

AIR QUALITY ASSESSMENT

**Greenhills Ranch Development
County of San Diego, CA**

Lead Agency:

**County of San Diego
Planning & Development Services
5510 Overland Avenue, Suite 110
San Diego, CA 92123**

Prepared By:

**Jeremy Loudon
Ldn Consulting, Inc.
42428 Chisolm Trail
Murrieta, CA 92562**

Prepared For:

**Atlas Investments, LLC
11661 San Vicente Blvd., Ste 701
Los Angeles, CA 90049**

November 17, 2020

TABLE OF CONTENTS

TABLE OF CONTENTS.....	II
LIST OF FIGURES.....	III
LIST OF TABLES	III
APPENDIX	III
LIST OF COMMON ACRONYMS.....	IV
EXECUTIVE SUMMARY	V
1.0 INTRODUCTION	1
1.1 PURPOSE OF THIS STUDY	1
1.2 PROJECT LOCATION	1
1.3 PROJECT DESCRIPTION	1
1.4 PROJECT DESIGN FEATURES	4
2.0 EXISTING ENVIRONMENTAL SETTING.....	6
2.1 EXISTING SETTING	6
2.2 CLIMATE AND METEOROLOGY	6
2.3 REGULATORY STANDARDS.....	6
2.3.1 FEDERAL STANDARDS AND DEFINITIONS	7
2.3.2 STATE STANDARDS AND DEFINITIONS.....	8
2.3.3 REGIONAL STANDARDS.....	10
2.4 CALIFORNIA ENVIRONMENTAL QUALITY ACT SIGNIFICANCE THRESHOLDS	11
2.5 SDAPCD RULE 20.2 – AIR QUALITY IMPACT ASSESSMENT SCREENING THRESHOLDS	12
2.6 LOCAL AIR QUALITY.....	13
3.0 METHODOLOGY.....	15
3.1 CONSTRUCTION EMISSIONS CALCULATIONS.....	15
3.2 CONSTRUCTION ASSUMPTIONS	17
3.3 OPERATIONAL EMISSIONS.....	18
3.4 MICRO SCALE OPERATIONAL EMISSIONS	19
3.5 ODOR IMPACTS (ONSITE)	19
4.0 FINDINGS.....	20
4.1 CONSTRUCTION FINDINGS	20
4.2 HEALTH RISK.....	21
4.3 OPERATIONAL FINDINGS.....	22
4.4 ODOR IMPACTS (ONSITE)	23
4.5 CUMULATIVE OPERATIONAL IMPACTS	24
4.6 CONCLUSION OF FINDINGS.....	24
5.0 REFERENCES	26
6.0 CERTIFICATIONS	27

List of Figures

FIGURE 1-A: PROJECT VICINITY MAP	2
FIGURE 1-B: PROPOSED PROJECT SITE PLAN	3

List of Tables

TABLE 2.1: AMBIENT AIR QUALITY STANDARDS	9
TABLE 2.2: SAN DIEGO COUNTY AIR BASIN ATTAINMENT STATUS BY POLLUTANT	11
TABLE 2.3: SCREENING LEVEL THRESHOLDS FOR CRITERIA POLLUTANTS.....	13
TABLE 2.4: THREE-YEAR AMBIENT AIR QUALITY SUMMARY NEAR THE PROJECT SITE	14
TABLE 3.1: EXPECTED CONSTRUCTION EQUIPMENT	17
TABLE 4.1: EXPECTED CONSTRUCTION EMISSIONS SUMMARY (WITH PDFS)	21
TABLE 4.2: EXPECTED PROJECT DESIGN DAILY POLLUTANT GENERATION	23

Appendix

CALEEMOD	28
CANCER RISK – SCREEN 3 AND UNMITIGATED AND MITIGATED CALCULATIONS.....	131

LIST OF COMMON ACRONYMS

Air Quality Impact Assessments (AQIA)
Assembly Bill 32 (AB32)
California Air Resource Board (CARB)
California Ambient Air Quality Standards (CAAQS)
California Environmental Quality Act (CEQA)
Carbon Dioxide (CO₂)
Cubic Yards (CY)
Diesel Particulate Matter (DPM)
Environmental Protection Agency (EPA)
EPA Office of Air Quality Planning and Standards (OAQPS)
Hazardous Air Pollutants (HAPs)
Hydrogen Sulfide (H₂S)
International Residential Code (IRC)
Level of Service (LOS)
Low Carbon Fuel Standard (LCFS)
Methane (CH₄)
National ambient air quality standards (NAAQS)
Nitrous Oxide (N₂O)
North County Transit District (NCTD)
Reactive Organic Gas (ROG)
Regional Air Quality Strategy (RAQS)
San Diego Air Basin (SDAB)
San Diego Air Pollution Control District (SDAPCD)
South Coast Air Quality Management District (SCAQMD)
Specific Plan Area (SPA)
State Implementation Plan (SIP)
Toxic Air Contaminants (TACs)
Vehicle Miles Traveled (VMT)

EXECUTIVE SUMMARY

This air quality impact study has been completed to determine the air quality impacts associated with the development of the proposed Phase 2 of the Greenhills Ranch Specific Plan (GRSP). The project is located in the unincorporated community of Lakeside in eastern San Diego County, CA.

The GRSP area is 92.16-acres in size. The Project calls for the buildout to include 94 residential units of which 31 units have been approved and constructed as part of Phase 1 of the GRSP. Phase 2 proposes the construction of 63 homes with a 36.26 acre section of the GRSP site. The project site is bordered by Audubon Road to the south and located west of Lake Jennings Park Road. The project will have access from both Audubon Road and Lake Jennings Park Road.

The proposed project site is currently designated Specific Plan Area 1.6 by the General Plan. The GRSP has an allowable density of 1.6 dwelling units (DU) per acre of land (County of San Diego, 2012) or 148 units within the GSRP. When complete (Phase 1 and Phase 2) the project would construct 94 units in total and would have an overall density of 1.01 DU/Acre which is less than the maximum authorized density. Given this, the project would be both consistent with and conform to the San Diego Regional Air Quality Strategy (RAQS) and the State Implementation Plan (SIP).

Project design features (PDFs) have been included in this Project. The applicant has agreed to implement all PDFs and will be included in the Project's Conditions of Approval. The following PDFs applied in this analysis with the purpose of reducing air emissions include:

- Project-related construction activities would use Tier 4 construction equipment with Diesel Particulate Filters (DPF) United States (U.S.) Environmental Protection Agency (EPA)/ California Air Resources Board (CARB)-certified construction equipment with DPF. The Project applicant has confirmed commitment to this feature.
- Comply with the County's Grading Ordinance and San Diego Air Pollution Control District's (SDAPCD's) fugitive dust rules outlined in section 87.426 (County of San Diego, 2012)
- The Project will utilize architectural coatings compliant with San Diego Air Pollution Control District (SDAPCD) Rule 67 (SDAPCD, 2015).
- During blasting, utilize no more than 6 tons of ANFO daily during any particular blast and would not blast an area greater than 20,000 square feet (SF) per day.
- Install high-efficiency light emitting diode (LED) street and area lighting to achieve reduction in overall lighting energy.
- In accordance with the California Integrated Waste Management Act (Assembly Bill [AB] 939), and to be consistent with AB 341's statewide 75 percent diversion policy, the Project will seek to also achieve a 75 percent diversion goal by providing areas for storage and

collection of recyclables and provide literature promoting recycling to achieve additional waste diversion.

- Comply with County's Water Conservation in Landscaping Ordinance and demonstrates a 40 percent reduction in outdoor use and will submit a Landscape Document Package to show such compliance. For purposes of this analysis only a 20% reduction was applied.
- Install low flow indoor water fixtures in all residential units
- Project design would only include Natural Gas Hearth Option (i.e., no wood burning fireplaces)

During construction of the proposed Project, fugitive dust emissions will be expected during grading and construction, but the project would not generate significant air quality impacts. No mitigation will be required.

Additionally, emissions will be generated from both area and operational sources which are the result of Project generated traffic, landscaping maintenance equipment, onsite energy consumption, consumer products, and annual maintenance and painting.

Micro scale CO emissions impacts are not expected since study intersections operating at Level of Service (LOS) E or worse do not have more than 3,000 vehicles within the intersection during the impact. Given this, project impacts related to CO hot spots would be less than significant. No additional mitigation measures are necessary per California Environmental Quality Act (CEQA) guidelines.

Based on the relative size of the project and relative distance to any foreseeable cumulative projects in the area, no significant cumulative construction impacts would be expected. Also, since the project would not generate any direct operational impacts, the project would result in less than significant cumulative impacts.

Finally, Potential onsite odor generators would include short-term construction odors from activities such as paving and painting, as well as exhaust from construction equipment. Odors created during short term construction activities such as the laying of asphalt are from the bitumen and solvents used within hot asphalt, and architectural coatings. These emissions are highly dispersive and even though sensitive residential receptors are adjacent to the site, short term odors are not considered an impact. Operations from the Project would be typical of a residential development and would not be associated with long term odors. Because construction odors would be temporary and the Project is not associated with long-term odors, a less than significant odor impact is expected.

In conclusion, the project was found to generate less than significant impacts and would be in compliance with AAQS. Given this, the project would not generate adverse human health impacts.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Air Quality study is to determine potential air quality impacts (if any) that may be created by construction, area or operational emissions (short term or long term) from the proposed Project. Should significant impacts be determined, the intent of this study would be to recommend suitable mitigation measures to reduce impacts to the extent feasible.

1.2 Project Location

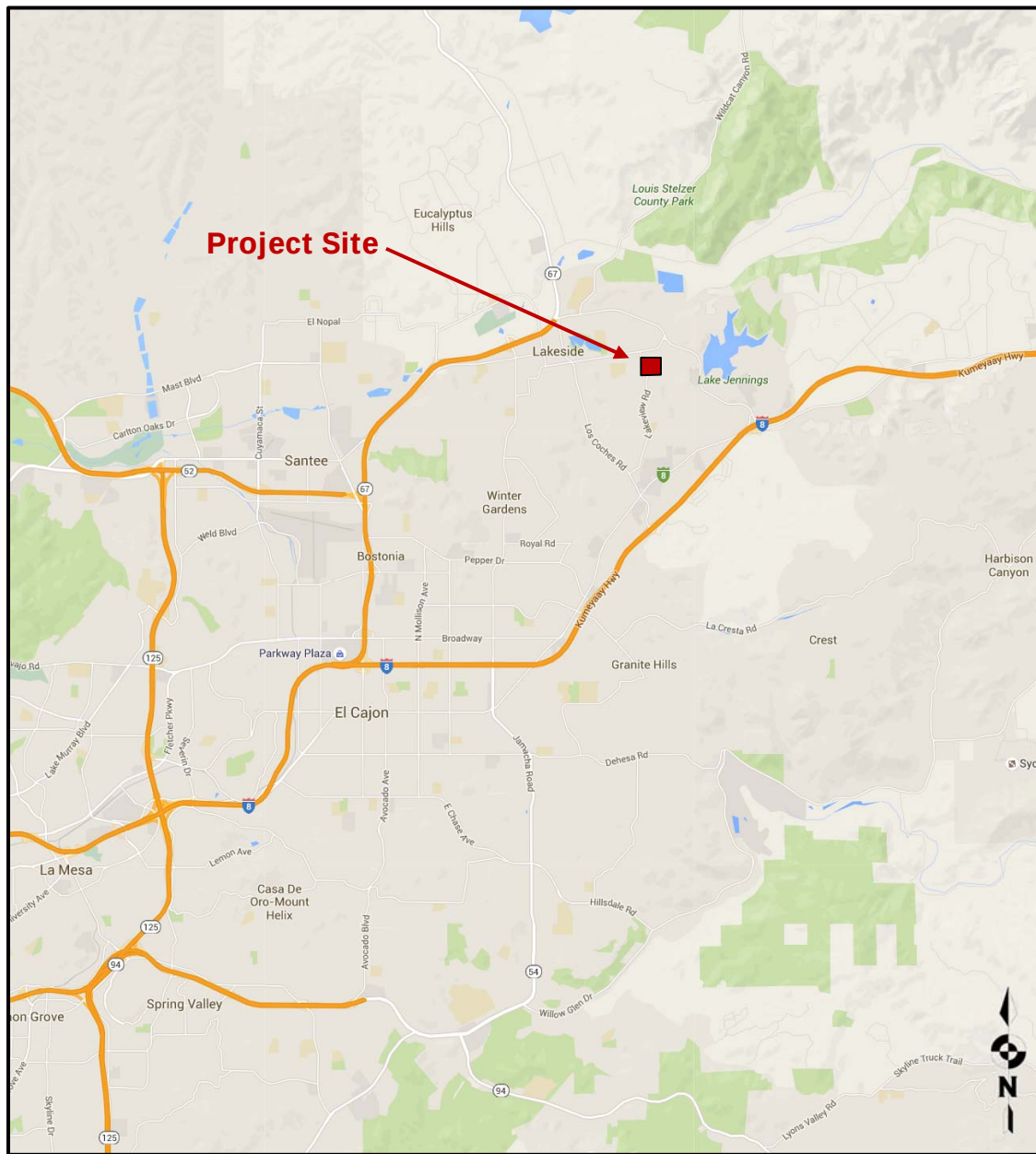
The proposed development is located at 32° 51' 04" N and 116° 53' 51" W, west of Lake Jennings Park Road and north of Audubon Road in the unincorporated community of Lakeside in eastern San Diego County, CA. A general project vicinity map is shown in Figure 1-A on the following page.

