

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**ADDENDUM FOR:
FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT
FOR THE SUNSHINE GAS PRODUCERS RENEWABLE ENERGY PROJECT**

May 2016

State Clearinghouse No: 92041053

Acting Executive Officer

Wayne Nastri

Deputy Executive Officer

Planning, Rule Development and Area Sources

Philip Fine, Ph.D.

Assistant Deputy Executive Officer

Planning, Rule Development and Area Sources

Jill Whynot

Planning and Rules Manager

Planning, Rule Development and Area Sources

Ian MacMillan

Submitted to:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Prepared by:

RAMBOLL ENVIRON US CORPORATION

Reviewed by:

Jillian Wong, Ph.D. – Program Supervisor, CEQA

Jeff Inabinet - Air Quality Specialist, CEQA

Charles Tupac – Air Quality Analysis and Compliance Supervisor

Gaurang Rawal – Air Quality Engineer II

Barbara Baird – Chief Deputy Counsel

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ACRONYM LIST

BACT	Best Available Control Technology
BASIS	Battelle Automated Search Information System
CEMS	Continuous Emissions Monitoring System
CEQA	California Environmental Quality Act
CH ₄	methane
City	City of Los Angeles
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
County	Los Angeles County
CUP	Conditional Use Permit
DTE	DTE Biomass Energy
EIR	Environmental Impact Report
g/m ³	gram per cubic meter
GHG	Greenhouse Gases
H ₂ S	hydrogen sulfide
HIA/HIC	Hazard Indices for Acute and Chronic exposures
HRA	Health Risk Assessment
lbs/day	pounds per day
LFG	Landfill Gas
LFGTE	Landfill Gas to energy
MICR	Maximum Individual Cancer Risk
MMRS	Mitigation, Monitoring and Reporting Summary
MSW	municipal solid waste
MT	metric tons
MT/day	metric tons per day
MT/yr	metric tons per year
MW	megawatts
N ₂ O	nitrous oxide
NO ₂	nitrogen dioxide
NOI	Notice Of Intent
NOP	Notice of Preparation
NOX	nitrogen oxides
PM ₁₀	Particulate Matter Of Size Less Than Or Equal To 10 Micrometers
PM ₂	Particulate Matter Of Size Less Than Or Equal To 2 Micrometers
SCAQMD	South Coast Air Quality Management District
SCH	State Clearinghouse
SCLF	Sunshine Canyon Landfill
SEIR	Supplemental Environmental Impact Report
SGP	Sunshine Gas Producers
SGPREP	Sunshine Gas Producers Renewable Energy Project
SO ₂	sulfur dioxide

SO_x oxides of sulfur
TAC(s) Toxic Air Contaminant(s)
VOC(s) Volatile Organic Compound(s)

1 Introduction

Sunshine Gas Producers, LLC (SGP) is a renewable energy company that produces electricity from the combustion of landfill gas (LFG) provided by the Sunshine Canyon Landfill (SCLF). SGP is proposing a modification to its Sunshine Gas Producers Renewable Energy Project (SGPREP). Specifically, SGP is proposing a heat input rating increase on all five of its landfill gas-fired turbines (the Revised Project). Because the Revised Project entails modification of a previously approved project, additional analysis pursuant to the California Environmental Quality Act (CEQA) is warranted. As discussed in this Addendum, the environmental impacts of the previously approved SGPREP were comprehensively evaluated in a previously certified CEQA document. This Addendum evaluates environmental impacts resulting from the Revised Project to the SGPREP.

SGP is a Michigan limited liability company, jointly owned by DTE Biomass Energy (DTE) and Aria Energy (Aria) under the management of DTE. Headquartered in Ann Arbor, Michigan, DTE is a wholly owned subsidiary of DTE Energy. Aria is headquartered in Novi, Michigan, and is a wholly owned subsidiary of EIF Renewable Energy Holdings, LLC.

The SGPREP was evaluated in the April 2012 Final Subsequent Environmental Impact Report (Final SEIR) (SCH No. 92041053). SGP has contracted with Republic Services, Inc. (formerly Browning-Ferris Industries of California, Inc. [BFI]), the owner and operator of SCLF, to obtain LFG from SCLF. In spite of the fact that the SGPREP does not in any way expand landfill capacity or municipal solid waste (MSW) disposal rates, LFG produced by the SCFL will continue to increase in the future because of continued disposal of MSW. Pursuant to South Coast Air Quality Management District (SCAQMD) Rule 1150.1, *Control of Gaseous Emissions from Municipal Solid Waste Landfills*, LFG at SCLF must be collected and controlled. The previously approved SGPREP included utilization of some of the collected LFG to generate energy instead of sending the gas to SCLF flares. Five recuperated single-cycle gas turbines are fueled with LFG that is recovered from SCLF, transferred to SGP and treated (filtered, dewatered, and compressed) prior to combustion, reducing the amount of gas that is sent to flares. The five Solar Turbine Mercury 50 turbines have a gross electricity generation capacity of 24.5 megawatts (MW) and a net output of 20.0 MW. SGP recently noticed that the amount of gas utilized by these five turbines was greater than the amount set forth in its permits, which was originally provided by the turbine manufacturer. DTE submitted a short variance to the SCAQMD Hearing Board on July 1, 2015 to seek short term relief to allow SGP to exceed the total heat input of LFG burned in each turbine and in the facility overall than is currently allowed under the permit. The short term variance was granted on October 6, 2015. Without the full utilization of each turbine during the variance period, LFG is otherwise required to be flared on-site with no renewable energy being produced. Since the variance expired, DTE has been limiting the turbine throughput to comply with the existing permit conditions. To resolve this discrepancy, SGP proposes this Revised Project, which is to increase the permitted heat input rating from 48.1 MMBtu/hr to 61.0 MMBtu/hr. Because the SCLF produces an increasing amount of LFG as it continues to collect waste and its contents decompose, the Revised Project further reduces the amount of flaring that is required to control the increased amounts of LFG anticipated at the SCLF.

The SCAQMD has evaluated the changes to the April 2012 Final SEIR (summarized in Section 5.1 of this Addendum) and has determined that the Revised Project does not create

any new significant adverse environmental impacts or make substantially worse any existing significant adverse environmental impacts, and only minor additions or changes are necessary to make the April 2012 Final SEIR adequate for the Revised Project. Therefore, when considering the effects of the Revised Project, the SCAQMD has concluded that an Addendum is the appropriate document to be prepared in accordance with CEQA in order to evaluate potential environmental impacts associated with the Revised Project.

2 Basis for Decision to Prepare an Addendum

The SCAQMD was the lead agency responsible for preparing the April 2012 Final SEIR and is the public agency that has the primary responsibility for approving the Revised Project. Therefore, the SCAQMD is the appropriate lead agency to evaluate the potential environmental effects of the Revised Project that are the subject of this Addendum.

Based on the analysis of the Revised Project in Sections 6 and 7, the SCAQMD staff concludes that there are no environmental areas adversely impacted by the Revised Project. Under the Revised Project, air quality and greenhouse gas (GHG) impacts during construction would not change from those analyzed in the April 2012 Final SEIR because the Revised Project involves an increase in the permit heat input rating of each turbine and does not involve additional construction activities. The April 2012 Final SEIR identified significant adverse air quality (which included analysis of GHG) impacts during operations. Impacts to cultural resources, energy, geology and soils, hydrology and water quality and noise were analyzed and found to be less than significant after mitigation. As indicated in Section 6.0, the Revised Project does not change these conclusions: significant adverse air quality impacts and GHG impacts during the SGRERP would still occur under the Revised Project. However, as shown in Subsections 6.1 and 6.2 of this Addendum, the Revised Project will not cause new significant adverse air quality impacts or increase the severity of significant adverse air quality impacts, or result in new significant adverse air quality impacts beyond those previously identified in the April 2012 Final SEIR. As a result, pursuant to CEQA Guidelines §15164(a), this document constitutes an Addendum to the April 2012 Final SEIR for the SGPREP. Section 6 of this Addendum further explains the basis for the determination to prepare an Addendum.

CEQA Guidelines §15164(a) allows a lead agency to prepare an Addendum to a Final EIR if all of the following conditions are met.

- Substantial changes with respect to the circumstances under which the project is undertaken do not require major revisions to the previous Final EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.
- No new information becomes available which shows new significant effects or significant effects substantially more severe than previously discussed.
- If there are mitigation measures that are different from those analyzed in the previous EIR that would substantially reduce one or more significant effects on the environment, the project proponent agrees to adopt them.
- Only minor technical changes or additions are necessary to make the Final EIR under consideration adequate under CEQA.
- The changes to the Final EIR made by the Addendum do not raise important new issues about the significant effects on the environment.

The Revised Project will result in no new significant adverse effects or substantially increased severity of significant effects previously identified in the April 2012 Final SEIR. Further, the Revised Project consists of only minor changes to the April 2012 Final SEIR that do not raise important new issues about the previously analyzed significant environmental effects. Thus, the Revised Project meets all of the conditions in the CEQA Guidelines §15164(a) for the preparation of an Addendum. This conclusion is supported by substantial evidence as explained in Sections 6 and 7 of this Addendum.

3 Background CEQA Documents

The activities associated with the SGPREP were evaluated previously in a number of CEQA documents which can be obtained by contacting the SCAQMD at (909) 396-3700 to make a Public Records Request or they can be downloaded from the SCAQMD's CEQA Webpage.¹ In addition, pursuant to the CEQA Guidelines §15150, the April 2012 Final SEIR incorporated by reference all or portions of other documents that are a matter of public record. Those documents either related to the proposed project or project site, or provided additional information concerning the environmental setting in which the project was proposed. Where all or a portion of another document was incorporated by reference, the incorporated language was considered to be set forth in full as part of the text of the April 2012 Final SEIR. The following is a summary of the previous CEQA documents:

1991 Final Environmental Impact Report: The *Final Environmental Impact Report for the Sunshine Canyon Landfill Extension* (Los Angeles County 1991 and 1993; State Clearinghouse No. 89071210), was initially certified by the Los Angeles County ("the County") Board of Supervisors on February 19, 1991 ("the initial Final EIR"), and, after litigation, recertified with two Addenda and a document entitled *Additional Information and Analysis* (collectively "the 1993 Final EIR") on November 30, 1993.

1999 Final Subsequent Environmental Impact Report: The 1993 Final EIR was supplemented by the *Final Subsequent Environmental Impact Report, Sunshine Canyon Landfill* (City of Los Angeles 1999; State Clearinghouse No. 92041053) June 1998, certified by the City of Los Angeles ("the City") on December 8, 1999 ("the 1999 Final SEIR") in connection with its adoption of a Zone Change and General Plan Amendment that approved landfilling in the City portion of SCLF. The 1999 Final SEIR also incorporated revisions to the Mitigation, Monitoring and Reporting Summary (MMRS) approved in 1993 for the County portion of SCLF.

