells are required, they will be subject to review by DOGGR. DOGGR review and approval ensures that the injection wells will not result in significant impacts to water quality or degradation of beneficial uses. The Project will not require approvals from the California RWQCB. The Project will also not require the construction or modification of wastewater facilities and, therefore, will not impact any wastewater treatment providers.



Construction of the Project requires minimal earth moving activities. Any runoff at the Project site either percolates into the ground near the sites or runs to nearby natural drainage channels. Because construction activities require minimal earthmoving activities, the Project will have little impact on existing runoff and flooding potential. Therefore, new or expanded storm water facilities will not be required.

The District concludes that there is no substantial evidence of record to support a conclusion that the Project would have a significant impact resulting from wastewater and storm water treatment and associated facilities.

Mitigation: None required.

Water Supply (d)

Conclusion: The Project will have sufficient water supplies and new or expanded entitlements are not required.

Discussion: The Project is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations. The Project will use water pumped from the Tulare Formation to which Chevron is entitled. Chevron forecasts that Tulare pumping for this purpose will not significantly increase the existing pumping rate.

Historically, Chevron has pumped approximately 80,000 barrels of water per day from the Tulare Formation for use in water flood oil productions projects. Current usage is approximately 50,000 barrels per day in the project area for water flood use. The project is projected to increase this usage by 28% or less, which remains below historical water usage. Furthermore, the Tulare Formation is not a source of irrigation or drinking water due to high TDS. As such, drawdown is not an issue for pre-existing wells in the area, if any. Therefore, the District concludes that the project will not substantially deplete ground water supplies.

Mitigation: None required.

Solid Waste (f, g)

Conclusion: The Project will comply with all solid waste regulations and will not have an impact on the landfill that currently serves Chevron's Lost Hills operations.

Discussion: The Project is located on property currently occupied by Chevron which historically has allowed for the exploration and production of oil. The Project is located within the existing boundaries of the Lost Hills Oilfield as designated by DOGGR, and is consistent with current operations. Chevron's Lost Hills operations are currently served by the Taft Sanitary Landfill. The Project will result in only minimal amounts of solid



waste and Chevron has detailed guidelines for employees to ensure solid wastes are handled in accordance with all applicable laws. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have a significant impact resulting from the disposal of solid waste.

Mitigation: None required.

References

Landis, Larry, Health, Environment, and Safety Manager. Chevron U.S.A. Inc.
Electronic and Telephone Communication.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
Would the Project	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively Considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)?			X	
c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			X	



Impacts on the Environment and Special Status Species (a)

Conclusion: The Project, with the incorporation of mitigation measures, will have a less than significant impact on the environment and special status plant and animal species.

Discussion: With the incorporation of required permit conditions, the surrender of ERCs, and the incorporation of mitigation measures as outlined in the Initial Study, the Project will have a less than significant impact on air quality, biological resources, and cultural resources.

Mitigation: See Mitigation Measures: AIR-1 and BIO-1 through BIO-4

Cumulative Impacts (b)

Conclusion: The Project will not have cumulatively significant impacts on the environment, plant and animal species, or the human population.

Discussion: CEQA Guidelines state that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable (CCR §15065). The assessment of the significance of the cumulative effects of the project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. Due to the nature and location of the Project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The Project is not a part of any larger, planned developments. Therefore, the Project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., an increase in population that could lead to an increase need to housing, increase in traffic, air pollutants, etc.).

Mitigation: See Mitigation Measures: AIR-1; BIO-1 through BIO-4; CUL-1 through CUL-2; and HAZ-1 through HAZ-3

Impacts on Humans (c)

Conclusion: The Project will not result in environmental impacts that would cause substantial adverse effects on human beings.

Discussion: The analyses of environmental issues contained in this Initial Study indicate that the Project is not expected to have a substantial impact on human beings, either directly or indirectly. Project design elements and mitigation measures have been incorporated into the Project to reduce all potentially significant impacts to less than significant.

Mitigation: See Mitigation Measures: AIR-1 and HAZ-1 through HAZ-3



H. Acronyms and Abbreviations:

AAQS	Ambient Air Quality Standards
AB 2588	Assembly Bill 2588 – Air Toxics “Hot Spots” Information and Assessment Act
ARB	California Air Resources Board
ATC	Authority to Construct
BACT	Best Available Control Technology
dB	Decibel
BNLL	Blunt-nosed leopard lizard
BPS	Best Performance Standards
CAL FIRE	California Department of Forestry and Fire Prevention
Cal/OSHA	California Department of Industrial Relations - Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CBSC	California Building Standards Code
CCR	California Code of Regulations
CFR	Code of Federal Regulation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
Chevron	Chevron U.S.A. Inc.
CO ₂ e	Carbon Dioxide Equivalent
COC	Certificate of Conformity
District	San Joaquin Valley Unified Air Pollution Control District
DOGGR	California Division of Oil, Gas, and Geothermal Resources
DTSC	California Department of Toxic Substances Control
EE	Engineering Evaluation
ERC	Emission Reduction Credit
ERG	Environmental Review Guidelines
FGR	Flue Gas Recirculation
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
HAP	Hazardous Air Pollutant
HCP	Habitat Conservation Plan
HRA	Health Risk Assessment
LRA	Local Responsible Area
MEI	Maximally Exposed Individual
MMBtu/hr	Million British Thermal Units Per Hour
MSHCP	Multiple Species Habitat Conservation Plan
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NO _x	Oxides of Nitrogen
NSR	New Source Review
NW	Northwest



O ₂	Oxygen
OSHA	US Department of Labor - Occupational Safety and Health Administration
PM ₁₀	Particulate Matter 10 microns in diameter
ppmvd	Parts Per Million, Volumetric Dry
PRC	Public Resources Code
psia	Pounds Per Square Inch Absolute
PUC	Public Utilities Commission
RMR	Risk Management Review
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
scf	Standard Cubic Feet
SE	Southeast
SO _x	Sulfur Oxides
SRA	State Responsible Agency
T-BACT	Toxics Best Available Control Technology
TAC	Toxic Air Contaminant
TDS	Total Dissolved Solids
TEOR	Thermally Enhanced Oil Recovery
tpy	Tons Per Year
US EPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
VOC	Volatile Organic Compound