1.3 Project Description

The Greenhills Ranch Specific Plan (GRSP) Area is 92.16-acres in size. The Project calls for the buildout to include 94 residential units of which 31 units have been approved and constructed as part of Phase 1 of the GRSP. Phase 2 proposes the construction of 63 homes within a 36.26 acre section of the GRSP site. Under the existing General Plan land use designations, the site would allow for a maximum of approximately 148 dwelling units (1.6 maximum density x 92.7-acres). Phase 1 of the GSRP, which has already been constructed, included 31 residential lots. Phase 2 of the GSRP (i.e., the proposed project) proposes 63 residential lots which when added to the Phase 1 lots will allow for a total of 94 lots which would be below the maximum allowable buildout.

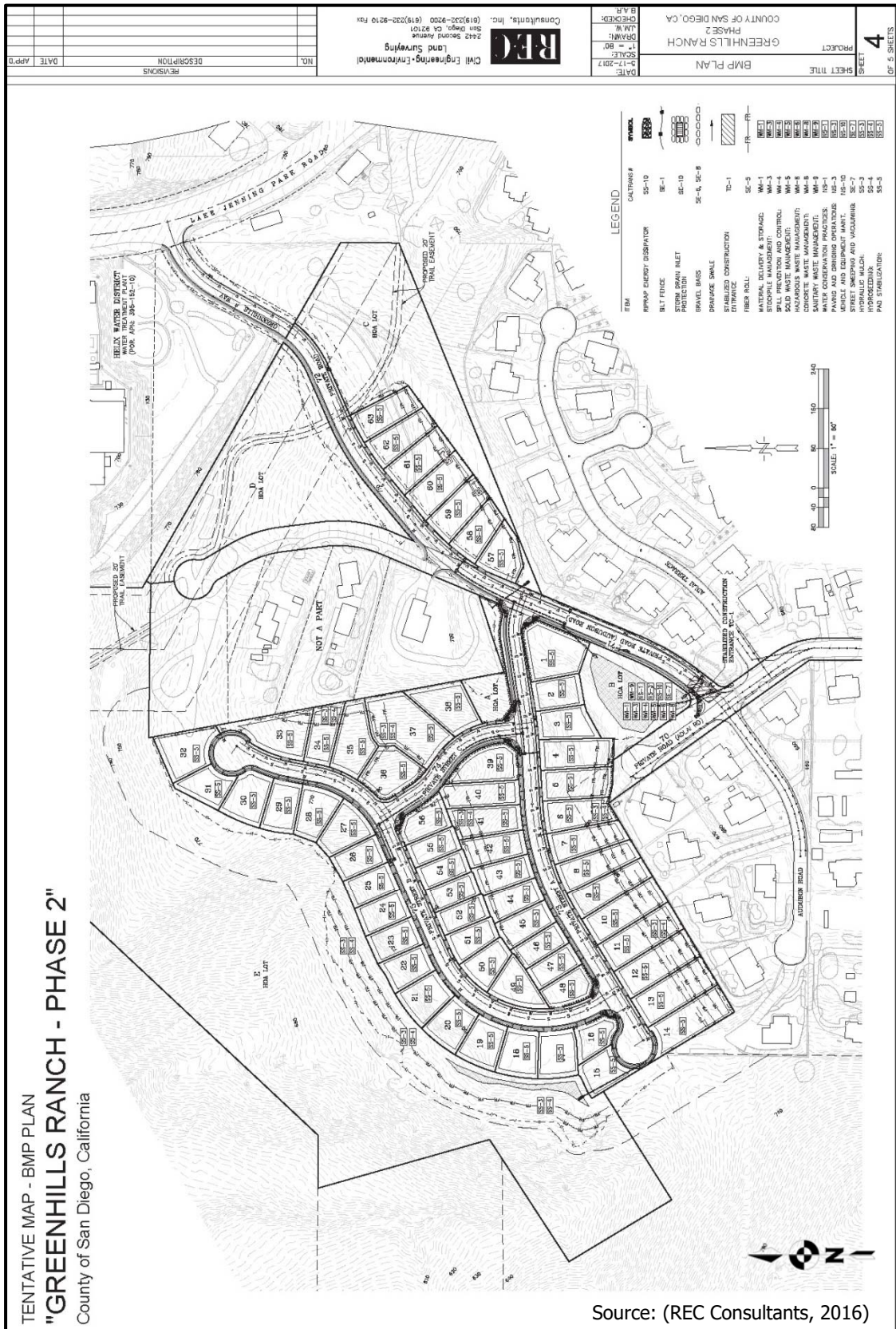
The project site is restricted in buildout potential as a result of the County's Multiple Species Conservation Program (MSCP) and Resource Protection Ordinance (RPO). The MSCP, adopted in 1998, designated a significant portion of the site as a biological habitat corridor (Lakeside Archipelago). The RPO, adopted in 1989, provides additional protections to sensitive resources countywide. Regarding Phase 2 of the GSRP, additional portions of the site are restricted for development under the RPO steep slope standards which identifies areas where "urban levels" of development could not take place. Through these two regulations, the Phase 1 and Phase 2 sites were afforded the ability to balance GSRP development across both sites, while accounting for County restrictions. Thus, Phase 1 development includes 31 single family lots on approximately 12 of the approximately 56-acre parcel and Phase 2 would include the development of 63 single family lots on approximately 17 of the 36 acres. The project site plan is shown on in Figure 1-B on Page 3 of this report.

Figure 1-A: Project Vicinity Map



Source: (Google, 2015)

Figure 1-B: Proposed Project Site Plan



The proposed project site is currently designated Specific Plan Area 1.6 by the General Plan, affording the GRSP an allowable density of 1.6 dwelling units (DU) per acre (County of San Diego, 2012) or 148 units. Phase 1 and Phase 2 of the GSRP would construct 94 total units and would have an overall density of 1.01 DU/Acre, which is less than the maximum allowed density. The remainder of the property that is not proposed and designated for single-family home development will be placed in open space easements, dedicated to the County of San Diego.

Construction of the project is proposed to begin in 2021, with full buildout anticipated in late 2022. Should the project construction date begin after the dates assumed for this analysis, the analysis contained herein would be considered conservative. The project would also require blasting; as such, the project's air quality study estimated the criteria air pollutants associated with blasting. Of relevance to this analysis, blasting-related activities would utilize ammonium nitrate with fuel oil (ANFO) based explosives. When ANFO detonates, the blast would produce both carbon monoxide (CO) and oxides of nitrogen (NOx) (EPA, 1995).

1.4 Project Design Features

Project design features (PDFs) have been incorporated into the Project to reduce emissions associated with construction, energy use, area sources and water demand. The Project would include PDFs that would reduce air emissions though not all are included within the air quality (AQ) modeling software due to limitations of the software. Given this, PDFs are broken out to include the following within this analysis. Since these specific PDFs are shown in modeling software, they shall therefore be considered as a condition of approval by the County.

- Project-related construction activities would use Tier 4 construction equipment with DPF U.S. EPA/ (CARB)-certified construction equipment with DPF. The Project applicant has confirmed commitment to this feature.
- Comply with the County's Grading Ordinance and SDAPCD's fugitive dust rules outlined in section 87.426 of that ordinance: (County of San Diego, 2012)
- The Project will utilize architectural coatings compliant with SDAPCD Rule 67 (SDAPCD, 2015).
- As a design feature, the proposed project would utilize no more than 6 tons of ammonium nitrate daily during any particular blast and would not blast an area greater than 20,000 SF per day.
- Install high-efficiency LED street and area lighting to achieve reduction in overall lighting energy.
- In accordance with AB 939, and to be consistent with AB 341's statewide 75 percent diversion policy, the Project will seek to also achieve a 75 percent diversion goal by

providing areas for storage and collection of recyclables and provide literature promoting recycling to achieve additional waste diversion.

- The Project applicant will be required to comply with County's Water Conservation in Landscaping Ordinance and demonstrates a 40 percent reduction in outdoor use and will submit a Landscape Document Package to show such compliance. For purposes of this analysis only a 20% reduction was applied.
- Install low flow indoor water fixtures in all residential units
- Project design would only include Natural Gas Hearth Option

The Project will also install PDFs geared to reduce both greenhouse gas (GHG) and AQ emissions that are not quantified or further discussed within this report. It should be noted that these design features are for informational purposes to this AQ report only since they are not applied in the AQ modeling.

- Landscaped and screened parking areas consistent with the County's Parking Design Manual, including Section 7 (Landscaping) and the "cool parking" mitigation requirements identified by the CARB.
- Building efficiency features such as heating, ventilation, and air conditioning (HVAC) systems, sealed (tight) air ducts that minimize heating and cooling HVAC losses, tankless water heaters and low efficacy (Low E) dual pane windows.
- Work with the regional or local water agency to determine if incentives/rebates are available for the purchase and installation of rain barrels.
- Install weather-based irrigation systems which include rain sensing timers.
- Project would install 10 300-watt solar panels on each of the proposed 63 residential units or a total of 630 300-watt solar panels.

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The site is surrounded by similar residential uses and shares a property line with the R. M. Levy Water Treatment Plant to the north, which would be located below the finished grade of any proposed residence. Given this, lift stations will not be required. The subject property is generally hilly and some of the site has been previously disturbed. The project site has existing structures with a total square footage of approximately 7,000 SF which will be demolished as part of the proposed project. Currently the site is generally devoid of significant vegetation with the exception of sparse grass and shrubs. Elevations onsite range from about 640 to 780 feet above mean sea level (AMSL). The project site is mostly surrounded by residential and agricultural land consisting of grass fields. The closest residential receptors are adjacent to the project site to the south and east.

2.2 Climate and Meteorology

Climate within the San Diego Air Basin (SDAB) area often varies dramatically over short geographical distances with cooler temperatures on the western coast gradually warming to the east as prevailing winds from the west heat up. Most of southern California is dominated by high-pressure systems for much of the year, which keeps San Diego mostly sunny and warm. Typically, during the winter months, the high-pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SDAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

Meteorological trends within the El Cajon area generally show daytime highs ranging between 69 degrees Fahrenheit (°F) in the winter to approximately 89°F in the summer with August usually being the hottest month. Median temperatures range from approximately 56°F in the winter to approximately 77°F in the summer. Precipitation is generally about 12.4 inches per year (WRCC, 2016). Prevailing wind patterns for the area vary during any given month during the year and also vary depending on the time of day or night. The predominant pattern though throughout the year is usually from the west or westerly (WRCC, 2018).

2.3 Regulatory Standards

Regulatory Standards whether it be from Federal, State or Local Governments are generally designed to reduce health impacts from air pollutants. Given this, these air quality regulations

help both regional and local jurisdictions make impact determinations under CEQA and maintain/achieve air quality standards that are protective of human health.

2.3.1 Federal Standards and Definitions

The Federal Air Quality Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of national ambient air quality standards (NAAQS) for major air pollutants.

The Clean Air Act established two types of air quality standards otherwise known as primary and secondary standards. **Primary Standards** set limits for the intention of protecting public health, which includes sensitive populations such as asthmatics, children and elderly. **Secondary Standards** set limits to protect public welfare to include the protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The U.S. EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. **Carbon Monoxide (CO):** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. **Lead (Pb):** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. **Nitrogen Dioxide (NO₂):** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO₂ is usually visible as a reddish-brown air layer over urban areas. NO₂ along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO₂ above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO₂ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.*
4. **Particulate Matter (PM₁₀ or PM_{2.5}):** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles*

vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM_{10} particles are 10 microns (μm) or less and $PM_{2.5}$ particles are 2.5 (μm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.