2004 Addendum to Previous EIRs: A final addendum to the 1993 Final EIR and 1999 Final SEIR for the combined County and City portions of SCLF was drafted in 2004 in order to finalize modifications to the Conditional Use Permit 00-194-(5) (CUP; Los Angeles County 2007) and update conditions associated with the permit (City of Los Angeles 2004). The analyses presented in the 2004 Addendum to the 1993 Final EIR and 1999 Final SEIR ensured that conditions for the combined County and City portions of the SCLF project were consistent with conditions approved by the City of Los Angeles. The SCLF MMRS was updated in 2006 to incorporate the most stringent requirements of the City or County side CUP.

Notice of Preparation of a Draft Subsequent Environmental Impact Report (SEIR) (SCAQMD, November 2009): A Notice of Preparation (NOP) and Initial Study for the SGPREP were released for a 30-day public review and comment period on November 19, 2009 for installation of five gas turbines to utilize the then flared LFG to generate power. The Initial Study included a project description, project location, an environmental checklist, and a preliminary discussion of potential adverse environmental impacts. The NOP requested public agencies and other interested

¹ Final Subsequent EIR for the Sunshine Gas Producers Renewable Energy Project (certified April 27, 2012). Available online with all appendices at: <http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2012>; Accessed: March 2016.

parties to comment on the scope and content of the environmental information to be evaluated in the Draft SEIR.

Draft SEIR (SCAQMD, May 2011): The Draft SEIR was released for a 45-day public review and comment period on June 23, 2011. The Draft SEIR included a comprehensive project description, a description of the existing environmental setting, a preliminary analysis of potential adverse environmental impacts for each environmental topic (including cumulative impacts) that could be adversely affected by the proposed project, and mitigation measures, project alternatives, and all other relevant topics required by CEQA. The Draft SEIR also included a copy of the NOP and Initial Study, copies of the five comment letters received on the NOP and Initial Study, and responses to all comment letters received on the NOP and Initial Study. It was concluded in the Draft SEIR that the SGPREP may have significant adverse impacts on air quality (including GHG emissions) due to construction and operational activities in spite of implementing mitigation measures and less than significant impacts on cultural resources, energy, geology, hydrology and noise.

Final SEIR (SCAQMD, April 2012): The April 2012 Final SEIR was prepared by revising the Draft SEIR to incorporate applicable updated project information and to respond to comments received on the Draft SEIR. The SCAQMD received ten comment letters on the Draft SEIR during the public comment period. Additionally, in response to the Notice of Intent (NOI) to issue the Permit to Construct for the facility, a number of comment letters were received. Five of these comment letters on the NOI contained comments on the Draft SEIR². The April 2012 Final SEIR contained responses to all fifteen comment letters received on the Draft SEIR.

Comments applicable to this proposed modification include concerns about levels of GHG emissions, CO and PM_{2.5} emissions, and additional sensitive receptors that may be adversely impacted. To address these comments, the project proponent worked with the turbine manufacturer to guarantee lower CO emissions. Also, additional sensitive receptors were considered in the April 2012 Final SEIR. These comments are further addressed in Appendix J of the April 2012 Final SEIR. The changes included in the April 2012 Final SEIR did not constitute significant new information relating to the environmental analysis or mitigation measures. The April 2012 Final SEIR was certified on April 27, 2012.

Section 6 of this Addendum addresses the potential increase in emissions associated with the Revised Project and demonstrates that the revision does not result in a new or more severe significant impact than was analyzed in the April 2012 Final SEIR.

² Please note, the comments on the NOI were received well after the close of the public comments period for the Draft EIR and the lead agency is not required to respond to these. However, responses to these late comments were made and included in the April 2012 Final SEIR.

4 Project Location

SCLF is surrounded by unincorporated areas of Los Angeles County to the north and west and the communities of Granada Hills and Sylmar to the south and east, respectively (Figure 1). The Revised Project would be located completely within the boundaries of SCLF in the northern portion of the landfill, within an unincorporated area of Los Angeles County. The Revised Project will occur within the confines of the Sunshine Gas Producers Facility. The facility is located at 14747 San Fernando Road, Sylmar, California 91342 (Figure 2), approximately 1.6 miles from residential communities located immediately south of SCLF and 1.1 miles from residential trailers to the west of the San Fernando Road entrance to SCLF.

5 Project Description

This section presents a description of the SGPREP as evaluated in the April 2012 Final SEIR, as well as a description of the Revised Project.

5.1 April 2012 Final SEIR Renewable Energy Project

The SGPREP as analyzed in the April 2012 Final SEIR involved the utilization of methane-rich LFG extracted from SCLF, which formerly had been flared, as fuel in new gas turbines to drive electricity generators. The SGPREP involved construction and operation of five Solar Turbine Mercury 50 gas turbine electricity generator sets that have a total gross electricity generation capacity of 24.5 MW, and a net output of 20 MW. The project also included LFG compressors, gas treatment equipment, an enclosed flare (SGPREP flare), one substation (SGP Substation), one switchyard (SCE Switchyard), an extension of the existing SCE subtransmission line (SCE Subtransmission Line), two buildings, a parking lot, a water supply pipeline and a telecommunications line.

5.2 LFG Turbines Permit Modification

In August 2015, when firing the turbines to achieve the rated output, SGP staff noticed the turbines were utilizing more gas than the heat input limits in its SCAQMD permits issued following certification of the April 2012 Final SEIR; SGP obtained a short variance from the SCAQMD Hearing Board on October 20, 2015 to allow it to continue to operate while revising the permit to update the heat input rating. To resolve this discrepancy, SGP proposes to increase the permitted heat input rating from 48.1 MMBtu/hr to 61.0 MMBtu/hr in the SCAQMD permits to operate for each turbine. The five landfill gas turbines will not undergo any physical modifications. The increase in the permitted heat input rating would have resulted in an increase in emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), sulfur oxides (SO_x), particulate matter less than 10 microns in diameter (PM₁₀), PM less than 2.5 microns in diameter (PM_{2.5}), toxic air contaminants (TACs) and greenhouse gases (GHGs) from the SGPREP turbines. However, in order to meet SCAQMD permitting requirements, SGP and DTE have proposed to lower the permitted concentration limit for VOC, CO, PM₁₀ and NO_x below the 2012 Best Available Control Technology (BACT) levels, which will not lead to significant increase in project emissions for NO_x, PM₁₀, and VOCs, from what was analyzed in the April 2012 Final SEIR. As a result of the increase in fuel consumption by the LFG-fired turbines, less gas will be sent to and burned in the flares. No other changes to the April 2012 Final SEIR proposed project will be made with this modification.

6 Impact Analysis

This Addendum includes an evaluation of all 18 of the environmental topics identified in the environmental checklist (SCAQMD CEQA Guidance)³ which now lists greenhouse gas impacts separate from air quality, and concluded that two environmental topics evaluated in the April 2012 Final SEIR would potentially be adversely affected by the Revised Project – air quality and GHG impacts (grouped together in the April 2012 Final SEIR). The following subsection presents the results of the evaluation of the air quality and GHG impacts associated with the Revised Project. Section 7 presents the analysis of the remaining 16 environmental topic areas where the impacts of the Revised Project were evaluated in the Addendum and found not to be potentially significant.

This section sequentially presents the initial project evaluated in the April 2012 Final SEIR and the Revised Project to show the chronology of the impact analysis, and to show the comparison of the Revised Project with the April 2012 Final SEIR Project.

6.1 Summary of Air Quality Impact

The April 2012 Final SEIR evaluated the impacts of both regional and localized air impacts of construction and operation. Because the Revised Project does not result in additional construction or alter the construction assumptions used in the April 2012 Final SEIR, the following summary only focuses on operational emission air quality impacts. Analysis of GHG impacts has been separated from the air quality impacts as GHG impacts are only cumulative in nature. GHG impacts are discussed in Section 6.2.

6.1.1 Operational Emissions

The operational emissions included in the April 2012 Final SEIR for the Project associated with the SGP facility operations are shown below in Table 6.1. The April 2012 Final SEIR concluded that the CO emissions would be less than significant. The emissions increase compared to the baseline was above the SCAQMD significance thresholds for NO_x, VOC and SO_x; however, operational NO_x, VOC, PM₁₀ and SO_x emissions were found to be less than significant with the allocation of Priority Reserve offsets per SCAQMD Rule 1303 (b)(2)(A). Operational PM_{2.5} emissions from the SGPREP were found to be significant and unavoidable.

³ The April 2012 Final SEIR referenced the environmental checklist from Appendix G of the CEQA guidelines instead of the SCAQMD CEQA Guidelines, although the SCAQMD was the lead agency.

Table 6.1. Estimated Peak Day Facility Operational Emissions from April 2012 Final SEIR

Processes / Scenario		NO _x	CO	VOC	PM ₁₀	PM _{2.5} ³	SO _x
		(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)
a	SCLF Flare Baseline (2007 – 2009) ¹	124	126	19	19	19	113
b	Total SGPREP Emissions ²	385	394	107	113	113	375
b-a=c	Subtotal SGPREP Emission Increases	261	268	88	94	94	262
d	Offsets Applied to SGPREP per Rule 1303 (b)(2)(A)	261	0	88	94	0	262
c-d	Remaining SGPREP Emissions	0	268	0	0	94	0
SCAQMD Threshold of Significance		55	550	55	150	55	150
Significant?		No	No	No	No	Yes	No

Notes:

1. Baseline emissions for Oct 2007 through Sep 2009

2. SGPREP emissions at peak capacity (Assume average 245.2 MMBTU/hr heat input, not to exceed 247 MMBTU/hr on a 24-hour average).

3. PM_{2.5} emissions are a subset of PM₁₀ emissions and for some combustion sources, PM_{2.5} can represent up to 99 percent of the PM₁₀ emissions. Thus, using the conservative estimate that PM_{2.5} emissions are equal to PM₁₀ emissions means that these emissions represent the same emissions, not two different sets of emissions.

Operational emissions from the SCE Switchyard and SCE Subtransmission Line are considered to be de minimis.

Source: Derenzo & Associates 2010. "Sunshine Gas Producers, LLC Renewable Energy Project: Comparison of Criteria Pollutant and Greenhouse Gas Emission Rates." 22 April. (Derenzo 2010)

6.1.2 Analysis of Impacts from the Revised Project

Based on the SCAQMD Environmental Checklist, as well as further examination of potential impacts, this project may be deemed to have a significant effect on the environment with respect to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard, including releasing emissions that exceed quantitative thresholds for ozone precursors;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

In addition to the aforementioned considerations, an impact would be considered significant if emissions equal or exceed the significance criteria established by the SCAQMD (Table 6.2).

Significance determinations within the April 2012 Final SEIR for operational impacts were based

on the difference between the maximum or peak daily emissions during the operational period compared to the baseline emissions, which provides a “worst-case” analysis of the operational emissions.