5. **Ozone (O_3):** is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.
6. **Sulfur Dioxide (SO_2):** is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.

2.3.2 State Standards and Definitions

CARB sets the laws and regulations for air quality on the state level. The California Ambient Air Quality Standards (CAAQS) are either the same as or more restrictive than the NAAQS, with the exception of NO_2 and SO_2 standards for which NAAQS are more restrictive, and also restricts four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. The additional contaminants as regulated by the CAAQS are defined below:

1. **Visibility Reducing Particles:** Particles in the Air that obstruct the visibility.
2. **Sulfates:** are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.
3. **Hydrogen Sulfide (H_2S):** is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 Parts per Million (ppm)) can cause a loss of consciousness and possibly death.
4. **Vinyl Chloride:** also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	Average Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃) ⁸	1 Hour	0.09 ppm (180 µg/m3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.070 ppm (137 µg/m3)		
Respirable Particulate Matter (PM10) ⁹	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		-		
Fine Particulate Matter (PM2.5) ⁹	24 Hour	No Separate State Standard		35 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	12.0 µg/m3	15 µg/m3	
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m3)	-	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m3)		-	-	-
Nitrogen Dioxide (NO ₂) ¹⁰	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m3) ⁸	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m3)		0.100 ppm ⁸ (188/ µg/m3)	-	
Sulfur Dioxide (SO ₂) ¹¹	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm ¹⁰ (for Certain Areas)	-	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method) ⁹
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm ¹⁰ (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m3)	
	1 Hour	0.25 ppm (655 µg/m3)		75 ppb (196 µg/m3)	-	
Lead ^{12,13}	30 Day Average	1.5 µg/m3	Atomic Absorption	-	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		1.5 µg/m3		
	Rolling 3-Month Average	-		0.15 µg/m3		
Visibility Reducing Particles	8 Hour	See footnote 14				
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

1.

California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2.

National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3.

Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4.

Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

5.

National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6.

National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7.

Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8.

On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9.

On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3 . The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3 , as was the annual secondary standard of 15 µg/m3 . The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10.

To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11.

On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

12.

The CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13.

The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14.

In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source:

(California Air Resources Board, 5/4/2016)

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. California Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as “non-attainment areas” for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the PM_{2.5} standard and many areas are in non-attainment for PM₁₀ as well. The state therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed for California Air basins to attain ambient air quality standards.

SDAPCD is the government agency which regulates sources of air pollution within the County. Therefore, the SDAPCD developed a Regional Air Quality Strategy (RAQS) which lays out the standards, actions, and regulations to bring the region into attainment for the National Ambient Air Quality Standard (NAAQS) and California Ambient Air Quality Standard (CAAQS), which are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health (SDAPCD, 2016).

Currently, San Diego is in “non-attainment” status for federal O₃ and the State PM₁₀, PM_{2.5}, and State Ozone however, an attainment plan is only available for O₃ (SDAPCD, 2016). The RAQS was adopted in 1992 and has been updated as recently as 2016 which was the latest update incorporating minor changes to the prior 2009 update. The 2016 update mostly summarizes how the 2009 update has lowered NO_x and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing for discussion three new VOC and four new NO_x reduction measures.

The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years. A complete listing of the current attainment status with respect to both federal and state nonattainment status by pollutants for the County is shown in Table 2.2 on the following page.

The RAQS is largely based on population predictions by the San Diego Association of Governments (SANDAG). Projects that produce less growth than predicted by SANDAG would generally conform to the RAQS. Projects that create more growth than projected by SANDAG may create a significant impact if the project produces unmitigable air quality emissions or if the produces cumulative impacts.

Table 2.2: San Diego County Air Basin Attainment Status by Pollutant

San Diego County Air Basin Attainment Status by Pollutant			
Pollutant	Average Time	California Standards	Federal Standards
Ozone (O ₃)	1 Hour	Non-attainment	No Federal Standard
	8 Hour	Non-attainment	Non-attainment
Respirable Particulate Matter (PM ₁₀)	24 Hour	Non-attainment	Unclassified ¹
	Annual Arithmetic Mean	Non-attainment	Unclassified ²
Fine Particulate Matter (PM _{2.5})	24 Hour	No State Standard	Attainment
	Annual Arithmetic Mean	Non-attainment	Attainment
Carbon Monoxide (CO)	8 hour	Attainment	Maintenance Area ³
	1 hour		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	No State Standard	Attainment
	1 Hour	Attainment	No Federal Standard
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	No State Standard	Attainment
	24 Hour	Attainment	Attainment
	1 Hour	Attainment	No Federal Standard
Lead	30 Day Average	Attainment	No Federal Standard
	Calendar Quarter	No State Standard	Attainment
Visibility Reducing Particles	8 Hour (10AM to 6PM, PST)	Unclassified	No Federal Standard
Sulfates	24 Hour	Attainment	No Federal Standard
Hydrogen Sulfide	1 Hour	Unclassified	No Federal Standard
1. Data reflects status as of December 2017 2. Unclassified; indicates data are not sufficient for determining attainment or nonattainment. 3. Maintenance Area (defined by U.S. Department of Transportation) is any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended.			

2.4 California Environmental Quality Act Significance Thresholds

The California Environmental Quality Act (CEQA) has provided a checklist to identify the significance of air quality impacts. These guidelines are found in Appendix G of the CEQA guidelines and are as follows:

AIR QUALITY -- 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 RAQS or applicable portions of the SIP?
- B:* Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?

- 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 (PM₁₀, PM_{2.5} or exceed quantitative thresholds for O₃ precursors, NO_x and VOCs)?
- D:* Expose sensitive receptors (including, but not limited to, schools, hospitals, residences, resident care facilities, or day-care centers) to substantial pollutant concentrations?
- E:* Create objectionable odors affecting a substantial number of people?

2.5 SDAPCD Rule 20.2 – Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established recommended trigger levels in Rule 20.2 for new or modified stationary sources. Through the County's Guidelines for Determining Significance and Report Format and Content Requirements, the County has adopted these trigger levels as Screening Level Thresholds¹ (SLTs) for use in determining CEQA air quality impacts (County of San Diego, 2007). These SLTs can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA. However, since SDAPCD does not have recommended trigger level for VOCs, the County has adopted the South Coast Air Quality Management District's (SCAQMD's) VOC threshold for the Coachella Valley.

Should emissions be found to exceed these County adopted SLTs, additional modeling is required to demonstrate that the project's total air quality impacts are below the state and federal ambient air quality standards. These SLTs for construction and operational activities are shown in Table 2.3 on the following page.

Non-Criteria pollutants such as Hazardous Air Pollutants (HAPs) or Toxic Air Contaminants (TACs) are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that propose to increase cancer risk to between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall the project increase the incremental cancer risk to over 10 in one million or a health hazard index (chronic and acute) greater than one since risks above. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology.

¹ County SLTs are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS. The federal and State ambient air quality standards, in turn, are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health.

Table 2.3: Screening Level Thresholds for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Respirable Particulate Matter (PM ₁₀ and PM _{2.5})	100 and 55
Nitrogen Oxide (NO _x)	250
Sulfur Oxide (SO _x)	250
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Operational Emissions	
Respirable Particulate Matter (PM ₁₀ and PM _{2.5})	100 and 55
Nitrogen Oxide (NO _x)	250
Sulfur Oxide (SO _x)	250
Carbon Monoxide (CO)	550
Lead and Lead Compounds	3.2
Volatile Organic Compounds (VOCs)	75

The U.S. EPA uses the term VOC and CARB's Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same thing. There are minor deviations between compounds that define each term however for purposes of this study we will assume they are essentially the same due to the fact SCAQMD interchanges these words and because Air Quality models directly calculates ROG in place of VOC.

2.6 Local Air Quality

Criteria pollutants are measured continuously throughout the San Diego Air Basin. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS. The SDAPCD is responsible for monitoring and reporting monitoring data and operates 11 monitoring sites, which collect data on criteria pollutants. The proposed development project is closest to the El Cajon Monitoring station which is located approximately 4.81 miles southwest from the project site. Table 2.4 on the following page identifies the criteria pollutants monitored at the aforementioned station.

Four additional sites collect meteorological data which is used by the District to assist with pollutant forecasting, data analysis and characterization of pollutant transport. Figure 2-A shows the relative locations of the monitoring sites. SDAPCD published the five-year air quality summary for all of the monitoring stations within the following link (SDAPCD, 2018).

Table 2.4: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2015	2016	2017	2017 Days Exceeded
O ₃ (ppm)	El Cajon-Floyd Smith Drive*	1 Hour	0.09 ppm	-	0.08	0.10	0.0	1
		8 Hour	0.070 ppm	0.070 ppm	0.07	0.08	0.08	9
PM ₁₀ (µg/m ³)		24 Hour	50 µg/m3	150 µg/m3	48	43	50	0
		Annual Arithmetic Mean	20 µg/m3	-	21.9	22.6	22.5	0
PM _{2.5} (µg/m ³)		24 Hour	-	35 µg/m3	24.7	23.9	31.8	0
		Annual Arithmetic Mean	12 µg/m3	12 µg/m3	8.2	9.3	9.5	0
NO ₂ (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.010	0.009	0.010	0
		1 Hour	0.18 ppm	0.10 ppm	0.059	0.057	0.045	0
CO (ppm)		1 Hour	20 ppm	35 ppm	1.4	1.7	1.5	0
		8 Hour	9 ppm	9 ppm	1.1	1.3	1.4	0
* In 2016 the monitoring station on Floyd Smith Drive was relocated back to its original location at Lexington Elementary School. - Indicates no data available								

3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod 2016.3.2 air quality model, which was developed by BREEZE Software for SCAQMD in 2017. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the project and uses methodologies presented in the U.S. EPA AP-42 document with emphasis on Chapter 11.9. Additionally, grading quantities are estimated by default within CalEEMod and were used in this analysis. The CalEEMod input/output model is shown in Attachment A to this report.

The SCREEN3 dispersion model will be used to determine the concentration for air pollutants at any location near the pollutant generator. Additionally, the model will predict the maximum exposure distance and concentrations. The SCREEN3 input/output file for the proposed project is shown in Attachment B at the end of this report. The worst-case exhaust emissions generated from the Project from construction equipment was utilized and calculated within the CalEEMod model. The notable toxic air contaminant from construction is diesel exhaust, since exposure to diesel exhaust is known to cause cancer and acute and chronic health effects. Diesel exhaust emissions can be estimated using the annual PM₁₀ exhaust emissions, referred to as diesel particulate matter (DPM), from onsite construction operations obtained from the annual CalEEMod model output by summing each onsite source for the construction duration.

Once the dispersed concentrations of DPM are estimated in the surrounding air, they are used to evaluate the exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst-case cancer risk dose calculation is defined in Equation 1 below (OEHHA, February 2015):

Equation 1

$$Dose_{air} = C_{air} * (BR/BW) * A * EF * (1 \times 10^{-6})$$

Dose _{air}	=	Dose through inhalation (mg/kg/d)
C _{air}	=	Concentration in air (µg/m ³) Annual average DPM concentration in µg/m ³ - SCREEN3 predicts a 1-hr concentration and is corrected to an annual average by multiplying the 1-hr average by 0.08 (US EPA, 1992)
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)

EF = Exposure frequency (unitless, days/365 days)
 1×10^{-6} = Milligrams to micrograms conversion (10^{-3} mg/ μ g), cubic meters to liters conversion (10^{-3} m³/l)

Once the dose is determined then you must calculate the cancer risk. Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. Specific factors as modeled are shown within the project models attached to this report. The worst-case cancer risk calculation is defined in Equation 2 below (OEHHA, February 2015):

Equation 2 $RISK_{inh-res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$

$RISK_{inh-res}$ = Residential inhalation cancer risk
 $DOSE_{air}$ = Daily inhalation dose (mg/kg-day)
 CPF = Inhalation cancer potency factor (mg/kg-day⁻¹)
 ASF = Age sensitivity factor for a specified age group (unitless)
 ED = Exposure duration (in years) for a specified age group
 AT = Averaging time for lifetime cancer risk (years)
 FAH = Fraction of time spent at home (unitless)

OEHHA recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans.

Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9-and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years.

Non-Cancer risks or risks defined as chronic or acute are also known with respect to DPM and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its chronic Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist. RELs are published by the Office of Environmental Health Hazard Assessment (OEHHA, February 2015). Diesel Exhaust has a REL of 5 μ g/m³ and targets the respiratory system.

3.2 Construction Assumptions

The Project construction dates were estimated based on a construction start date in 2021 with construction ending sometime in 2022 and are for the 63 units only as the 31 units under Phase 1 have been fully constructed. The proposed Project would include demolition of 7,000 SF of various onsite structures. CalEEMod Version 2016.3.2 was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 VOC paint standards and to include Tier 4 construction equipment per the Project description. The Project applicant has indicated that these construction PDFs and all PDFs identified in Section 1.4 would be fully utilized and is fully committed to them. Table 3.1 shows the expected timeframes for the construction of all Project infrastructure, facilities, and improvements at the site, as well as the expected number of pieces of equipment which have been verified by the applicant's Project Engineer.

Table 3.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Demolition	05/01/2021	05/14/2021	
Concrete/Industrial Saws			1
Excavators			1
Rubber Tired Dozers			1
Site Preparation	05/15/2021	06/11/2021	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			3
Grading	06/12/2021	11/30/2021	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Crushing/Proc. Equipment			1
Paving	12/01/2021	12/31/2021	
Pavers			2
Paving Equipment			2
Rollers			2
Building Construction	12/01/2021	10/28/2022	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	12/29/2021	10/28/2022	
Air Compressor			1
This equipment list is based upon default equipment inventory within CalEEMod.			

The construction start date assumed in this analysis represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

It should also be noted that the project design engineer expects that up to three separate blasts will be required during grading. During blasting operations, grading operations would temporarily stop and resume once blasting is completed. Per conversations with the project Civil Engineer, it is expected that each blast, limited to once a day, would be limited to six tons Ammonium Nitrate for any given blast operation. The area of each blast would be limited to 20,000 SF or (100-foot x 200-foot) area.

Blasting operations usually require a chemical material that is capable of extremely rapid combustion resulting in an explosion or detonation. These materials are usually mixtures of several ingredients but are often oxygen deficient as combustion reactions take place which causes a formation of carbon monoxide and to a lesser extent, nitrogen oxides. For ammonium nitrate and fuel oil (ANFO) mixtures it is expected that CO would be generated in quantities of 67 pounds (lbs) per every ton of explosives and NO_x would be generated at 17 lbs per the same quantity (EPA, 1995). Particulate matter will also be generated from blasting and can be estimated using Table 11.9-1 of the aforementioned document (EPA, 1995) using the following equation:

$$PM_{10}(lb / Blast) = 0.000014 * (BlastArea(ft^2)) * 0.52$$

3.3 Operational Emissions

Once construction is completed the proposed project would generate emissions from daily operations which would include sources such as area, energy, mobile, waste and water uses, which are also calculated within CalEEMod. Area Sources include consumer products, landscaping equipment, and architectural coatings as part of regular maintenance. Energy sources would be from uses such as onsite natural gas use. Finally, mobile or transportation related emissions are calculated in CalEEMod through the use of EMFAC2014. The operational model is also shown in **Attachment A** at the end of this report.

CalEEMod was updated to include 10 trips per day per unit or 630 average daily trips, based on the trip estimates included in the project traffic study (Linscott Law and Greenspan, 2019). The model also estimates emission predictions for VOC, NO_x, CO, SO₂, PM₁₀ and PM_{2.5} for area

source assumptions. Additionally, per CalEEMod defaults, an average of 10% of the structural surface area will be re-painted each year.

Consumer product emissions are generated by a wide range of product categories, including air fresheners, automotive products, household cleaners, and personal care products. Emissions associated with these products primarily depend on the increased population associated with residential development.

3.4 Micro Scale Operational Emissions

Air pollutant emissions related to Project traffic have the potential to create new, or worsen existing localized air quality violations with respect to CO. These increased carbon monoxide "Hot Spots" are determined through the utilization of the ITS Transportation Project-Level Carbon Monoxide Protocol (University of California, Davis for California Department of Transportation, 1997).

In the event the Project traffic adds vehicular trips to either an intersection that operates at Level of Service (LOS) E or F or any intersection where the Project trips re-classify the intersection level of service from an acceptable LOS to LOS E or F and when peak-hour trips exceed 3,000 the Project must quantify CO levels (County of San Diego, 2007).

Based upon our review of the project traffic study, none of the above prerequisites were met (Linscott Law and Greenspan, 2019). Therefore, intersection and roadway segment CO impacts would not be expected and are not analyzed further within this analysis.

3.5 Odor Impacts (Onsite)

Potential onsite odor generators would include short-term construction odors from activities such as paving (i.e. bitumen and solvent odors generated from asphalt laying), painting and architectural coatings, and exhaust from construction equipment. These emissions are highly dispersive and even though sensitive residential receptors are adjacent to the site, short term odors are not considered an impact. Operations from the Project would be typical of a residential development which is not typically associated with long term odor generation. Because construction odors would be temporary and the Project is not associated with long-term odors, a less than significant odor impact is expected.

4.0 FINDINGS

4.1 Construction Findings

The Project construction dates were estimated based a hypothetical construction kickoff in 2021 with grading expected to last about five and a half months which would include blasting. Once all the earthwork is complete, the project would pave the roads and start building construction. Construction of the project would be expected to be completed in 2022.

Grading and other site disturbance activities would stop during blasting operations and it is expected that each blast operation would require between 10,000 - 12,000 lbs of ANFO. As a design feature, the proposed project would utilize no more than 6 tons of ammonium nitrate daily which would generate up to 402 lbs (67 lbs/ton * 6 tons) of CO and up to 102 lbs (17 lbs/ton * 6 tons) of NO_x. These quantities would be additive to the mass grading operations for the entire project site that day and could be added to the worst-case mass grading daily CO and NO_x output.

Additional particulates derived from each blast is estimated over a 20,000 SF area roughly 100-feet by 200-feet in dimension, as identified in Section 3.2. Given this, it is estimated that each blast would generate 20.59 lb/blast as is shown in the equation below:

$$PM_{10}(lb / Blast) = 0.000014 * (20,000 \text{ ft}^2)^{1.5} * 0.52 = 20.59(lb / blast)$$

Based on these results, no significant construction impacts are expected. Table 4.1 below shows the calculated emissions from construction. It should be noted that as a design feature, the project would utilize Tier 4 diesel construction equipment with DPF. All CalEEMod calculations assume Tier 4 with DPF and therefore would be a condition of approval for this project

A summary of the construction emissions is shown in Table 4.1. Given these findings, the Project construction would not exceed SDAPCD air quality standards. A project with emissions rates below these thresholds is considered to have a less than significant impact on regional and local air quality and would have a low potential for resulting in impacts to human health due to the nexus between SLTs, ambient air quality standards, and public health and would not be required to incorporate mitigation measures to comply.

Additionally, it should be noted that the Project would be required to comply with the County's Grading Ordinance and SDAPCD's fugitive dust rules outlined in section 87.426 of the aforementioned ordinance (County of San Diego, 2012). Reductions from these rules have not been applied within CalEEMod modeling software.

Table 4.1: Expected Construction Emissions Summary (With PDFs)

Year	VOC	NO _x	CO	SO ₂	PM ₁₀ (Dust)	PM ₁₀ (Exhaust)	PM ₁₀ (Total)	PM _{2.5} (Dust)	PM _{2.5} (Exhaust)	PM _{2.5} (Total)
2021	7.37	5.12	38.44	0.07	20.18	0.12	20.19	10.19	0.12	10.20
2022	7.01	3.10	20.47	0.04	0.40	0.01	0.41	0.11	0.01	0.12
Maximum	7.37	5.12	38.44	0.07	20.18	0.12	20.19	10.19	0.12	10.20
Blasting Emissions calculations in text above ¹		102	402		20.59		20.59			
Construction w/ Blasting (Maximum)	7.37	107.12	440.44	0.07	40.77	0.12	40.78	10.19	0.12	10.2
Screening Level Threshold (lb/day)	75	250	550	250	-	-	100	-	-	55
Exceeds Threshold?	No	No	No	No	-	-	No	-	-	No
Notes: ¹ Blasting emissions are added to worst-case daily emissions. At the time of this analysis it is unknown which specific days blasting activities would occur. To estimate worst-case daily emissions, emissions from blasting activities were added to worst-case daily emissions generated from construction activities.										

4.2 Health Risk

Based upon the air quality modeling and assuming Tier 4 equipment as a design feature to the project, worst-case onsite PM₁₀ from onsite construction exhaust would cumulatively produce 0.00824 tons over the construction duration (390-working days) or an average of 0.00066 grams/second.

The average emission rate over the grading area is 4.53x10⁻⁹ g/m²/s, which was calculated as follows:

$$\frac{6.65 * 10^{-4} \frac{\text{grams}}{\text{second}}}{36.26 \text{ acres} * 4,046 \frac{\text{meters}^2}{\text{acre}}} = 4.53 * 10^{-9} \frac{\text{grams}}{\text{meters}^2 \text{ second}}$$

Utilizing the SCREEN3 dispersion model, we find that the peak maximum 1-hr concentration is 0.297 µg/m³ during the worst-case construction period. Converting the peak 1-hr concentration to an annual concentration by multiplying it by 0.08 (US EPA, 1992) yields an annual concentration of 0.0238 µg/m³. Therefore, utilizing the risk equation identified above in Section 3.1, the inhalation cancer risk is 4.52 per million exposed at the point of maximum exposure 299 meters or 981 feet away. The nearest residential receptor is located

approximately 100 meters or 328 feet away from the project centroid. At this distance, the one-hour concentration is 0.2714 which would have an inhalation cancer risk of 3.31 per million exposed which is greater than the one in one million threshold. It should be noted however that a project design feature would be to utilize Tier 4 or better diesel equipment with diesel particulate filters attached inline to the exhaust system and would be a condition to the project. Since the risk at the point of maximum exposure is greater than 1, T-BACT equipment must be utilized. Tier 4 equipment which was analyzed and would have a risk of 3.31 per million exposed is considered T-BACT, for which the impact threshold is 10 in one million. The project would not generate a health risk greater than this threshold, thus no additional mitigation measures would be required. Given this the Inhalation Cancer risks would be considered less than significant under CEQA and would be in compliance with the County's thresholds.

There are known chronic health risks associated with diesel exhaust which are considered non-cancer risks. These risks are calculated based on methods identified in Section 3.1 of this report. From this we find that the hourly concentration of $0.068 \mu\text{g}/\text{m}^3$ divided by the REL of $5 \mu\text{g}/\text{m}^3$ yields a Health Hazard Index of 0.014, which is less than one. Therefore, no non-cancer risks are expected and all health risks are considered less than significant.

Cumulative construction projects within the area are located greater than 1,000 meters from the project site or over $\frac{1}{2}$ mile away. Since the project health risk screening model predicted that the diesel exhaust would produce the highest concentrations at 296 meters or 971 feet from the project site and the increased emissions would not generate cancer risks greater than 10 per one million exposed, it's reasonable to conclude that cumulative contributions from similar sources in excess of 1,000 meters from the project site would not cumulatively increase this risk since the point of maximum exposure for similar sized projects wouldn't overlap assuming an approximate 296 meter radius for each project as the point of maximum exposure. Also, since construction emissions were found to be less than significant as shown in Table 4.1 above, and since no nearby cumulative construction projects have been identified, a less than significant cumulative construction air quality impact would be expected.

4.3 Operational Findings

The proposed project will generate 10 trips per day per unit or 630 daily trips once the Project is fully operational (the following calendar year after construction) in the year 2023 (Linscott Law and Greenspan, 2019).

The expected daily pollutant generation can be calculated utilizing the product of the average daily miles traveled and the expected emissions inventory calculated by EMFAC2014; CalEEMod performs this calculation. The daily pollutant emissions for the proposed design are

shown in Table 4.2 below and include PDFs as identified in Section 1.4 of this report. Based on these findings, the Project operations would not exceed SDAPCD air quality standards. A project with emissions rates below these thresholds is considered to have a less than significant impact on regional and local air quality and would have a low potential for resulting in impacts to human health due to the nexus between SLTs, ambient air quality standards, and public health and would not be required to incorporate mitigation measures to comply. Given this, a less than significant impact is expected.