Table 6.2. SCAQMD Significance Thresholds		
Mass Daily Thresholds (lbs/day)		
Pollutant	Construction	Operation
NO _x	100	55
VOC	75	55
PM ₁₀	150	150
PM _{2.5}	55	55
SO _x	150	150
CO	550	550
Lead	3	3
Toxic Air Contaminant (TAC) Thresholds		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants		
NO ₂ 1-hour Average Annual Arithmetic Mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM ₁₀ 24-hour Average Annual Average	10.4 $\mu\text{g}/\text{m}^3$ (construction); 2.5 $\mu\text{g}/\text{m}^3$ (operation) 1.0 $\mu\text{g}/\text{m}^3$	
PM _{2.5} 24-hour Average	10.4 $\mu\text{g}/\text{m}^3$ (construction); 2.5 $\mu\text{g}/\text{m}^3$ (operation)	
SO ₂ 1-hour Average 24-hour Average	0.25 ppm (state); 0.075 ppm (federal – 99 th percentile) 0.04 ppm (state)	
Sulfate 24-hour Average	25 $\mu\text{g}/\text{m}^3$ (state)	
CO 1-hour Average 8-hour Average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month Average	1.5 $\mu\text{g}/\text{m}^3$ (state) 0.15 $\mu\text{g}/\text{m}^3$ (federal)	

6.1.2.1 Operational Emissions

SGP recently noticed a discrepancy between the amount of gas utilized by the five LFG-fired turbines and the limits in the SCAQMD permits issued following certification of the April 2012 Final SEIR. The Revised Project presented in this addendum would allow the facility to increase the heat input rating of the turbines from 48.1 MMBtu/hr to 61.0 MMBtu/hr. In addition, based on stack testing results of each turbines' emission performance and LFG fuel analyses, SGP proposes to reduce the limits for its criteria pollutant concentrations in order to avoid triggering Best

Available Control Technology (BACT) requirements under SCAQMD Regulation XIII – New Source Review. SGP will closely monitor the LFG hydrogen sulfide (H₂S) concentration and control the turbine fuel input to limit the SO₂ emission increase to 0.9 lb/day. Each turbines' concentration limits will be lowered to stay below the 1.0 lb/day BACT threshold for the following: the VOC concentration limit from 20 ppmv @ 3% O₂ as hexane to 10.5 ppmv @ 15% O₂ as methane (note, the 20 ppmv VOC limit as hexane was retained in the permit per applicable rule requirements; the more stringent 10.5 ppmv VOC limit as methane was added for purposes of New Source Review), the CO concentration limit from 25 ppmv @ 15% O₂ to 21.5 ppmv @ 15% O₂, and the NO_x limit from 15 ppmv @ 15% O₂ to 12.5 ppmv @ 15% O₂, and the PM₁₀ emission from 0.015 lb/MMBtu to 0.012 lb/MMBtu (based on source test results, to ensure no PM₁₀ mass emission increase). Each turbines' Continuous Emission Monitoring System (CEMS) will be used to demonstrate compliance with the applicable NO_x emission limits. Fuel usage data along with raw fuel sulfur sampling will be used to demonstrate compliance with CO and SO₂ emission limits. SGP will continue to demonstrate compliance with the VOC concentration limit through each turbines' annual source test. As a result of these changes in gas flow, emissions due to operations will be slightly altered as compared to the April 2012 Final SEIR. However, as with the April 2012 Final SEIR, DTE has requested offsets from the Priority Reserve for the increase in VOC and SO₂ daily emissions. And thus, there will not be an additional increase above baseline for those pollutants after accounting for offsets used. Moreover, even without considering offsets, these emission increases are quite small (or are negative) compared to the applicable significance thresholds, and thus, would not trigger any criteria under CEQA Guidelines §15164(a) that would preclude use of an addendum. Table 6.3 below summarizes the net change in emissions expected for each pollutant due to the Revised Project. Detailed emissions calculations are included in Appendix A.

Table 6.3. Estimated Emission Increases due to the Revised Project

Modification	Peak Day Emissions (lb/day)					
	NO _x	CO	VOC	SO ₂ ¹	PM ₁₀	PM _{2.5} ²
Emission Increase per Turbine	-1.73	0.68	0.80	0.9	0	0
Total Emission Increase for 5 Turbines	-8.65	3.40	4.00	4.5	0	0
Total Emissions Increase after Offsets	-8.65	3.40	0	0	0	0
Total Peak Daily Emissions from the April 2012 Final SEIR	0	268	0	0	0	94
Total Revised Project Peak Daily Emissions	-8.65	271	0	0	0	94
¹ Facility-wide SO ₂ emissions will thus increase by 4.5 lb/day from 375 lb/day to 379.5 lb/day. ² PM _{2.5} emissions are a subset of PM ₁₀ emissions and for some combustion sources, PM _{2.5} can represent up to 99 percent of the PM ₁₀ emissions. Thus, using the conservative estimate that PM _{2.5} emissions are equal to PM ₁₀ emissions means that these emissions represent the same emissions, not two different sets of emissions.						

A comparison of the Revised Project emissions to the project emissions analyzed in the April 2012 Final SEIR is also presented in Table 6.3. As shown in Table 6.3, the increase in turbine heat input rating along with a change in the concentration limits for each turbine would result in a decrease in NO_x peak day emissions and a small increase in the net emissions for the SGPREP as compared to the baseline analyzed in the April 2012 Final SEIR, after accounting for Priority Reserve offsets acquired for the project. Although PM_{2.5} peak day emissions were significant as analyzed in the

April 2012 Final SEIR, the Revised Project does not result in a substantial increase in the severity of the significant impact. In addition, as noted in the April 2012 Final SEIR, some fraction of the PM_{2.5} emissions are offset by the usage of PM₁₀ offsets. Additionally, the increase in peak day emissions for CO, VOC, and SO₂ with the Revised Project would not result in a new significant impact on air quality. Thus the Revised Project would not alter the findings and conclusions about the impact of the operational emissions of the project on regional air quality. The Revised Project does not require additional analysis under CEQA.

6.1.2.2 Localized Operational Impacts to Ambient Air Quality

Air dispersion modeling was conducted in the April 2012 Final SEIR to calculate ambient air concentrations of criteria pollutants NO₂, CO, and PM₁₀ from the project to demonstrate the localized air quality impacts to the nearest sensitive receptors. The April 2012 Final SEIR stated that VOC and SO_x emissions were not required to be modeled under SCAQMD Rule 1303, Appendix A, because they do not normally contribute to localized air quality impacts. Because this is a permitting requirement and not a CEQA requirement, this addendum includes a comparison of the SO₂ ambient air quality impacts that would have been included in the April 2012 Final SEIR to the Revised Project. However, because VOCs do not have an ambient air quality standard, these impacts were not evaluated in either the April 2012 Final SEIR or this addendum. In addition, because PM_{2.5} emissions are a fraction of PM₁₀ emissions and the significance thresholds are the same for PM₁₀ and PM_{2.5}, PM_{2.5} emissions were not modeled but were based on the modeling results for PM₁₀. Based on air dispersion modeling conducted to evaluate the ambient air concentrations of criteria pollutants NO₂, CO and PM₁₀, the April 2012 Final SEIR concluded that there would be no significant adverse localized air quality impacts to the nearest sensitive receptors from the operation of the project as defined in the April 2012 Final SEIR. The results and thresholds from the modeling are shown in Table 6.4.

Table 6.4. Maximum SGPREP Concentration April 2012 Final SEIR Impact Assessment

Criteria Pollutant	Averaging Time	Significance Threshold ⁴ (µg/m ³)	Maximum Concentration for Proposed Project (µg/m ³)	Significant?
NO ₂	1-hour	339	291	No
	Annual	57	38	No
CO	1-hour	23,000	2,337	No
	8-hour	10,000	1,612	No
PM ₁₀	24-hour	2.5	2.1	No
	Annual	1	0.36	No

The maximum NO_x concentration from the April 2012 Final SEIR was assumed to be emitted by each turbine. Although the proposed modification involves an increase in each turbines' heat input limit, it also includes a decrease in the NO_x concentration emission limit. In addition, the higher heat input will give higher stack velocities and therefore, further reduce the ambient air quality impacts. As shown in Table 6.5, the decrease in the NO_x emission rate for each turbine due to the proposed limited concentration will result in a lower concentration. Although the turbine NO_x

⁴ Table 6.4 is based on results reported in the April 2012 Final SEIR, however, the significance thresholds had erroneously included background values for NO₂. These have been corrected to not include the background in this addendum and note that the error does not change the significance conclusions in the April 2012 Final SEIR. Please note the 100% of NO_x was assumed in the April 2012 Final SEIR to be NO₂.

concentrations will be higher than the flare contribution, the revised ambient impacts will still be below the significance threshold. Therefore, the proposed modification would not result in a new significant impact.

Table 6.5. Revised Project Maximum Ambient Air Quality Impacts for NO₂

Source	April 2012 Final SEIR NO ₂ ¹ Emission Rate (g/s)	April 2012 Final SEIR Max. Impact (µg/m ³)	April 2012 Final SEIR Max. Impact + Background ² (µg/m ³)	Significance Threshold (µg/m ³)	Revised Emission Rate ¹ (g/s)	Revised Max Impact (µg/m ³)	Revised Max. Impact + Background ² (µg/m ³)
1-Hr Averaging Time							
Turbine 1	0.668	74.8	238	339	0.659	73.8	237
Turbine 2	0.668	76.1	239		0.659	75.1	238
Turbine 3	0.668	78.1	241		0.659	77.0	240
Turbine 4	0.668	75.0	238		0.659	74.0	237
Turbine 5	0.668	75.7	239		0.659	74.7	238
Flare	0.0202	2.22	165		0.020	2.22	165
Maximum		78.1	241	--	--	77.0	240
Annual Averaging Time							
Turbine 1	0.668	0.93	38	57	0.659	0.92	38
Turbine 2	0.668	0.92	38		0.659	0.91	38
Turbine 3	0.668	1.00	38		0.659	0.99	38
Turbine 4	0.668	0.97	38		0.659	0.96	38
Turbine 5	0.668	0.98	38		0.659	0.97	38
Flare	0.0202	0.05	37		0.011	0.03	37
Maximum		1.00	38	--	--	0.99	38

Notes

1. The April 2012 Final SEIR assumed 100% of NO_x was NO₂. For consistency, all NO_x was assumed to be NO₂ in this Addendum.
2. Background concentrations (163 µg/m³ for 1-hour and 37 µg/m³ for annual) obtained from Appendix E of the April 2012 Final SEIR. The data is based on the maximum concentrations from 2005-2007⁶ at the Santa Clarita Valley Monitoring Station.

A federal 1-hour NO₂ standard of 0.100 ppm, which corresponds to 188 µg/m³, was established in 2010. The SCAQMD is currently evaluating, and has not yet updated, its CEQA significance thresholds and CEQA Handbook to add a new significance threshold corresponding to the federal 1-hour NO₂ standard. Thus, for the purposes of this analysis, the significance threshold is assumed to be the state 1-hour NO₂ standard as currently established (0.18 ppm or 339 µg/m³) by the SCAQMD and shown in Table 6.2.

Nevertheless, an additional analysis has been performed to assess the potential adverse impacts of the Revised Project relative to the federal 1-hour NO₂ standard. In evaluating compliance with the

federal 1-hour NO₂ standard, federal guidance indicates that the 98th percentile pollutant concentration should be used⁵. The 98th percentile background data for the most recent three years is 88 µg/m³ (47 ppb). As shown in Table 6.5, the maximum modeled NO₂ value for the Revised Project is 77 µg/m³. The maximum impact plus background value would be 150 µg/m³. Therefore, this is less than the federal 1-hour NO₂ ambient air quality standard.