Table 4.2: Expected Project Design Daily Pollutant Generation

	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Summer Scenario (Lb/Day)						
Area	3.09	1.11	5.64	0.01	0.11	0.11
Energy	0.04	0.37	0.16	0.00	0.03	0.03
Mobile	1.09	4.12	14.34	0.05	5.00	1.36
Total (Unmitigated)	4.22	5.59	20.14	0.06	5.14	1.51
Screening Level Threshold (lb/day)	75	250	550	250	100	55
Significant?	No	No	No	No	No	No
Winter Scenario (Lb/Day)						
Area	3.09	1.11	5.64	0.01	0.11	0.11
Energy	0.04	0.37	0.16	0.00	0.03	0.03
Mobile	1.05	4.26	13.82	0.05	5.00	1.36
Total (Unmitigated)	4.19	5.74	19.63	0.06	5.14	1.51
Screening Level Threshold (lb/day)	75	250	550	250	100	55
Significant?	No	No	No	No	No	No
Daily pollutant generation assumes trip distances within CalEEMod						

4.4 Odor Impacts (Onsite)

Potential onsite odor generators would include short-term construction odors from activities such as paving and painting, as well as exhaust from construction equipment. Odors created during short term construction activities such as the laying of asphalt are from the bitumen and solvents used within hot asphalt, and architectural coatings. These emissions are highly dispersive and even though sensitive residential receptors are adjacent to the site, short term odors would be temporary and not generate a significant impact. Operations from the Project would be typical of a residential development and would not be associated with the generation of long term, offensive odors. Because construction odors would be temporary and the Project is not associated with long-term odors, a less than significant odor impact is expected.

4.5 Cumulative Operational Impacts

The Project includes development of Phase 2 of the GSRP, and proposes the construction of 63 homes within a 36.26 acre section of the GRSP site. The GRSP has an allowable density of 1.6 DU per acre of land (County of San Diego, 2012) or 148 units within the GSRP. When complete (Phase 1 and Phase 2) the project would construct 94 units in total and would have an overall density of 1.01 DU/Acre which is less than the maximum authorized density. With the approval of the Phase 2 application the Greenhills Ranch Specific Plan will be complete. All portions of the property not approved and designated for development will be in open space easements dedicated to the County of San Diego.

The proposed project site is currently designated (21) Specific Plan Area (SPA) 1.6 & 1 within the General Plan and is shown on the Lakeside Community Plan Map. The site is predominately zoned S88, allowing a density of 1.6 per acre with two lots zoned A70, allowing one dwelling unit per 1 acre (County of San Diego, 2012). The project is asking for a uniform zoning of S88 for the entire site along with open space lots. Since the total buildout of 94 units is less than the allowable 148 units, the project would be smaller based on scale alone, and would therefore generate a less than significant cumulative operational impact. Given this, the proposed smaller project would be anticipated to generate fewer emissions during operations than is currently allowed on site. Thus, the project would be consistent with the growth assumptions in the General Plan and would not conflict with the County's ability to comply with the RAQS/SIP. As noted previously, the RAQS/SIP were developed in support of the NAAQS and CAAQS. These standards were established to be protective of human health. Therefore, projects that are consistent with the RAQS/SIP would also be considered to be consistent with the protective human health standards of the NAAQS and CAAQS.

4.6 Conclusion of Findings

During construction of the proposed Project, air quality emissions will be expected though it was found that construction emissions would be less than significant. Therefore, no mitigation will be required. As part of the County's Grading Plan, the project would be required to implement best management practices (BMP) practices to limit fugitive dust. It was found that the project including all PDFs identified in Section 1.4 of this report will reduce construction impacts to less than significant.

Additionally, emissions will be generated from operational sources which are the result of Project generated traffic, landscaping maintenance equipment, consumer products, and annual maintenance and painting to name a few. It was found that the project including all PDFs identified in Section 1.4 of this report will reduce operational impacts to less than significant.

Based upon our review of the project traffic study, none of the above prerequisites were met. Therefore, intersection and roadway segment CO impacts would not be expected and are not analyzed further within this analysis.

Potential onsite odor generators would include short-term construction odors from activities such as paving and painting, as well as exhaust from construction equipment. Odors created during short term construction activities such as the laying of asphalt are from the bitumen and solvents used within hot asphalt, and architectural coatings. These emissions are highly dispersive and even though sensitive residential receptors are adjacent to the site, short term odors are not considered an impact. Operations from the Project would be typical of a residential development and would not be associated with long term odors. Because construction odors would be temporary and the Project is not associated with long-term odors, a less than significant odor impact is expected.

Based on the relative size of the project and relative distance to any foreseeable cumulative projects in the area, no significant cumulative construction impacts would be expected. Also, since the project would not generate any direct operational impacts cumulative impacts would not be expected either.

The Project calls for the buildout to include 94 residential units of which 31 units have been approved and constructed as part of Phase 1 of the GRSP. Phase 2 proposes the construction of 63 homes within a 36.26 acre section of the GRSP site. The GRSP has an allowable density of 1.6 DU per acre of land (County of San Diego, 2012) or 148 units within the GSRP. The Project calls for the buildout to include 94 residential units of which 31 units have been approved and constructed as part of Phase 1 of the GRSP. When complete (Phase 1 and Phase 2) the project would construct 94 units in total and would have an overall density of 1.01 DU/Acre which is substantially less than the maximum authorized density.

Since the total buildout of 94 units is less than the allowable 148 units, the project would be smaller based on scale alone, and would therefore generate a less than significant cumulative operational impact. Given this, the proposed smaller project would be anticipated to generate fewer emissions during operations than is currently allowed on site. Thus, the project would be consistent with the growth assumptions in the General Plan and would not conflict with the County's ability to comply with the RAQS/SIP.

In Conclusion, the project was found to generate less than significant impacts and would be in compliance with AAQS. Given this, the project would not generate adverse human health impacts.

5.0 REFERENCES

- California Air Resources Board. (5/4/2016). *www.arb.ca.gov*. Retrieved from Ambient Air Quality Standards: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>
- County of San Diego. (2007, March 19). *AQ-Guidelines*. Retrieved from <https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf>
- County of San Diego. (2012, October 25). *San Diego Grading Ordinance*. Retrieved August 2015, from <http://www.sandiegocounty.gov/>: <http://www.sandiegocounty.gov/dpw/land/landpdf/gradingordinance.pdf>
- County of San Diego. (2012). *www.sandiegocounty.gov*. Retrieved March 26, 2017, from <http://www.sandiegocounty.gov/pds/zoning/z2000.pdf>
- EPA, U. (1995). *EPA-AP 42, Fifth Edition Compilation of Air Pollutant Emission Factors*. US EPA. Retrieved from www.epa.gov/ttn/chief/ap42/ch13/final/c13s03.pdf
- Google. (2015). Retrieved 2011, from maps.google.com
- OEHHA. (February 2015). *Air Toxics Hot Spots Program - Risk Assessment Guidelines - Guidance Manual for Preparation of Health Risk Assessments*. OEHHA.
- REC Consultants. (September 2015). *Greenhills Ranch Site Plan*.
- SDAPCD. (2015). *RULE 67.0.1. ARCHITECTURAL COATINGS*. Retrieved from <https://www.arb.ca.gov/drdb/sd/curhtml/r67.0.1.pdf>
- SDAPCD. (2016). *2008 EIGHT-HOUR OZONE ATTAINMENT PLAN FOR SAN DIEGO COUNTY*. Retrieved from <https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/8-Hr-O3%20Attain%20Plan-08%20Std.pdf>
- SDAPCD. (2016). *2016 REVISION OF THE REGIONAL AIR QUALITY STRATEGY FOR SAN DIEGO COUNTY*. Retrieved from <https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/2016%20RAQS.pdf>
- SDAPCD. (2018). *5 Year Summary 2013-17*. Retrieved 2015, from https://www.sdapcd.org/content/dam/sdc/apcd/monitoring/5-Year_Air_Quality.pdf
- US EPA. (1992). *Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised*. US EPA. Retrieved from http://www.epa.gov/scram001/guidance/guide/EPA-454R-92-019_OCR.pdf
- WRCC. (2018). Retrieved from https://wrcc.dri.edu/Climate/comp_table_show.php?stype=wind_dir_avg

6.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the air quality environment and impacts within and surrounding the proposed Project development. This report was prepared utilizing the latest emission rates and reduction methodologies. This report was prepared by Jeremy Loudon; a County approved CEQA Consultant for Air Quality.



Jeremy Loudon, Principal
Ldn Consulting, Inc.
(760) 473-1253
jloudon@ldnconsulting.net

Date: 11/17/2020

ATTACHMENT A

CalEEMod

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

Green Hills Ranch 63 Unit Single Family

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	63.00	Dwelling Unit	36.26	113,400.00	180

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	474.15	CH4 Intensity (lb/MWhr)	0.019	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2023 60% by 2030

Land Use - Project site is 36.26 acres

Construction Phase - Proposed Construction Sched

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Proposed Equipment

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Proposed Equipment

Trips and VMT -

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

Demolition -

Grading - 32.26acres

Architectural Coating - Rule 67 Paint

Vehicle Trips - Per TS

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Project will utilize 100% Natural Gas Hearths

Area Coating - Rule 67 Paints

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Tier 4

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	50.00	10.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	75.00	122.00
tblConstructionPhase	NumDays	740.00	238.00
tblConstructionPhase	NumDays	55.00	23.00
tblConstructionPhase	NumDays	55.00	218.00
tblFireplaces	NumberGas	34.65	63.00
tblFireplaces	NumberNoFireplace	6.30	0.00
tblFireplaces	NumberWood	22.05	0.00
tblGrading	AcresOfGrading	305.00	36.26
tblGrading	AcresOfGrading	0.00	36.26
tblLandUse	LotAcreage	20.45	36.26
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	720.49	474.15
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	ST_TR	9.91	10.00
tblVehicleTrips	SU_TR	8.62	10.00
tblVehicleTrips	WD_TR	9.52	10.00
tblWoodstoves	NumberCatalytic	3.15	0.00
tblWoodstoves	NumberNoncatalytic	3.15	0.00

2.0 Emissions Summary

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	10.1117	48.2243	34.8992	0.0684	20.1806	2.0914	22.1145	10.1891	1.9324	11.9683	0.0000	6,627.840 3	6,627.840 3	1.9736	0.0000	6,677.181 1
2022	8.5666	17.7577	19.3588	0.0350	0.4005	0.8942	1.2947	0.1072	0.8461	0.9533	0.0000	3,360.836 2	3,360.836 2	0.6526	0.0000	3,377.152 2
Maximum	10.1117	48.2243	34.8992	0.0684	20.1806	2.0914	22.1145	10.1891	1.9324	11.9683	0.0000	6,627.840 3	6,627.840 3	1.9736	0.0000	6,677.181 1

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.3743	5.1245	38.4416	0.0684	20.1806	0.1213	20.1904	10.1891	0.1211	10.1988	0.0000	6,627.840 3	6,627.840 3	1.9736	0.0000	6,677.181 1
2022	7.0133	3.0971	20.4745	0.0350	0.4005	0.0102	0.4107	0.1072	9.9800e-003	0.1172	0.0000	3,360.836 2	3,360.836 2	0.6526	0.0000	3,377.152 2
Maximum	7.3743	5.1245	38.4416	0.0684	20.1806	0.1213	20.1904	10.1891	0.1211	10.1988	0.0000	6,627.840 3	6,627.840 3	1.9736	0.0000	6,677.181 1

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	22.97	87.54	-8.58	0.00	0.00	95.60	12.00	0.00	95.28	20.17	0.00	0.00	0.00	0.00	0.00	0.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0945	1.1050	5.6434	6.9500e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.476 4	1,343.476 4	0.0346	0.0245	1,351.629 4
Energy	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
Mobile	1.0852	4.1167	14.3368	0.0543	4.9578	0.0396	4.9975	1.3250	0.0369	1.3619		5,522.373 5	5,522.373 5	0.2604		5,528.883 6
Total	4.2232	5.5937	20.1386	0.0636	4.9578	0.1830	5.1408	1.3250	0.1803	1.5052	0.0000	7,340.749 5	7,340.749 5	0.3041	0.0332	7,358.234 7

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0945	1.1050	5.6434	6.9500e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.476 4	1,343.476 4	0.0346	0.0245	1,351.629 4
Energy	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
Mobile	1.0852	4.1167	14.3368	0.0543	4.9578	0.0396	4.9975	1.3250	0.0369	1.3619		5,522.373 5	5,522.373 5	0.2604		5,528.883 6
Total	4.2232	5.5937	20.1386	0.0636	4.9578	0.1830	5.1408	1.3250	0.1803	1.5052	0.0000	7,340.749 5	7,340.749 5	0.3041	0.0332	7,358.234 7