Similarly, the CO concentration limit for each turbine will also be lowered even though there will be a heat input rating increase. Based on just the increase in the heat input rating, the estimated project concentrations including background are shown in Table 6.6. As with ambient NO_x impacts, the CO concentration impacts will remain below the significance threshold. Therefore, the Revised Project would not result in a new significant impact.

Table 6.6. Revised Project Maximum Ambient Air Quality Impacts for CO

Source	April 2012 Final SEIR CO Emission Rate (g/s)	April 2012 Final SEIR Max. Impact (µg/m ³)	April 2012 Final SEIR Max. Impact + Background ¹ (µg/m ³)	Significance Threshold (µg/m ³)	Revised Emission Rate (g/s)	Revised Max Impact (µg/m ³)	Revised Max. Impact + Background ¹ (µg/m ³)
1-Hour Averaging Time							
Turbine 1	0.894	100.2	2,390	23,000	0.898	100.6	2,391
Turbine 2	0.894	101.9	2,392		0.898	102.3	2,392
Turbine 3	0.894	104.5	2,395		0.898	104.9	2,395
Turbine 4	0.894	100.4	2,390		0.898	100.8	2,391
Turbine 5	0.894	101.3	2,391		0.898	101.7	2,392
Flare	0.0484	5.31	2,295		0.0484	5.31	2,295
Maximum		104.5	2,395	--	--	104.9	2,395
8-Hour Averaging Time							
Turbine 1	0.894	19.6	1,510	10,000	0.898	19.7	1,510
Turbine 2	0.894	18.7	1,509		0.898	18.8	1,509
Turbine 3	0.894	27.1	1,517		0.898	27.2	1,517
Turbine 4	0.894	25.1	1,515		0.898	25.2	1,515
Turbine 5	0.894	22.8	1,513		0.898	22.9	1,513
Flare	0.0484	1.81	1,492		0.0484	1.81	1,492
Maximum		27.1	1,517	--	--	27.2	1,517

Notes

1. Background concentrations (2,290 µg/m³ for 1-hour and 1,490 µg/m³ for 8-hour) obtained from Appendix E of the April 2012 Final SEIR. The data is based on the maximum concentrations from 2005-2007⁶ at the Santa Clarita Valley Monitoring Station.

In the April 2012 Final SEIR, the maximum PM₁₀ ambient concentration was 2.1 µg/m³ as listed in Table 6.4. The maximum PM₁₀ concentration from the Revised Project is 2.1 µg/m³, which is

⁵ CAPCOA. 2011. Modeling Compliance of the Federal 1-Hour NO₂ NAAQS. Available at: http://www.valleyair.org/busind/pto/Tox_Resources/CAPCOANO2GuidanceDocument10-27-11.pdf

⁶ 2014 background levels of CO for maximum 1-hour and 8-hour concentrations at the same monitoring station are 3,435 µg/m³ (3 ppm) and 1,974 µg/m³ (1.2 ppm), respectively.

less than the significance threshold of $2.5 \mu\text{g}/\text{m}^3$ and is the same as the previous maximum concentration. The project component responsible for this maximum impact was the regeneration flare. The Revised Project analyzed in this Addendum will not result in a change in the amount of gas going to the SGP's regeneration flare and, thus, the maximum concentration from the regeneration flare is not expected to exceed the concentration listed in the April 2012 Final SEIR. The permitted PM_{10} emission rate for each turbine will also remain constant despite the heat input rating increase. Thus, the maximum PM_{10} concentration is the same as that reported in the April 2012 Final SEIR and is still expected to be lower than the maximum concentration from the regeneration flare which was below the significance threshold as shown in Table 6.7. Therefore, the Revised Project will not result in a more severe or new significant impact related to localized ambient air quality.

Table 6.7. Revised Project Maximum Ambient Air Quality Impacts for PM_{10}

Source	April 2012 Final SEIR PM_{10} Emission Rate (g/s)	April 2012 Final SEIR Max. Impact ($\mu\text{g}/\text{m}^3$)	Significance Threshold ($\mu\text{g}/\text{m}^3$)	Revised Emission Rate (g/s)	Revised Max. Impact ($\mu\text{g}/\text{m}^3$)
24-Hour Averaging Time					
Turbine 1	0.0909	0.82	2.5	0.0909	0.82
Turbine 2	0.0909	0.80		0.0909	0.80
Turbine 3	0.0909	0.96		0.0909	0.96
Turbine 4	0.0909	0.92		0.0909	0.92
Turbine 5	0.0909	0.91		0.0909	0.91
Flare	0.137	2.07		0.137	2.07
Maximum		2.07	--	--	2.07
Annual Averaging Time					
Turbine 1	0.0909	0.13	1.0	0.0909	0.13
Turbine 2	0.0909	0.12		0.0909	0.12
Turbine 3	0.0909	0.14		0.0909	0.14
Turbine 4	0.0909	0.13		0.0909	0.13
Turbine 5	0.0909	0.13		0.0909	0.13
Flare	0.137	0.36		0.137	0.36
Maximum		0.36	--	--	0.36

As stated above, the April 2012 Final SEIR did not evaluate the impacts of SO_2 on ambient air quality. However, based on the modeling files found in the April 2012 Final SEIR appendix, the maximum impact concentration that was associated with the project analyzed in the April 2012 SEIR is shown in Table 6.8 below. The maximum SO_2 concentration from the April 2012 Final SEIR project was assumed to be emitted by each turbine. As shown in Table 6.8, as with ambient NO_x and CO impacts, the SO_2 concentration impacts will remain below the significance threshold. Therefore, the Revised Project would not result in a new significant impact.

The federal SO_2 standard of 75 ppb is based on a 99th percentile data, which was not available. This analysis presented here is based on maximum concentrations and is thus, conservative. In addition, the Santa Clarita Valley monitoring station does not monitor SO_2 data. The background data used for this analysis is based on the East San Fernando Valley station.

Table 6.8 Revised Project Maximum Ambient Air Quality Impacts for SO₂

Source	April 2012 Final SEIR SO _x Emission Rate (g/s)	April 2012 Final SEIR Max. Impact (µg/m ³)	April 2012 Final SEIR Max. Impact + Background ¹ (µg/m ³)	Significance Threshold (µg/m ³)	Revised Emission Rate (g/s)	Revised Max Impact (µg/m ³)	Revised Max. Impact + Background ¹ (µg/m ³)
1-Hour Averaging Time							
Turbine 1	0.387	43.4	69	655 (196) ²	0.392	43.9	70
Turbine 2	0.387	44.1	70		0.392	44.6	71
Turbine 3	0.387	45.2	71		0.392	45.8	72
Turbine 4	0.387	43.4	70		0.392	44.0	70
Turbine 5	0.387	43.8	70		0.392	44.4	70
Flare	0.0346	3.8	30		0.035	3.80	30
Maximum		45.2	71	--	--	45.77	72
24-Hour Averaging Time							
Turbine 1	0.387	3.5	19	105	0.392	3.5	19
Turbine 2	0.387	3.4	19		0.392	3.4	19
Turbine 3	0.387	4.1	20		0.392	4.1	20
Turbine 4	0.387	3.9	20		0.392	4.0	20
Turbine 5	0.387	3.9	20		0.392	3.9	20
Flare	0.0346	0.5	16		0.035	0.52	16
Maximum		4.09	20	--	--	4.14	20

Notes

1. Santa Clarita Station does not monitor SO₂ data. Values based on maximum background concentrations measured between 2005-2007⁷ for East San Fernando Valley Station (26 µg/m³ for 1-hour and 15.6 µg/m³ for 24-hour).
2. The state 1-hour standard is 0.25 ppm (655 µg/m³) and the federal standard is 0.075 ppm (196 µg/m³).

6.1.2.3 Toxic Air Contaminants

As part of the SCAQMD permit application requirement, SGP completed a Tier III health risk assessment (HRA) using the procedures for SCAQMD Rules 1401 and 212 for toxic air contaminant (TAC) emissions associated with the SGPREP in the April 2012 Final SEIR. The maximum individual cancer risk (MICR) value and the hazard indices for acute (HIA) and chronic (HIC) exposures are summarized in Table 6.9.

Table 6.9. April 2012 Final SEIR Summary HRA Results

Receptor	MICR	HIA	HIC
Residential	0.07 in a million	0.065	0.0013
Off-Site Worker	0.08 in a million	0.065	0.073
SCAQMD Significance Threshold	10 in a million	1	1

⁷ 2014 background levels of SO₂ for maximum 1-hour average concentration at the same monitoring station is 11.9 µg/m³ (4.5 ppb).

Based on the results of the HRA, the April 2012 Final SEIR concluded the following:

1. The impacts of toxic air pollutant concentrations on sensitive receptors would be less than significant, and
2. The impact of toxic air pollutant concentrations on off-site workers would be less than significant.

Section 4.2.3.6 and 4.2.3.7 in the April 2012 Final SEIR describes in greater detail the HRA methodology and results.

The Revised Project (increase in permitted turbine heat input rating) would result in a slight increase in TAC emissions. However, based on a Tier II analysis (Appendix A) under SCAQMD Rules 1401 and 212 (amended March, 2016)⁸ in the permit modification application, the additional risk calculated as MICR, HIA and HIC will not contribute significantly to the exposure impacts summarized in Table 6.9 above. Table 6.10 summarizes the increase in the estimated MICR and HIA/HIC exposures for the Revised Project.

Table 6.10. HRA Impacts Associated with the Revised Project

Receptor	MICR	HIA	HIC
Residential Increase	0.03 in a million	0.00000042	0.0021
Residential Total	0.1 in a million	0.065	0.0034
Off-Site Worker Increase	0.02 in a million	0.00000042	0.0021
Off-Site Worker Total	0.1 in a million	0.065	0.0751

The Revised Project does not result in a new significant impact or a more severe significant impact on health risks. Thus, the Revised Project would not alter the findings and conclusions about the impact of the operational emissions of the project on sensitive receptors. The Revised Project does not require additional analysis for TACs under CEQA.

6.1.2.4 Odors

The April 2012 Final SEIR concluded that the odor impacts of the SGPREP would be less than significant. The Revised Project, which involves an increase in the permitted heat input rating, will not impact the odors related to the LFG-turbines and no new significant adverse impact would result. Thus, the Revised Project would not alter the findings and conclusions about the impact of odors as analyzed in the April 2012 Final SEIR. The Revised Project does not require additional analysis for odors under CEQA.

⁸ March 2016 Update to the Risk Assessment Procedures under Rule 1401 include the March 6, 2015 updated Office of Environment Health Hazard Assessment (OEHHA) guidelines, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA Guidance Manual, 2015)*. Available at: <http://www.aqmd.gov/home/permits/risk-assessment>. Accessed: May 2016.

6.2 Summary of Greenhouse Gas Emission Impacts

Operational GHG emissions would be generated primarily from the combustion of LFG recovered from SCLF. In addition, potable water use and solid waste generation during operation of the SGPREP as analyzed in the April 2012 Final SEIR would result in GHG emissions.

The SCAQMD's CEQA Thresholds Guide indicates that a significant impact related to greenhouse gases may occur if the Revised Project would:

- a) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s);
- b) Generate greenhouse gases, either directly or indirectly, that may have a significant impact on the environment; or
- c) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

SCAQMD's numerical significance threshold identified for GHG emissions from industrial projects is 10,000 metric tons (MT) carbon dioxide equivalent (CO_{2e}) per year. SCAQMD policy requires that construction GHG emissions are amortized over a 30-year project lifespan. The annualized construction GHG emissions result is then added to the operational emissions and the total sum is compared to the GHG significance threshold. This analysis considers both stationary and mobile (i.e., off-road equipment) sources.

Under the air quality impact analysis Sections 4.2 and 5.3, the April 2012 Final SEIR evaluated the impacts of GHG emissions by comparing the estimated annual emissions from both operational activities and construction activities amortized over 30 years to the significance thresholds, which was based on the extent to which the proposed project may increase, or reduce GHG emissions as compared to the existing environmental setting. Compared to the existing environmental setting (i.e., baseline conditions), the April 2012 Final SEIR concluded that the SGPREP would increase GHG emissions and would exceed the SCAQMD significance threshold (Table 6.11). Therefore, the SEIR concluded that the cumulative increase of GHG emissions from the SGPREP is considered to be significant and mitigation measures were imposed. The cumulative impacts of GHG emissions associated with the SGPREP following mitigation were considered to be significant and unavoidable, even after all feasible mitigation.

The April 2012 Final SEIR (Section 5.3.5.3) further clarified that the difference in GHG emissions during operation between the SGPREP and the baseline is primarily due to the greater amount of LFG that would be processed through the turbines at peak LFG usage as compared with the SCLF flares during the baseline period. Further, regardless of the LFG treatment technology used (existing flares versus SGPREP turbines), the quantity of LFG will continue to increase, which will result in an increase in GHG emissions from the gas removed from the SCLF and destroyed in either the SGPREP turbines or the flares at the SCLF. The main difference in GHG emissions between the existing flaring at SCLF and operation of the SGPREP turbines is the increase in GHG emissions from operation of the SGPREP (water conveyance and waste generation and decomposition, which are relatively minor contributors), as well as construction (which was temporary and offset to zero by implementing the construction GHG mitigation described in Subsection 5.3.6.4 of the April 2012 Final SEIR) of the SGP facility and SCE infrastructure.

The April 2012 Final SEIR goes on to state that even if potential future LFGTE projects at the landfill are developed (e.g. more electricity generating turbines are installed), GHG emissions associated with the additional combustion of LFG would be offset by the GHG emissions that would no longer be emitted from the SCLF flare combustion, as is the case for the proposed SGPREP.

Table 6.11. Comparison of Baseline and SGPREP Scenarios Total Mitigated Greenhouse Gas Emissions from the April 2012 Final SEIR

Processes/Scenario	CO ₂	CH ₄	N ₂ O	Total CO ₂ e	Tons CO ₂ e
	(MT/day)	(MT/day)	(MT/day)	(MT/day)	(MT/year)
SCLF Flare Baseline ¹	208	0.38	0.0026	217	79,269
SGPREP Turbines ²	301	0.60	0.0037	314	114,635
Solid Waste Generation ³	0	1.13 x 10 ⁻⁴	0	2.37 x 10 ⁻³	0.87
Water Use ⁴	2.0 x 10 ⁻⁴	8.3 x 10 ⁻⁹	2.2 x 10 ⁻⁹	2.02 x 10 ⁻⁴	0.074
Construction - SGP ⁵	2.3	2.0 x 10 ⁻⁴	9.8 x 10 ⁻⁵	2.3	26
Construction - SCE ⁶	3.4	2.4 x 10 ⁻⁴	1.4 x 10 ⁻⁴	3.5	13
Construction – SGP: Mitigation	-	-	-	-	-39
SGPREP Emissions					114,636
Difference					35,367
Significance Threshold					10,000
Significant?					Yes

Notes:

1. Baseline GHG emissions for Oct 2007 through Sep 2009 (SCLF flares).
2. Proposed Project Turbine GHG emissions at capacity (Assume average 245.2 MMBTU/hr heat input, not to exceed 247 MMBTU/hr on a 24-hour average).
3. Solid waste emissions calculated based on CO₂e emission factor and converted to methane emissions.
4. Water usage emissions based on GHG emissions for pumping water to the site.
5. Daily construction emissions represent the maximum daily emissions. Annual construction emissions amortized over 30 years.
6. Daily construction emissions represent the maximum daily emissions for the SCE Switchyard and Subtransmission Line. Annual construction emissions amortized over 30 years.
7. Mitigation Measure GHG-3 from the April 2012 SEIR requires that the project proponent (or its successors) shall contribute \$36,000 to the SCAQMD's Greenhouse Gas Reduction Program, which is approximately double the amount of the Rule 2702 Participation Fee of \$15 per metric ton, to ensure that all construction GHG emissions as quantified in the April 2012 Final SEIR are mitigated. DTE paid this fee in 2012.
8. Regardless of the LFG treatment technology used (existing SCLF flares or SGPREP turbines), the quantity of LFG will continue to increase, which will result in an increase in GHG emissions. The main difference in GHG emissions between the existing flaring and operation of the proposed turbines is the increase in GHG emissions from operation of the SGPREP (water conveyance and waste generation and decomposition, which are relatively minor contributors), as well as construction (which would be temporary) of the SGP facility and SCE infrastructure. The increase in GHG emissions from these sources alone is the sum of solid waste generation (0.87 MT/year), water use (0.074 MT/year), and construction (26 MT/year for SGP and 13 MT/year for SCE, which equals 39 MT/year – note, as discussed in Note 7 above, the construction GHG emissions would be mitigated pursuant to Mitigation Measure GHG-3).

6.2.1 Analysis of GHG Impacts of the Revised Project

Assuming a proportional increase in GHG emissions with the increase in the heat input rating, the Revised Project will result in an increase in GHG emissions for the turbines from 114,635 MT/yr to 142,295 MT/yr (Appendix A). However, although the SGPREP was significant for GHG in the April 2012 Final SEIR, this additional 27,660 MT/yr of GHG emissions from the SGPREP turbines is offset by the removal of GHG emissions from the SCLF flares in a similar manner as was done in the April 2012 Final SEIR. The LFG produced by the SCLF would be combusted either by the SCLF flares or the turbines. Combustion of LFG in either case results in the conversion of methane and any organic compound with it nearly wholly into CO₂. There is no change in the gas quality (i.e., BTU content) or quantity of the total gas previously analyzed. The Revised Project would not expand the permitted capacity of the SCLF or increase the amount of waste that can be accepted on a daily, monthly, or annual basis. The increase in the higher heating value is due to more LFG being pulled away from the SCLF flares for beneficial use in generating electricity and not a result of LFG that is richer than previously analyzed. This Revised Project does not result in additional GHG emissions from the total LFG combusted in the SCLF flares and SGPREP turbines landfill.

Therefore, emissions associated with this Revised Project would not result in a more significant adverse impact than the previously analyzed project. Thus, as a direct result of the Revised Project, the GHG emissions associated with the higher heat input of LFG combusted in the turbines is offset by an equal reduction of LFG combusted in the SCLF flares as it was in the April 2012 Final SEIR. It does not result in higher LFG production as discussed above. Even if there is a higher LFG production at SCLF, the April 2012 Final SEIR clarified that this is not a result of the project.

“If potential future LFGTE projects at the landfill are developed, GHG emissions associated with the additional combustion of LFG would be offset by the GHG emissions that would no longer be emitted from the flare combustion, as is generally the case for the proposed SGPREP.”

Since the April 2012 Final SEIR was certified, there has been a new ruling on whether alternative baselines can be used to analyze project emissions. *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439 (Smart Rail) allows lead agencies to be given greater discretion on the choice of baseline. The Smart Rail decision explained that the CEQA environmental baseline against which project impacts are measured is “normally” the “existing conditions” baseline. (e.g., 14Cal.Code Regs., § 15125(a).) However, the decision went on to say that a lead agency has discretion to depart from the “norm” of the “existing conditions” baseline, and to rely solely on a “future conditions” baseline (i.e., “conditions projected to exist absent the project at a date in the distant future”), if substantial evidence shows “departing from [the] norm [is] necessary to prevent misinforming or misleading the public and decision makers[.]” In this case, it is misleading to assign the additional LFG emissions that result from the SCLF, to the SGPREP project (Table 4C of Appendix A). Use of the future baseline of GHG emissions, as is permissible under Smart Rail, would result in zero increase in GHG emissions because the additional LFG used in SGPREP is removed from combustion in the SCLF flares. The GHG emissions increase would be zero as shown in Table 6.12. To the extent that energy produced by SGPREP replaces existing energy production, there could be a net decrease in GHG emissions. Additional details are provided in Table 4 of Appendix A.

Table 6.12. Revised Project GHG Impacts Based on Future Baseline

Process/Scenario	Daily Emissions (MT/day)				Annual Emissions (MT/year)
	CO ₂	CH ₄	N ₂ O	CO ₂ e	CO ₂ e
Future Baseline	172	0.31	0.0020	179	63,027
Revised Project Total Emissions	172	0.31	0.0020	179	63,027
Change in Emissions	0	0.00	0.0000	0	0
CEQA Significance Threshold					10,000
Significant?					no

Therefore, the Revised Project is not expected to cause a more severe impact or cause a new significant impact related to the GHG emissions criterion. In addition, had the April 2012 Final SEIR been analyzed for future baseline conditions, as is currently permissible under Smart Rail, there would have been no significant impact for GHG emissions in that document.

6.3 Conclusions

Based on the analysis presented, no new or substantially more severe environmental impacts to air quality or GHGs are expected from the Revised Project to increase the heat input rating of the five LFG-fired turbines component of the SGPREP than what was previously analyzed in the April 2012 Final SEIR.

7 Topic Areas Found Not to be Potentially Significant

The remaining environmental topic areas found not to be potentially significant in the April 2012 Final SEIR, and the referenced Initial Study, which will not be affected by implementing the revised heat input on the five turbines are presented in Table 7.1. The rationale for determining that the Revised Project does not affect the conclusions previously determined are also presented in Table 7.1.