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2021	5/14/2021	5	10	
2	Site Preparation	Site Preparation	5/15/2021	6/11/2021	5	20	
3	Grading	Grading	6/12/2021	11/30/2021	5	122	
4	Building Construction	Building Construction	12/1/2021	10/28/2022	5	238	
5	Paving	Paving	12/1/2021	12/31/2021	5	23	
6	Architectural Coating	Architectural Coating	12/29/2021	10/28/2022	5	218	

Acres of Grading (Site Preparation Phase): 36.26**Acres of Grading (Grading Phase): 36.26****Acres of Paving: 0****Residential Indoor: 229,635; Residential Outdoor: 76,545; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Crushing/Proc. Equipment	1	4.00	85	0.78
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	8.00	0.00	32.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	23.00	7.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Demolition - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6977	0.0000	0.6977	0.1057	0.0000	0.1057			0.0000			0.0000
Off-Road	1.6604	16.1626	10.9836	0.0200		0.8100	0.8100		0.7591	0.7591		1,920.208 8	1,920.208 8	0.4638		1,931.803 1
Total	1.6604	16.1626	10.9836	0.0200	0.6977	0.8100	1.5077	0.1057	0.7591	0.8647		1,920.208 8	1,920.208 8	0.4638		1,931.803 1

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.2 Demolition - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0238	0.8203	0.2007	2.4700e-003	0.0559	2.5000e-003	0.0584	0.0153	2.3900e-003	0.0177		270.6177	270.6177	0.0239		271.2153
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0384	0.0267	0.3126	1.0100e-003	0.1022	6.8000e-004	0.1029	0.0271	6.3000e-004	0.0277		100.3589	100.3589	2.7900e-003		100.4287
Total	0.0622	0.8470	0.5133	3.4800e-003	0.1581	3.1800e-003	0.1613	0.0424	3.0200e-003	0.0454		370.9766	370.9766	0.0267		371.6441

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6977	0.0000	0.6977	0.1057	0.0000	0.1057			0.0000			0.0000
Off-Road	0.2307	0.9995	11.6102	0.0200		4.6100e-003	4.6100e-003		4.6100e-003	4.6100e-003	0.0000	1,920.2088	1,920.2088	0.4638		1,931.8030
Total	0.2307	0.9995	11.6102	0.0200	0.6977	4.6100e-003	0.7023	0.1057	4.6100e-003	0.1103	0.0000	1,920.2088	1,920.2088	0.4638		1,931.8030

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.2 Demolition - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0238	0.8203	0.2007	2.4700e-003	0.0559	2.5000e-003	0.0584	0.0153	2.3900e-003	0.0177		270.6177	270.6177	0.0239		271.2153
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0384	0.0267	0.3126	1.0100e-003	0.1022	6.8000e-004	0.1029	0.0271	6.3000e-004	0.0277		100.3589	100.3589	2.7900e-003		100.4287
Total	0.0622	0.8470	0.5133	3.4800e-003	0.1581	3.1800e-003	0.1613	0.0424	3.0200e-003	0.0454		370.9766	370.9766	0.0267		371.6441

3.3 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.9890	0.0000	19.9890	10.1383	0.0000	10.1383			0.0000			0.0000
Off-Road	3.7009	38.6013	18.8940	0.0349		1.9327	1.9327		1.7781	1.7781		3,384.7568	3,384.7568	1.0947		3,412.1243
Total	3.7009	38.6013	18.8940	0.0349	19.9890	1.9327	21.9216	10.1383	1.7781	11.9164		3,384.7568	3,384.7568	1.0947		3,412.1243

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.3 Site Preparation - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0720	0.0501	0.5862	1.8900e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		188.1729	188.1729	5.2400e-003		188.3039
Total	0.0720	0.0501	0.5862	1.8900e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		188.1729	188.1729	5.2400e-003		188.3039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.9890	0.0000	19.9890	10.1383	0.0000	10.1383			0.0000			0.0000
Off-Road	0.4276	1.8529	18.5269	0.0349		8.5500e-003	8.5500e-003		8.5500e-003	8.5500e-003	0.0000	3,384.7568	3,384.7568	1.0947		3,412.1243
Total	0.4276	1.8529	18.5269	0.0349	19.9890	8.5500e-003	19.9975	10.1383	8.5500e-003	10.1468	0.0000	3,384.7568	3,384.7568	1.0947		3,412.1243

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.3 Site Preparation - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0720	0.0501	0.5862	1.8900e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		188.1729	188.1729	5.2400e-003		188.3039
Total	0.0720	0.0501	0.5862	1.8900e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		188.1729	188.1729	5.2400e-003		188.3039

3.4 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3373	0.0000	6.3373	3.3443	0.0000	3.3443			0.0000			0.0000
Off-Road	4.4473	48.1474	33.0481	0.0655		2.0894	2.0894		1.9306	1.9306		6,339.3085	6,339.3085	1.9656		6,388.4485
Total	4.4473	48.1474	33.0481	0.0655	6.3373	2.0894	8.4267	3.3443	1.9306	5.2748		6,339.3085	6,339.3085	1.9656		6,388.4485

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.4 Grading - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1105	0.0769	0.8988	2.8900e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		288.5319	288.5319	8.0300e-003		288.7326
Total	0.1105	0.0769	0.8988	2.8900e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		288.5319	288.5319	8.0300e-003		288.7326

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3373	0.0000	6.3373	3.3443	0.0000	3.3443			0.0000			0.0000
Off-Road	1.0176	5.0476	35.1688	0.0655		0.1193	0.1193		0.1193	0.1193	0.0000	6,339.3085	6,339.3085	1.9656		6,388.4485
Total	1.0176	5.0476	35.1688	0.0655	6.3373	0.1193	6.4566	3.3443	0.1193	3.4636	0.0000	6,339.3085	6,339.3085	1.9656		6,388.4485

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.4 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1105	0.0769	0.8988	2.8900e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		288.5319	288.5319	8.0300e-003		288.7326
Total	0.1105	0.0769	0.8988	2.8900e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		288.5319	288.5319	8.0300e-003		288.7326

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0200	0.6846	0.1730	1.7500e-003	0.0429	1.3700e-003	0.0442	0.0123	1.3100e-003	0.0137		188.4619	188.4619	0.0139		188.8082
Worker	0.1105	0.0769	0.8988	2.8900e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		288.5319	288.5319	8.0300e-003		288.7326
Total	0.1305	0.7615	1.0717	4.6400e-003	0.3366	3.3200e-003	0.3400	0.0903	3.1100e-003	0.0934		476.9938	476.9938	0.0219		477.5408

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	0.3278	2.2347	17.4603	0.0269		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0200	0.6846	0.1730	1.7500e-003	0.0429	1.3700e-003	0.0442	0.0123	1.3100e-003	0.0137		188.4619	188.4619	0.0139		188.8082
Worker	0.1105	0.0769	0.8988	2.8900e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		288.5319	288.5319	8.0300e-003		288.7326
Total	0.1305	0.7615	1.0717	4.6400e-003	0.3366	3.3200e-003	0.3400	0.0903	3.1100e-003	0.0934		476.9938	476.9938	0.0219		477.5408

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0186	0.6482	0.1636	1.7300e-003	0.0429	1.1800e-003	0.0440	0.0123	1.1300e-003	0.0135		186.6957	186.6957	0.0134		187.0308
Worker	0.1046	0.0702	0.8364	2.7900e-003	0.2938	1.9100e-003	0.2957	0.0779	1.7600e-003	0.0797		277.9376	277.9376	7.3600e-003		278.1217
Total	0.1232	0.7183	1.0000	4.5200e-003	0.3366	3.0900e-003	0.3397	0.0903	2.8900e-003	0.0931		464.6333	464.6333	0.0208		465.1525

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	0.3278	2.2347	17.4603	0.0269		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.5 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0186	0.6482	0.1636	1.7300e-003	0.0429	1.1800e-003	0.0440	0.0123	1.1300e-003	0.0135		186.6957	186.6957	0.0134		187.0308
Worker	0.1046	0.0702	0.8364	2.7900e-003	0.2938	1.9100e-003	0.2957	0.0779	1.7600e-003	0.0797		277.9376	277.9376	7.3600e-003		278.1217
Total	0.1232	0.7183	1.0000	4.5200e-003	0.3366	3.0900e-003	0.3397	0.0903	2.8900e-003	0.0931		464.6333	464.6333	0.0208		465.1525

3.6 Paving - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.6 Paving - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0720	0.0501	0.5862	1.8900e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		188.1729	188.1729	5.2400e-003		188.3039
Total	0.0720	0.0501	0.5862	1.8900e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		188.1729	188.1729	5.2400e-003		188.3039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.6 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0720	0.0501	0.5862	1.8900e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		188.1729	188.1729	5.2400e-003		188.3039
Total	0.0720	0.0501	0.5862	1.8900e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		188.1729	188.1729	5.2400e-003		188.3039

3.7 Architectural Coating - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5098					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	6.7287	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.7 Architectural Coating - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0240	0.0167	0.1954	6.3000e-004	0.0639	4.2000e-004	0.0643	0.0169	3.9000e-004	0.0173		62.7243	62.7243	1.7500e-003		62.7680
Total	0.0240	0.0167	0.1954	6.3000e-004	0.0639	4.2000e-004	0.0643	0.0169	3.9000e-004	0.0173		62.7243	62.7243	1.7500e-003		62.7680

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5098					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0193		281.9309
Total	6.5396	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0193		281.9309

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.7 Architectural Coating - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0240	0.0167	0.1954	6.3000e-004	0.0639	4.2000e-004	0.0643	0.0169	3.9000e-004	0.0173		62.7243	62.7243	1.7500e-003		62.7680
Total	0.0240	0.0167	0.1954	6.3000e-004	0.0639	4.2000e-004	0.0643	0.0169	3.9000e-004	0.0173		62.7243	62.7243	1.7500e-003		62.7680

3.7 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5098					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	6.7144	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.7 Architectural Coating - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0227	0.0153	0.1818	6.1000e-004	0.0639	4.1000e-004	0.0643	0.0169	3.8000e-004	0.0173		60.4212	60.4212	1.6000e-003		60.4613
Total	0.0227	0.0153	0.1818	6.1000e-004	0.0639	4.1000e-004	0.0643	0.0169	3.8000e-004	0.0173		60.4212	60.4212	1.6000e-003		60.4613

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5098					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0183		281.9062
Total	6.5396	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0183		281.9062

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

3.7 Architectural Coating - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0227	0.0153	0.1818	6.1000e-004	0.0639	4.1000e-004	0.0643	0.0169	3.8000e-004	0.0173		60.4212	60.4212	1.6000e-003		60.4613
Total	0.0227	0.0153	0.1818	6.1000e-004	0.0639	4.1000e-004	0.0643	0.0169	3.8000e-004	0.0173		60.4212	60.4212	1.6000e-003		60.4613

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0852	4.1167	14.3368	0.0543	4.9578	0.0396	4.9975	1.3250	0.0369	1.3619		5,522.3735	5,522.3735	0.2604		5,528.8836
Unmitigated	1.0852	4.1167	14.3368	0.0543	4.9578	0.0396	4.9975	1.3250	0.0369	1.3619		5,522.3735	5,522.3735	0.2604		5,528.8836

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	630.00	630.00	630.00	2,338,336	2,338,336
Total	630.00	630.00	630.00	2,338,336	2,338,336

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	16.80	7.10	7.90	42.00	19.00	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
NaturalGas Unmitigated	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	4036.65	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
Total		0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	4.03665	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
Total		0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0945	1.1050	5.6434	6.9500e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.4764	1,343.4764	0.0346	0.0245	1,351.6294
Unmitigated	3.0945	1.1050	5.6434	6.9500e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.4764	1,343.4764	0.0346	0.0245	1,351.6294

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1223	1.0451	0.4447	6.6700e-003		0.0845	0.0845		0.0845	0.0845	0.0000	1,334.1177	1,334.1177	0.0256	0.0245	1,342.0456
Landscaping	0.1566	0.0599	5.1987	2.7000e-004		0.0288	0.0288		0.0288	0.0288		9.3588	9.3588	9.0000e-003		9.5838
Total	3.0945	1.1050	5.6435	6.9400e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.4764	1,343.4764	0.0346	0.0245	1,351.6294

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1223	1.0451	0.4447	6.6700e-003		0.0845	0.0845		0.0845	0.0845	0.0000	1,334.1177	1,334.1177	0.0256	0.0245	1,342.0456
Landscaping	0.1566	0.0599	5.1987	2.7000e-004		0.0288	0.0288		0.0288	0.0288		9.3588	9.3588	9.0000e-003		9.5838
Total	3.0945	1.1050	5.6435	6.9400e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.4764	1,343.4764	0.0346	0.0245	1,351.6294