Table 7.1. Environmental Topics Found Not to be Potentially Significant in the April 2012 Final SEIR for the SGPREP and Not Affected by Revised Project

Environmental Topic	Rationale
Aesthetics	The Revised Project does not involve construction or addition of lighting and thus, there will be no impact on aesthetics.
Agricultural Resources	The Revised Project will have no impact on agricultural resources.
Biological Resources	The Revised Project does not entail a change in the location, existence of vegetation, or existence of wetlands.
Cultural Resources	The Revised Project does not involve physical alteration to the project area.
Energy Resources	The Revised Project will have no adverse impact on energy resources but will instead result in continued long-term generation of renewable electricity.
Geology and Soils	The Revised Project does not involve physical alteration of the project area and thus, will not result in additional grading or other impacts to geology and soils.
Hazards and Hazardous Materials	The Revised Project does not involve a change or addition of a hazard or hazardous material.
Hydrology and Water Quality	No additional water needs are expected from the Revised Project.
Land Use and Planning	No proposed change to zoning or land use because the Revised Project does not involve construction or alteration of the project site, or a change in the land use.
Mineral Resources	No proposed change affecting mineral resources because the Revised Project does not involve construction or alteration of the project site.
Noise	The Revised Project will have no additional impact on noise because the increase in the turbine heat input will not impact the noise level of the turbines analyzed previously.
Population and Housing	The Revised Project requires no additional workers.
Public Services	The Revised Project requires no additional public services.
Recreation	No recreational facilities are involved in the Revised Project.
Solid and Hazardous Waste	The Revised Project will generate no additional hazardous waste.
Transportation	The Revised Project will have no impact on traffic because there will be no additional construction and require no additional workers.

8 CONCLUSIONS

As shown in Sections 6 and 7, the analysis of the Revised Project indicated that no new significant adverse impacts would be created for any environmental areas analyzed in the April 2012 Final SEIR or make substantially more severe any existing significant adverse impacts. Based on the environmental analysis prepared for the revised heat input rating of the five LFG-fired turbines of the SGPREP, the SCAQMD has quantitatively and qualitatively demonstrated that an Addendum to the previously certified April 2012 Final SEIR is the appropriate CEQA document to prepare for the Revised Project.

9 REFERENCES

City of Los Angeles, 1999. Final Subsequent Environmental Impact Report. Sunshine Canyon Landfill. State Clearinghouse No. 92041053.

City of Los Angeles, 2004. Addendum to Final Environmental Impact Report (State Clearinghouse No. 89071210) and Final Subsequent Environmental Impact Report (State Clearinghouse No. 92041053). Sunshine Canyon Landfill.

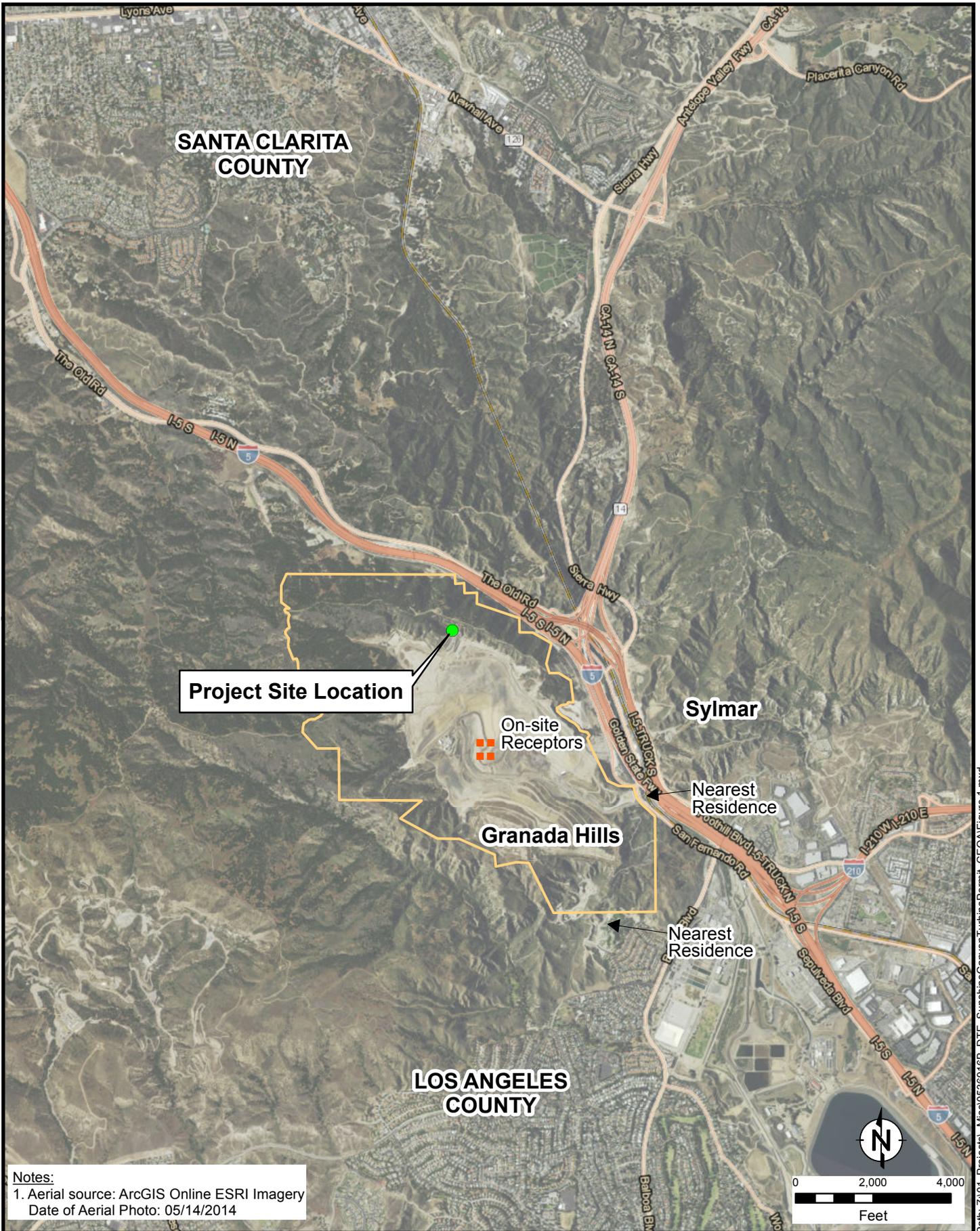
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Los Angeles County, 1993. Final Environmental Impact Report, Sunshine Canyon Landfill Extension. State Clearinghouse Number 89071210. November.

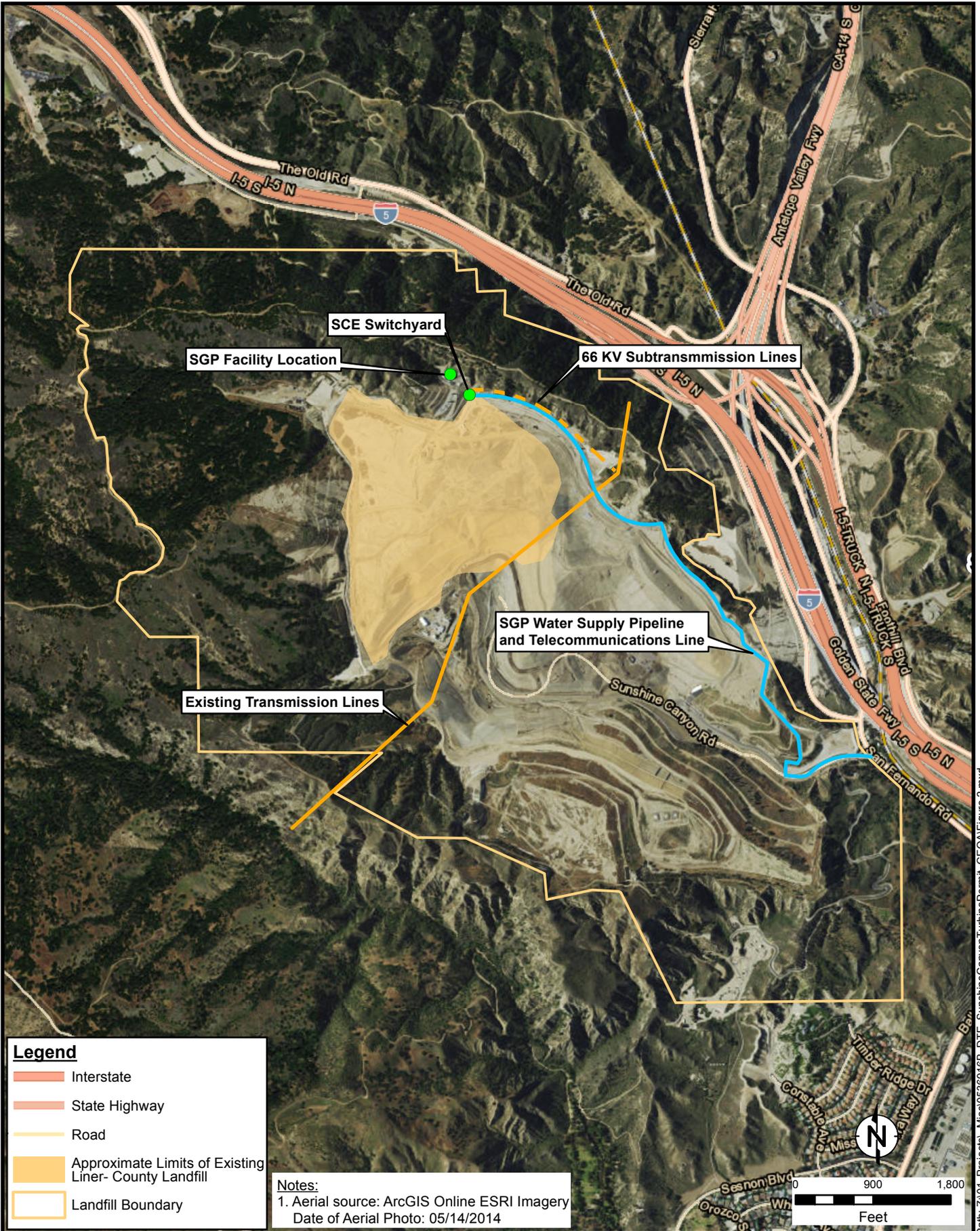
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SCAQMD, May 2011. Draft Subsequent Environmental Impact Report, Sunshine gas Producers, Renewable Energy Project.

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<http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2012>; Accessed: October 2015.



Path: Z:\01_Projects\Misc\0536916B_DTE_SunshineCanyonTurbinePermit_CEOA\Figure 1.mxd



Legend

- Interstate
- State Highway
- Road
- Approximate Limits of Existing Liner- County Landfill
- Landfill Boundary

Notes:
 1. Aerial source: ArcGIS Online ESRI Imagery
 Date of Aerial Photo: 05/14/2014

Path: Z:\01_Projects\Misc\0536916B_DTE_SunshineCanyonTurbinePermit_CEOA\Figure 2.mxd

Appendix A
Air Emission and Risk Assessment

This Appendix presents the methodology and calculations used to estimate the associated emissions increase from the Revised Project. Table 1 (1A through 1H) summarizes the equipment specific data used to calculate turbine criteria pollutant emissions and the calculated change in emissions between the current and proposed permit limits. Peak daily emissions change was calculated for all five turbines for NO_x, CO, VOC, SO₂, and PM₁₀.

Tables 2A through 2D summarize the information used to estimate the increase in toxic air contaminant (TAC) emissions from each turbine based on source test results. The maximum of the source test results for each pollutant from all five turbines was used to perform a Tier I screening analysis following SCAQMD's Rule 1401 risk assessment methodology. As seen in Table 2E, the emissions increase exceeds the risk screening threshold of 1 and hence, Tier 2 health risk assessment was required. Table 3 (3A to 3E) summarizes the associated Tier 2 risk screening calculations. All TAC emissions increases were lower than the limits in Rule 1401.

Table 4A through 4C summarize the GHG emissions analysis for the increase in turbine emissions. This analysis takes into account the *Smart Rail* conclusion discussed above in Section 6.2.1 in which the analysis can rely solely on a "future conditions" baseline.

Appendix A. Table 1 Criteria Pollutant and Greenhouse Gas Emissions

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)

1A. Operation Schedule

hours/day	days/week	weeks/year
24	7	52

1B. Pollutant Emission Factors

Scenario	PM ₁₀ Emission Factor
	lb/MMBtu ^[1]
Existing Project ^[1]	0.015
Revised Project	0.012

^[1] Provided by Sunshine DTE. Based on heat input rate HHV

1C. Proposed Concentration Limits

Pollutant	Proposed Concentration Limit (ppmvd)	MW (lbm/lbmole)
NO _x	12.5	46
CO	21.5	28
VOC	10.5	16

1D. Current Permit Limits (lbs/day)^[1]

CO	77.6
NO _x	76.5
PM ₁₀	17.3
TNMOC (CH ₄)	21.1

^[1] Limits from April 09, 2015 Title V Permit

1E. Turbine Specifications at Full Load

Exhaust Gas	379	scf/lbmol (60 F, 14.7 PSI)
	34,224	dscfm
Min. LFG heating value ^[1]	470	Btu/scf (HHV)
New Heat Input Rate	54.90	MMBtu/hr (LHV) ^[2]
	61.00	MMBtu/hr (HHV) ^[3]
Permitted Heat Input Rate	48.1	MMBtu/hr
Exhaust oxygen (min.)	15.0	%
Exhaust moisture (%)	5%	-
LFG F-Factor ^[4]	9,503	dscf/MMBtu

^[1] Higher heating value from Sunshine DTE 2015 Performance tests

^[2] Heat input from lower Heating Value (LHV) is assumed to be 90% of heat input from Higher Heating Value (HHV) provided by Sunshine DTE

^[3] Heat Input is provided by Sunshine DTE

^[4] DTE Sunshine Performance Tests, performed January 12-16, 2015. F-Factor is highest of range (9480-9503 dscf/MMBtu) for five turbines

Appendix A. Table 1 Criteria Pollutant and Greenhouse Gas Emissions

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)

1F. Existing Peak Daily Emissions

Pollutant	Single Unit	Five Units
	lbs/day	lbs/day
NO _x	76.5	382.5
CO	77.6	388
VOC	21.1	105.5
SO ₂ ^[1]	67.8	339.15
PM ₁₀	17.3	86.5

^[1]SO₂ emissions are based on the 67.83 lbs/day emission rate calculated in the DTE Regen Flare Study

1G. New Peak Daily Emissions

Pollutant	Single Unit	Five Units
	lbs/day	lbs/day
NO _x	74.8	373.8
CO	78.3	391.4
VOC	21.9	109.5
SO ₂ ^[1]	68.7	343.7
PM ₁₀	17.3	86.5

^[1]In order to avoid triggering BACT, DTE will limit the SO₂ emissions increase to 0.9 lb/day through daily or weekly testing of fuel H₂S content and regulation of heat input

1H. Increased Peak Daily Emissions

Pollutant	Single Unit	Five Units
	lbs/day	lbs/day
NO _x	-1.7	-8.65
CO	0.7	3.40
VOC	0.8	4.00
SO ₂ ^[1]	0.9	4.50
PM ₁₀	0.0	0.00

^[1] Facility-wide SO₂ emissions will thus increase by 4.5 lb/day from 375 lb/day to 379.5 lb/day.

Appendix A Table 2. Rule 1401 Health Risk Assessment - Tier 1

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)

Turbine Engines (A/Ns 571762, 571763, 571764, 571765, 571767)

2A. Performance Test Results

Toxic Air Contaminant	Turbine 1 (ppb) ^[1]	Turbine 2 (ppb) ^[1]	Turbine 3 (ppb) ^[1]	Turbine 4 (ppb) ^[1]	Turbine 5 (ppb) ^[1]	Above/ Below Detection Limit (ADL/BDL)	Maximum Concentration (ppb) ^[2]	MW (lb/mol)
Formaldehyde	10.1	16.7	18.5	4.5	6.2	ADL	18.5	30.03
Acetaldehyde	5.4	12.1	19.7	6.7	2.5		19.7	44.05
Benzene	1.7	0.9	1.6	0.8	0.7	BDL	1.7	78.1
Chlorobenzene	1.7	0.9	1.6	0.8	0.7		1.7	112.56
1,2-dichloroethane	1.7	0.9	1.6	0.8	0.7		1.7	98.96
1,1-dichloroethene/vinylidene chloride	1.7	0.9	1.6	0.8	0.7		1.7	96.94
dichloromethane/methylene chloride	3.3	1.8	3.1	1.6	1.4		3.3	84.93
tetrachloroethylene/perchloroethylene	1.7	0.9	1.6	0.8	0.7		1.7	165.83
tetrachloromethane/carbon tetrachloride	1.7	0.9	1.6	0.8	0.7		1.7	153.82
toluene	1.7	0.9	1.6	0.8	0.7		1.7	92.14
1,1,1-trichloroethane	1.7	0.9	1.6	0.8	0.7		1.7	133.4
trichloroethylene	1.7	0.9	1.6	0.8	0.7		1.7	131.4
trichloromethane/chloroform	1.7	0.9	1.6	0.8	0.7		1.7	119.38
Xylenes	--	--	--	--	--		--	106.16
Vinyl chloride	1.7	0.9	1.6	--	--		1.7	62.498

^[1]January 2015 Source Test results. Bolded cells represent concentrations above detection limits (ADL)

^[2]Pollutants tested below their detection limit (BDL) are represented as 100% of the maximum detection limit for the five turbine tests

Appendix A Table 2. Rule 1401 Health Risk Assessment - Tier 1

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)

Turbine Engines (A/Ns 571762, 571763, 571764, 571765, 571767)

2B. Existing Emissions

Toxic Air Contaminant	MHU Existing (lb/hr)	MHC Existing (lb/hr)	MAC Existing (lbs/yr)
Formaldehyde	0.0024	0.0024	20.73
Acetaldehyde	0.0037	0.0037	32.39
Benzene	0.0006	0.0006	4.96
Chlorobenzene	0.0008	0.0008	7.14
1,2-dichloroethane	0.0007	0.0007	6.28
1,1-dichloroethene/vinylidene chloride	0.0007	0.0007	6.15
dichloromethane/Methylene Chloride	0.0012	0.0012	10.46
tetrachloroethylene/Perchloroethylene	0.0012	0.0012	10.52
tetrachloromethane/Carbon tetrachloride	0.0011	0.0011	9.76
toluene	0.0007	0.0007	5.85
1,1,1-trichloroethane	0.0010	0.0010	8.46
trichloroethylene	0.0010	0.0010	8.34
trichloromethane/chloroform	0.0009	0.0009	7.57
Xylenes	0.0023	0.0023	19.81
Vinyl chloride	0.0005	0.0005	3.97

2C. New Emissions

Toxic Air Contaminant	MHU New (lb/hr)	MHC New (lb/hr)	MAC New (lbs/yr)
Formaldehyde	0.0030	0.0030	26.30
Acetaldehyde	0.0047	0.0047	41.07
Benzene	0.0007	0.0007	6.28
Chlorobenzene	0.0010	0.0010	9.06
1,2-dichloroethane	0.0009	0.0009	7.96
1,1-dichloroethene/vinylidene chloride	0.0009	0.0009	7.80
dichloromethane/Methylene Chloride	0.0015	0.0015	13.27
tetrachloroethylene/Perchloroethylene	0.0015	0.0015	13.34
tetrachloromethane/Carbon tetrachloride	0.0014	0.0014	12.38
toluene	0.0008	0.0008	7.41
1,1,1-trichloroethane	0.0012	0.0012	10.73
trichloroethylene	0.0012	0.0012	10.57
trichloromethane/chloroform	0.0011	0.0011	9.61
Xylenes	0.0029	0.0029	25.12
Vinyl chloride	0.0006	0.0006	5.03

MHU = Maximum Hourly Uncontrolled; MHC = Maximum Hourly Controlled; MAC = Maximum Annual Controlled

Appendix A Table 2. Rule 1401 Health Risk Assessment - Tier 1

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)

Turbine Engines (A/Ns 571762, 571763, 571764, 571765, 571767)

2D. Emissions Increase

Toxic Air Contaminant ^[1]	MHU Increase (lb/hr)	MHC Increase (lb/hr)	MAC Increase (lbs/yr)
Formaldehyde	0.00064	0.00064	5.56090
Acetaldehyde	0.00099	0.00099	8.68621
Benzene	0.00015	0.00015	1.32898
Chlorobenzene	0.00022	0.00022	1.91536
1,2-dichloroethane	0.00019	0.00019	1.68394
1,1-dichloroethene/vinylidene chloride	0.00019	0.00019	1.64957
dichloromethane/Methylene Chloride	0.00032	0.00032	2.80539
tetrachloroethylene/Perchloroethylene	0.00032	0.00032	2.82183
tetrachloromethane/Carbon tetrachloride	0.00030	0.00030	2.61746
toluene	0.00018	0.00018	1.56789
1,1,1-trichloroethane	0.00026	0.00026	2.26998
trichloroethylene	0.00026	0.00026	2.23595
trichloromethane/chloroform	0.00023	0.00023	2.03141
Xylenes	0.00061	0.00061	5.31311
Vinyl chloride	0.00012	0.00012	1.06349

2E. Tier I Screening Analysis

Toxic Air Contaminant ^[1]	Cancer/Chronic Emissions Screening Level (lbs/yr) ^[1]	Cancer/Chronic Pollutant Screening Index (PSI)	Acute Emissions Screening Level (lbs/hr) ^[2]	Acute Pollutant Screening Index (PSI)
Formaldehyde	16.70	3.33E-01	0.245	2.60E-03
Acetaldehyde	35.10	2.47E-01	2.09	4.76E-04
Benzene	3.51E+00	3.79E-01	1.20E-01	1.27E-03
Chlorobenzene	2.37E+05	8.08E-06	-	-
1,2-dichloroethane	4.87E+00	3.46E-01	-	-
1,1-dichloroethene/vinylidene chloride	1.66E+04	9.94E-05	-	-
dichloromethane/Methylene Chloride	1.00E+02	2.81E-02	6.24E+01	5.15E-06
tetrachloroethylene/Perchloroethylene	1.67E+01	1.69E-01	8.91E+01	3.63E-06
tetrachloromethane/Carbon tetrachloride	2.34E+00	1.12E+00	8.47E+00	3.54E-05
toluene	7.12E+04	2.20E-05	1.65E+02	1.09E-06
1,1,1-trichloroethane	2.37E+05	9.58E-06	3.03E+02	8.58E-07
trichloroethylene	5.01E+01	4.46E-02	-	-
trichloromethane/chloroform	1.85E+01	1.10E-01	6.68E-01	3.48E-04
Xylenes	1.66E+05	3.20E-05	9.80E+01	6.21E-06
Vinyl chloride	1.30E+00	8.18E-01	8.02E+02	1.52E-07
Application Screening Index (Incremental):	ASI_{cancer, 8-hr chronic}	3.59E+00	ASI_{acute}	4.74E-03
ASI Exceeds Threshold of 1?		Y		N

^[1]Screening Emission Level for Cancer/Chronic at 100 meters (Table 1.1, SCAQMD Risk Assessment Procedures, Package "M"). The closest receptor is beyond 100m and thus this is a conservative assumption.