7.0 Water Detail**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Green Hills Ranch 63 Unit Single Family - San Diego County, Summer

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

Green Hills Ranch 63 Unit Single Family San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	63.00	Dwelling Unit	36.26	113,400.00	180

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	474.15	CH4 Intensity (lb/MWhr)	0.019	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2023 60% by 2030

Land Use - Project site is 36.26 acres

Construction Phase - Proposed Construction Sched

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Proposed Equipment

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Proposed Equipment

Trips and VMT -

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

Demolition -

Grading - 32.26acres

Architectural Coating - Rule 67 Paint

Vehicle Trips - Per TS

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Project will utilize 100% Natural Gas Hearths

Area Coating - Rule 67 Paints

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Tier 4

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	50.00	10.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	75.00	122.00
tblConstructionPhase	NumDays	740.00	238.00
tblConstructionPhase	NumDays	55.00	23.00
tblConstructionPhase	NumDays	55.00	218.00
tblFireplaces	NumberGas	34.65	63.00
tblFireplaces	NumberNoFireplace	6.30	0.00
tblFireplaces	NumberWood	22.05	0.00
tblGrading	AcresOfGrading	305.00	36.26
tblGrading	AcresOfGrading	0.00	36.26
tblLandUse	LotAcreage	20.45	36.26
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	720.49	474.15
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	ST_TR	9.91	10.00
tblVehicleTrips	SU_TR	8.62	10.00
tblVehicleTrips	WD_TR	9.52	10.00
tblWoodstoves	NumberCatalytic	3.15	0.00
tblWoodstoves	NumberNoncatalytic	3.15	0.00

2.0 Emissions Summary

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	10.1462	48.2336	34.7873	0.0683	20.1806	2.0914	22.1145	10.1891	1.9324	11.9683	0.0000	6,610.048 1	6,610.048 1	1.9731	0.0000	6,659.376 1
2022	8.5886	17.7649	19.2962	0.0348	0.4005	0.8943	1.2948	0.1072	0.8462	0.9534	0.0000	3,334.725 4	3,334.725 4	0.6529	0.0000	3,351.048 3
Maximum	10.1462	48.2336	34.7873	0.0683	20.1806	2.0914	22.1145	10.1891	1.9324	11.9683	0.0000	6,610.048 1	6,610.048 1	1.9731	0.0000	6,659.376 1

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.4088	5.1338	38.3297	0.0683	20.1806	0.1213	20.1904	10.1891	0.1211	10.1988	0.0000	6,610.048 1	6,610.048 1	1.9731	0.0000	6,659.376 1
2022	7.0353	3.1043	20.4119	0.0348	0.4005	0.0103	0.4108	0.1072	0.0100	0.1172	0.0000	3,334.725 4	3,334.725 4	0.6529	0.0000	3,351.048 3
Maximum	7.4088	5.1338	38.3297	0.0683	20.1806	0.1213	20.1904	10.1891	0.1211	10.1988	0.0000	6,610.048 1	6,610.048 1	1.9731	0.0000	6,659.376 1

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	22.90	87.52	-8.61	0.00	0.00	95.59	12.00	0.00	95.28	20.17	0.00	0.00	0.00	0.00	0.00	0.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0945	1.1050	5.6434	6.9500e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.476 4	1,343.476 4	0.0346	0.0245	1,351.629 4
Energy	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
Mobile	1.0518	4.2607	13.8247	0.0515	4.9578	0.0398	4.9976	1.3250	0.0371	1.3620		5,243.028 0	5,243.028 0	0.2593		5,249.510 8
Total	4.1898	5.7377	19.6265	0.0608	4.9578	0.1832	5.1410	1.3250	0.1804	1.5054	0.0000	7,061.404 0	7,061.404 0	0.3030	0.0332	7,078.861 9

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0945	1.1050	5.6434	6.9500e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.476 4	1,343.476 4	0.0346	0.0245	1,351.629 4
Energy	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
Mobile	1.0518	4.2607	13.8247	0.0515	4.9578	0.0398	4.9976	1.3250	0.0371	1.3620		5,243.028 0	5,243.028 0	0.2593		5,249.510 8
Total	4.1898	5.7377	19.6265	0.0608	4.9578	0.1832	5.1410	1.3250	0.1804	1.5054	0.0000	7,061.404 0	7,061.404 0	0.3030	0.0332	7,078.861 9

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2021	5/14/2021	5	10	
2	Site Preparation	Site Preparation	5/15/2021	6/11/2021	5	20	
3	Grading	Grading	6/12/2021	11/30/2021	5	122	
4	Building Construction	Building Construction	12/1/2021	10/28/2022	5	238	
5	Paving	Paving	12/1/2021	12/31/2021	5	23	
6	Architectural Coating	Architectural Coating	12/29/2021	10/28/2022	5	218	

Acres of Grading (Site Preparation Phase): 36.26**Acres of Grading (Grading Phase): 36.26****Acres of Paving: 0****Residential Indoor: 229,635; Residential Outdoor: 76,545; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Crushing/Proc. Equipment	1	4.00	85	0.78
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	8.00	0.00	32.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	23.00	7.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Demolition - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6977	0.0000	0.6977	0.1057	0.0000	0.1057			0.0000			0.0000
Off-Road	1.6604	16.1626	10.9836	0.0200		0.8100	0.8100		0.7591	0.7591		1,920.2088	1,920.2088	0.4638		1,931.8031
Total	1.6604	16.1626	10.9836	0.0200	0.6977	0.8100	1.5077	0.1057	0.7591	0.8647		1,920.2088	1,920.2088	0.4638		1,931.8031

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.2 Demolition - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0244	0.8273	0.2133	2.4200e-003	0.0559	2.5600e-003	0.0585	0.0153	2.4500e-003	0.0178		265.9422	265.9422	0.0247		266.5594
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0446	0.0300	0.2879	9.4000e-004	0.1022	6.8000e-004	0.1029	0.0271	6.3000e-004	0.0277		94.1703	94.1703	2.6100e-003		94.2357
Total	0.0690	0.8573	0.5013	3.3600e-003	0.1581	3.2400e-003	0.1613	0.0424	3.0800e-003	0.0455		360.1125	360.1125	0.0273		360.7951

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6977	0.0000	0.6977	0.1057	0.0000	0.1057			0.0000			0.0000
Off-Road	0.2307	0.9995	11.6102	0.0200		4.6100e-003	4.6100e-003		4.6100e-003	4.6100e-003	0.0000	1,920.2088	1,920.2088	0.4638		1,931.8030
Total	0.2307	0.9995	11.6102	0.0200	0.6977	4.6100e-003	0.7023	0.1057	4.6100e-003	0.1103	0.0000	1,920.2088	1,920.2088	0.4638		1,931.8030

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.2 Demolition - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0244	0.8273	0.2133	2.4200e-003	0.0559	2.5600e-003	0.0585	0.0153	2.4500e-003	0.0178		265.9422	265.9422	0.0247		266.5594
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0446	0.0300	0.2879	9.4000e-004	0.1022	6.8000e-004	0.1029	0.0271	6.3000e-004	0.0277		94.1703	94.1703	2.6100e-003		94.2357
Total	0.0690	0.8573	0.5013	3.3600e-003	0.1581	3.2400e-003	0.1613	0.0424	3.0800e-003	0.0455		360.1125	360.1125	0.0273		360.7951

3.3 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.9890	0.0000	19.9890	10.1383	0.0000	10.1383			0.0000			0.0000
Off-Road	3.7009	38.6013	18.8940	0.0349		1.9327	1.9327		1.7781	1.7781		3,384.7568	3,384.7568	1.0947		3,412.1243
Total	3.7009	38.6013	18.8940	0.0349	19.9890	1.9327	21.9216	10.1383	1.7781	11.9164		3,384.7568	3,384.7568	1.0947		3,412.1243

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.3 Site Preparation - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0563	0.5399	1.7700e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		176.5693	176.5693	4.9000e-003		176.6919
Total	0.0837	0.0563	0.5399	1.7700e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		176.5693	176.5693	4.9000e-003		176.6919

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.9890	0.0000	19.9890	10.1383	0.0000	10.1383			0.0000			0.0000
Off-Road	0.4276	1.8529	18.5269	0.0349		8.5500e-003	8.5500e-003		8.5500e-003	8.5500e-003	0.0000	3,384.7568	3,384.7568	1.0947		3,412.1243
Total	0.4276	1.8529	18.5269	0.0349	19.9890	8.5500e-003	19.9975	10.1383	8.5500e-003	10.1468	0.0000	3,384.7568	3,384.7568	1.0947		3,412.1243

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.3 Site Preparation - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0563	0.5399	1.7700e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		176.5693	176.5693	4.9000e-003		176.6919
Total	0.0837	0.0563	0.5399	1.7700e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		176.5693	176.5693	4.9000e-003		176.6919

3.4 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3373	0.0000	6.3373	3.3443	0.0000	3.3443			0.0000			0.0000
Off-Road	4.4473	48.1474	33.0481	0.0655		2.0894	2.0894		1.9306	1.9306		6,339.3085	6,339.3085	1.9656		6,388.4485
Total	4.4473	48.1474	33.0481	0.0655	6.3373	2.0894	8.4267	3.3443	1.9306	5.2748		6,339.3085	6,339.3085	1.9656		6,388.4485

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.4 Grading - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1283	0.0862	0.8278	2.7200e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		270.7396	270.7396	7.5200e-003		270.9276
Total	0.1283	0.0862	0.8278	2.7200e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		270.7396	270.7396	7.5200e-003		270.9276

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3373	0.0000	6.3373	3.3443	0.0000	3.3443			0.0000			0.0000
Off-Road	1.0176	5.0476	35.1688	0.0655		0.1193	0.1193		0.1193	0.1193	0.0000	6,339.3085	6,339.3085	1.9656		6,388.4485
Total	1.0176	5.0476	35.1688	0.0655	6.3373	0.1193	6.4566	3.3443	0.1193	3.4636	0.0000	6,339.3085	6,339.3085	1.9656		6,388.4485

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.4 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1283	0.0862	0.8278	2.7200e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		270.7396	270.7396	7.5200e-003		270.9276
Total	0.1283	0.0862	0.8278	2.7200e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		270.7396	270.7396	7.5200e-003		270.9276

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0212	0.6817	0.1937	1.7000e-003	0.0429	1.4300e-003	0.0443	0.0123	1.3700e-003	0.0137		183.1891	183.1891	0.0148		183.5580
Worker	0.1283	0.0862	0.8278	2.7200e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		270.7396	270.7396	7.5200e-003		270.9276
Total	0.1494	0.7680	1.0215	4.4200e-003	0.3366	3.3800e-003	0.3400	0.0903	3.1700e-003	0.0934		453.9287	453.9287	0.0223		454.4855

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	0.3278	2.2347	17.4603	0.0269		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0212	0.6817	0.1937	1.7000e-003	0.0429	1.4300e-003	0.0443	0.0123	1.3700e-003	0.0137		183.1891	183.1891	0.0148		183.5580
Worker	0.1283	0.0862	0.8278	2.7200e-003	0.2938	1.9500e-003	0.2957	0.0779	1.8000e-003	0.0797		270.7396	270.7396	7.5200e-003		270.9276
Total	0.1494	0.7680	1.0215	4.4200e-003	0.3366	3.3800e-003	0.3400	0.0903	3.1700e-003	0.0934		453.9287	453.9287	0.0223		454.4855

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0197	0.6450	0.1832	1.6800e-003	0.0429	1.2300e-003	0.0441	0.0123	1.1800e-003	0.0135		181.4379	181.4379	0.0143		181.7944
Worker	0.1218	0.0787	0.7689	2.6200e-003	0.2938	1.9100e-003	0.2957	0.0779	1.7600e-003	0.0797		260.8084	260.8084	6.8900e-003		260.9806
Total	0.1415	0.7237	0.9521	4.3000e-003	0.3366	3.1400e-003	0.3398	0.0903	2.9400e-003	0.0932		442.2463	442.2463	0.0212		442.7750

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	0.3278	2.2347	17.4603	0.0269		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.5 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0197	0.6450	0.1832	1.6800e-003	0.0429	1.2300e-003	0.0441	0.0123	1.1800e-003	0.0135		181.4379	181.4379	0.0143		181.7944
Worker	0.1218	0.0787	0.7689	2.6200e-003	0.2938	1.9100e-003	0.2957	0.0779	1.7600e-003	0.0797		260.8084	260.8084	6.8900e-003		260.9806
Total	0.1415	0.7237	0.9521	4.3000e-003	0.3366	3.1400e-003	0.3398	0.0903	2.9400e-003	0.0932		442.2463	442.2463	0.0212		442.7750