^[2]Screening Emission Level for Acute at 100 meters (Table 1.1, SCAQMD Risk Assessment Procedures, Package "M")

Appendix A Table 3. Rule 1401 Health Risk Assessment -- Tier 2

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)

Turbine Engines (A/Ns 571762, 571763, 571764, 571765, 571767)

3A. Emissions Increase

Toxic Air Contaminant	MHU Increase (lb/hr)	MHC Increase (lb/hr)	MAC Increase (lbs/yr)
Formaldehyde	0.00064	0.00064	5.56
Acetaldehyde	0.00099	0.00099	8.69
Benzene	0.00015	0.00015	1.33
Chlorobenzene	0.00022	0.00022	1.92
1,2-dichloroethane	0.00019	0.00019	1.68
1,1-dichloroethene/vinylidene chloride	0.00019	0.00019	1.65
dichloromethane/Methylene Chloride	0.00032	0.00032	2.81
tetrachloroethylene/Perchloroethylene	0.00032	0.00032	2.82
tetrachloromethane/Carbon tetrachloride	0.00030	0.00030	2.62
toluene	0.00018	0.00018	1.57
1,1,1-trichloroethane	0.00026	0.00026	2.27
trichloroethylene	0.00026	0.00026	2.24
trichloromethane/chloroform	0.00023	0.00023	2.03
Xylenes	0.00061	0.00061	5.31
Vinyl chloride	0.00012	0.00012	1.06

3B. Inhalation Cancer Potency, Reference Exposure Levels and Multipathway Adjustment Factors

Toxic Air Contaminant	Q _{tpy}	Cancer				Chronic			8 hr Chronic	Acute REL (µg/m ³)
		CP	MP _R	MP _W	MWAF	REL (µg/m ³)	MP _R	MP _W		
Formaldehyde	0.00278	0.021	1	1	1	9	1	1	9	55
Acetaldehyde	0.00434	0.01	1	1	1	140	1	1	300	470
Benzene	0.00066	0.1	1	1	1	3	1	1	3	27
Chlorobenzene	0.00096				1	1,000	1	1		
1,2-dichloroethane	0.00084	0.072	1	1	1	400	1	1		
1,1-dichloroethene/vinylidene chloride	0.00082				1	70	1	1		
dichloromethane/Methylene Chloride	0.00140	0.0035	1	1	1	400	1	1		14,000
tetrachloroethylene/Perchloroethylene	0.00141	0.021	1	1	1	35	1	1		20,000
tetrachloromethane/Carbon tetrachloride	0.00131	0.15	1	1	1	40	1	1		1,900
toluene	0.00078				1	300	1	1		37,000
1,1,1-trichloroethane	0.00113				1	1,000	1	1		68,000
trichloroethylene	0.00112	0.007	1	1	1	600	1	1		
trichloromethane/chloroform	0.00102	0.019	1	1	1	300	1	1		150
Xylenes	0.00266				1	700	1	1		22,000
Vinyl chloride	0.00053	0.27	1	1	1					180,000

Appendix A Table 3. Rule 1401 Health Risk Assessment -- Tier 2

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)

Turbine Engines (A/Ns 571762, 571763, 571764, 571765, 571767)

3C. Cancer Risk and Hazard Quotients

Toxic Air Contaminant	MICR _R	MICR _W	HIC	HIC8	HIA
Formaldehyde	2.37E-09	1.97E-10	1.85E-05	1.85E-05	3.73E-08
Acetaldehyde	1.76E-09	1.47E-10	1.86E-06	8.69E-07	6.81E-09
Benzene	2.70E-09	2.24E-10	1.33E-05	1.33E-05	1.81E-08
Chlorobenzene	0.00E+00	0.00E+00	5.75E-08	--	--
1,2-dichloroethane	2.46E-09	2.05E-10	1.26E-07	--	--
1,1-dichloroethene/vinylidene chloride	0.00E+00	0.00E+00	7.07E-07	--	--
dichloromethane/Methylene Chloride	1.99E-10	1.66E-11	2.10E-07	--	7.39E-11
tetrachloroethylene/Perchloroethylene	1.20E-09	1.00E-10	2.42E-06	--	5.20E-11
tetrachloromethane/Carbon tetrachloride	7.97E-09	6.63E-10	1.96E-06	--	5.08E-10
toluene	0.00E+00	0.00E+00	1.57E-07	--	1.56E-11
1,1,1-trichloroethane	0.00E+00	0.00E+00	6.81E-08	--	1.23E-11
trichloroethylene	3.18E-10	2.64E-11	1.12E-07	--	--
trichloromethane/chloroform	7.83E-10	6.51E-11	2.03E-07	--	4.99E-09
Xylenes	0.00E+00	0.00E+00	2.28E-07	--	8.90E-11
Vinyl chloride	5.83E-09	4.85E-10	--	--	2.18E-12
Total Incremental Risk (1 turbine)	2.56E-08	2.13E-09	--	--	--
Exceeds Threshold?	No	No	--	--	--

Conversions and Factors

2000 lb/ton

0.06 (x/Q, (($\mu\text{g}/\text{m}^3$)/(tons/year)) Dispersion factor for Stack Height 24 to 49, 1000 meters receptor distance (Table 3.2, Attachment M)

6.44 (x/Q, (($\mu\text{g}/\text{m}^3$)/(lb/hr)) Dispersion factor for Acute Point sources with Stack Height 24 to 49, 1000 meters receptor distance (Table 6.1, Attachment M)

676.63 CEF_R - Table 9.1, Attachment M

56.26 CEF_W - Table 9.2, Attachment M

1 WAF for 24 hours/day, 7day/week operations

Appendix A Table 3. Rule 1401 Health Risk Assessment -- Tier 2

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)

Turbine Engines (A/Ns 571762, 571763, 571764, 571765, 571767)

3D Target Organs

Toxic Air Contaminant	Chronic - Organs Affected	Acute - Organs Affected
Formaldehyde	Resp	Eye
Acetaldehyde	Resp	Eye, Resp
Benzene	Hem	Dev, Hem, Imm, Resp
Chlorobenzene	Al, Dev, Kid, Rep	
1,2-dichloroethane	Al	
1,1-dichloroethene/vinylidene chloride	Al	
Dichloromethane/Methylene Chloride	Cv, Ns	Cv, Ns
Tetrachloroethylene/Perchloroethylene	Al, Kid	Eye, Ns, Resp
Tetrachloromethane/Carbon tetrachloride	Al, Dev, Ns, Rep	Al, Dev, Ns, Rep
Toluene	Dev, NS, Rep, Resp	Dev, Eye, Ns, Rep, Resp
1,1,1-trichloroethane	Ns	Ns
Trichloroethylene	Eye, Ns	
Trichloromethane/chloroform	Al, Dev, Kid, Rep	Dev, Ns, Rep, Resp
Xylenes	Eye, Ns, Rep	Eye, Ns, Resp
Vinyl chloride		Eye, Ns, Resp

3E. Total Hazard Incides by Target Organ

Organ	Total HIC	Total HIC8	Total HIA
Alimentary Systems (Al)	5.48E-06	--	5.08E-10
Cardiovascular System (Cv)	2.10E-07	--	7.39E-11
Developmental (Dev)	2.38E-06	--	2.37E-08
Eye	3.40E-07	--	4.42E-08
Hematopoietic systems (Hem)	1.33E-05	1.33E-05	1.81E-08
Immune System (Imm)	--	--	1.81E-08
Kidney (Kid)	2.68E-06	--	--
Nervous System (NS)	2.74E-06	--	5.74E-09
Reproductive system (Rep)	2.61E-06	--	2.37E-08
Respiratory systems (Resp)	2.06E-05	1.94E-05	1.20E-08
Exceeds Threshold?	No	No	No

Appendix A Table 4. Greenhouse Gas Analysis

Sunshine Gas Producers LLC (SCAQMD Facility ID # 139938)
Turbine Engines (A/Ns 571762, 571763, 571764, 571765, 571767)

4A. Global Warming Potentials and Turbine Emission Factors

Parameter	CO ₂	CH ₄	N ₂ O
GWP ¹	1	21	310
EF (kg/MMBTU) ²	51.2	0.094	6.30E-04

¹ IPCC's Second Assessment Report, 1996. Consistent with the IPCC report GWPs used in the April 2012 Final SEIR.

² CO₂ and CH₄ emission factors based on Derenzo & Associates April 2010 report. N₂O emission factor from 40 CFR Part 28, Table C-2 for biogas. Consistent with those used in the April 2012 Final SEIR.

4B. Turbine Emissions

Scenario	Heat Input Per Turbine (MMBtu/hr)	Revised Project Total Heat Input (MMBtu/hr)	Daily Emissions (MT/day)				Annual Emissions (MT/year)
			CO ₂	CH ₄	N ₂ O	CO ₂ e	CO ₂ e
Revised Project	61	305.0	374	0.69	0.0046	390	142,295
April 2012 Final SEIR	48	245.2	301	0.60	0.0037	314	114,635
Change in Emissions			73	0.09	0.0009	76	27,660

³ From the April 2012 Final SEIR, the turbine GHG emissions at capacity are based on an assumed average 245.2 MMBTU/hr heat input, not to exceed 247 MMBTU/hr on a 24-hour average.

4C. Revised Project GHG Impacts Based on April 2012 Final SEIR Baseline Assumptions

Process/Scenario	Daily Emissions (MT/day)				Annual Emissions (MT/year)
	CO ₂	CH ₄	N ₂ O	CO ₂ e	CO ₂ e
April 2012 Final SEIR Impacts	99	0.22	0.0011	103	35,367
Revised Project GHG Increase	73	0.09	0.0009	76	27,660
Total Project GHG Emissions	171.7	0.31	0.0020	179	63,027

4D. Revised Project GHG Impacts Based on Future Baseline

Process/Scenario	Daily Emissions (MT/day)				Annual Emissions (MT/year)
	CO ₂	CH ₄	N ₂ O	CO ₂ e	CO ₂ e
Future Baseline	172	0.31	0.0020	179	63,027
Revised Project Total Emissions	172	0.31	0.0020	179	63,027
Change in Emissions	0	0.00	0.0000	0	0
CEQA Significance Threshold					10,000
Significant?					no

Notes:

CH₄ = Methane

CO₂ = Carbon Dioxide

N₂O = Nitrous Oxide

CO₂e = Carbon Dioxide Equivalent

GWP = Global Warming Potential

EF = Emission Factor

MT = Metric Ton