3.6 Paving - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.6 Paving - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0563	0.5399	1.7700e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		176.5693	176.5693	4.9000e-003		176.6919
Total	0.0837	0.0563	0.5399	1.7700e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		176.5693	176.5693	4.9000e-003		176.6919

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.6 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0563	0.5399	1.7700e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		176.5693	176.5693	4.9000e-003		176.6919
Total	0.0837	0.0563	0.5399	1.7700e-003	0.1916	1.2700e-003	0.1929	0.0508	1.1700e-003	0.0520		176.5693	176.5693	4.9000e-003		176.6919

3.7 Architectural Coating - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5098					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	6.7287	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.7 Architectural Coating - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0279	0.0188	0.1800	5.9000e-004	0.0639	4.2000e-004	0.0643	0.0169	3.9000e-004	0.0173		58.8564	58.8564	1.6300e-003		58.8973
Total	0.0279	0.0188	0.1800	5.9000e-004	0.0639	4.2000e-004	0.0643	0.0169	3.9000e-004	0.0173		58.8564	58.8564	1.6300e-003		58.8973

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5098					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0193		281.9309
Total	6.5396	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0193		281.9309

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.7 Architectural Coating - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0279	0.0188	0.1800	5.9000e-004	0.0639	4.2000e-004	0.0643	0.0169	3.9000e-004	0.0173		58.8564	58.8564	1.6300e-003		58.8973
Total	0.0279	0.0188	0.1800	5.9000e-004	0.0639	4.2000e-004	0.0643	0.0169	3.9000e-004	0.0173		58.8564	58.8564	1.6300e-003		58.8973

3.7 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5098					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	6.7144	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.7 Architectural Coating - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0265	0.0171	0.1672	5.7000e-004	0.0639	4.1000e-004	0.0643	0.0169	3.8000e-004	0.0173		56.6975	56.6975	1.5000e-003		56.7349
Total	0.0265	0.0171	0.1672	5.7000e-004	0.0639	4.1000e-004	0.0643	0.0169	3.8000e-004	0.0173		56.6975	56.6975	1.5000e-003		56.7349

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.5098					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0183		281.9062
Total	6.5396	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0183		281.9062

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

3.7 Architectural Coating - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0265	0.0171	0.1672	5.7000e-004	0.0639	4.1000e-004	0.0643	0.0169	3.8000e-004	0.0173		56.6975	56.6975	1.5000e-003		56.7349
Total	0.0265	0.0171	0.1672	5.7000e-004	0.0639	4.1000e-004	0.0643	0.0169	3.8000e-004	0.0173		56.6975	56.6975	1.5000e-003		56.7349

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0518	4.2607	13.8247	0.0515	4.9578	0.0398	4.9976	1.3250	0.0371	1.3620		5,243.0280	5,243.0280	0.2593		5,249.5108
Unmitigated	1.0518	4.2607	13.8247	0.0515	4.9578	0.0398	4.9976	1.3250	0.0371	1.3620		5,243.0280	5,243.0280	0.2593		5,249.5108

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	630.00	630.00	630.00	2,338,336	2,338,336
Total	630.00	630.00	630.00	2,338,336	2,338,336

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	16.80	7.10	7.90	42.00	19.00	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
NaturalGas Unmitigated	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	4036.65	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
Total		0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	4.03665	0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217
Total		0.0435	0.3720	0.1583	2.3700e-003		0.0301	0.0301		0.0301	0.0301		474.8996	474.8996	9.1000e-003	8.7100e-003	477.7217

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0945	1.1050	5.6434	6.9500e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.4764	1,343.4764	0.0346	0.0245	1,351.6294
Unmitigated	3.0945	1.1050	5.6434	6.9500e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.4764	1,343.4764	0.0346	0.0245	1,351.6294

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1223	1.0451	0.4447	6.6700e-003		0.0845	0.0845		0.0845	0.0845	0.0000	1,334.1177	1,334.1177	0.0256	0.0245	1,342.0456
Landscaping	0.1566	0.0599	5.1987	2.7000e-004		0.0288	0.0288		0.0288	0.0288		9.3588	9.3588	9.0000e-003		9.5838
Total	3.0945	1.1050	5.6435	6.9400e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.4764	1,343.4764	0.0346	0.0245	1,351.6294

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1223	1.0451	0.4447	6.6700e-003		0.0845	0.0845		0.0845	0.0845	0.0000	1,334.1177	1,334.1177	0.0256	0.0245	1,342.0456
Landscaping	0.1566	0.0599	5.1987	2.7000e-004		0.0288	0.0288		0.0288	0.0288		9.3588	9.3588	9.0000e-003		9.5838
Total	3.0945	1.1050	5.6435	6.9400e-003		0.1133	0.1133		0.1133	0.1133	0.0000	1,343.4764	1,343.4764	0.0346	0.0245	1,351.6294

7.0 Water Detail**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Green Hills Ranch 63 Unit Single Family - San Diego County, Winter

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

Green Hills Ranch 63 Unit Single Family

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	63.00	Dwelling Unit	36.26	113,400.00	180

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	474.15	CH4 Intensity (lb/MW hr)	0.019	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2023 60% by 2030

Land Use - Project site is 36.26 acres

Construction Phase - Proposed Construction Sched

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Proposed Equipment

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Proposed Equipment

Trips and VMT -

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

Demolition -

Grading - 32.26acres

Architectural Coating - Rule 67 Paint

Vehicle Trips - Per TS

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Project will utilize 100% Natural Gas Hearths

Area Coating - Rule 67 Paints

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Tier 4

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	50.00	10.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	75.00	122.00
tblConstructionPhase	NumDays	740.00	238.00
tblConstructionPhase	NumDays	55.00	23.00
tblConstructionPhase	NumDays	55.00	218.00
tblFireplaces	NumberGas	34.65	63.00
tblFireplaces	NumberNoFireplace	6.30	0.00
tblFireplaces	NumberWood	22.05	0.00
tblGrading	AcresOfGrading	305.00	36.26
tblGrading	AcresOfGrading	0.00	36.26
tblLandUse	LotAcreage	20.45	36.26
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	720.49	474.15
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	ST_TR	9.91	10.00
tblVehicleTrips	SU_TR	8.62	10.00
tblVehicleTrips	WD_TR	9.52	10.00
tblWoodstoves	NumberCatalytic	3.15	0.00
tblWoodstoves	NumberNoncatalytic	3.15	0.00

2.0 Emissions Summary

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.3733	3.7748	2.6987	5.3000e-003	0.6161	0.1700	0.7861	0.3129	0.1572	0.4701	0.0000	465.4093	465.4093	0.1356	0.0000	468.7987
2022	0.9212	1.9104	2.0741	3.7400e-003	0.0421	0.0961	0.1382	0.0113	0.0910	0.1022	0.0000	325.8194	325.8194	0.0636	0.0000	327.4103
Maximum	0.9212	3.7748	2.6987	5.3000e-003	0.6161	0.1700	0.7861	0.3129	0.1572	0.4701	0.0000	465.4093	465.4093	0.1356	0.0000	468.7987

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0946	0.3909	2.8681	5.3000e-003	0.6161	7.7200e-003	0.6238	0.3129	7.7100e-003	0.3206	0.0000	465.4087	465.4087	0.1356	0.0000	468.7981
2022	0.7543	0.3344	2.1940	3.7400e-003	0.0421	1.1000e-003	0.0432	0.0113	1.0800e-003	0.0124	0.0000	325.8190	325.8190	0.0636	0.0000	327.4099
Maximum	0.7543	0.3909	2.8681	5.3000e-003	0.6161	7.7200e-003	0.6238	0.3129	7.7100e-003	0.3206	0.0000	465.4087	465.4087	0.1356	0.0000	468.7981

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	34.43	87.24	-6.06	0.00	0.00	96.69	27.84	0.00	96.46	41.83	0.00	0.00	0.00	0.00	0.00	0.00

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
12	3-13-2021	6-12-2021	0.5368	0.0370
13	6-13-2021	9-12-2021	1.7343	0.2054
14	9-13-2021	12-12-2021	1.6379	0.1989
15	12-13-2021	3-12-2022	0.9117	0.2990
16	3-13-2022	6-12-2022	0.8651	0.3324
17	6-13-2022	9-12-2022	0.8649	0.3322
18	9-13-2022	9-30-2022	0.1692	0.0650
		Highest	1.7343	0.3324

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5330	0.0482	0.4861	3.0000e-004		6.0500e-003	6.0500e-003		6.0500e-003	6.0500e-003	0.0000	50.3861	50.3861	1.6900e-003	9.1000e-004	50.6993
Energy	7.9400e-003	0.0679	0.0289	4.3000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	188.3198	188.3198	5.9000e-003	2.3700e-003	189.1727
Mobile	0.1875	0.7762	2.5019	9.4600e-003	0.8812	7.2200e-003	0.8884	0.2359	6.7200e-003	0.2427	0.0000	873.2563	873.2563	0.0425	0.0000	874.3192
Waste						0.0000	0.0000		0.0000	0.0000	14.9807	0.0000	14.9807	0.8853	0.0000	37.1141
Water						0.0000	0.0000		0.0000	0.0000	1.3022	17.6782	18.9805	0.1345	3.3100e-003	23.3275
Total	0.7284	0.8923	3.0169	0.0102	0.8812	0.0188	0.8999	0.2359	0.0183	0.2542	16.2830	1,129.6404	1,145.9233	1.0699	6.5900e-003	1,174.6329

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5330	0.0482	0.4861	3.0000e-004		6.0500e-003	6.0500e-003		6.0500e-003	6.0500e-003	0.0000	50.3861	50.3861	1.6900e-003	9.1000e-004	50.6993
Energy	7.9400e-003	0.0679	0.0289	4.3000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	171.9706	171.9706	5.2500e-003	2.2300e-003	172.7660
Mobile	0.1875	0.7762	2.5019	9.4600e-003	0.8812	7.2200e-003	0.8884	0.2359	6.7200e-003	0.2427	0.0000	873.2563	873.2563	0.0425	0.0000	874.3192
Waste						0.0000	0.0000		0.0000	0.0000	11.2356	0.0000	11.2356	0.6640	0.0000	27.8356
Water						0.0000	0.0000		0.0000	0.0000	1.3022	16.4416	17.7438	0.1344	3.3000e-003	22.0865
Total	0.7284	0.8923	3.0169	0.0102	0.8812	0.0188	0.8999	0.2359	0.0183	0.2542	12.5378	1,112.0545	1,124.5923	0.8479	6.4400e-003	1,147.7067

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.00	1.56	1.86	20.75	2.28	2.29

3.0 Construction Detail**Construction Phase**

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2021	5/14/2021	5	10	
2	Site Preparation	Site Preparation	5/15/2021	6/11/2021	5	20	
3	Grading	Grading	6/12/2021	11/30/2021	5	122	
4	Building Construction	Building Construction	12/1/2021	10/28/2022	5	238	
5	Paving	Paving	12/1/2021	12/31/2021	5	23	
6	Architectural Coating	Architectural Coating	12/29/2021	10/28/2022	5	218	

Acres of Grading (Site Preparation Phase): 36.26

Acres of Grading (Grading Phase): 36.26

Acres of Paving: 0

Residential Indoor: 229,635; Residential Outdoor: 76,545; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0
(Architectural Coating – sqft)

OffRoad Equipment

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Crushing/Proc. Equipment	1	4.00	85	0.78
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	8.00	0.00	32.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	23.00	7.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Demolition - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4900e-003	0.0000	3.4900e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-003	0.0808	0.0549	1.0000e-004		4.0500e-003	4.0500e-003		3.8000e-003	3.8000e-003	0.0000	8.7099	8.7099	2.1000e-003	0.0000	8.7625
Total	8.3000e-003	0.0808	0.0549	1.0000e-004	3.4900e-003	4.0500e-003	7.5400e-003	5.3000e-004	3.8000e-003	4.3300e-003	0.0000	8.7099	8.7099	2.1000e-003	0.0000	8.7625

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.2 Demolition - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	4.1800e-003	1.0300e-003	1.0000e-005	2.7000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.2186	1.2186	1.1000e-004	0.0000	1.2213
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.5000e-004	1.4500e-003	0.0000	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4315	0.4315	1.0000e-005	0.0000	0.4318
Total	3.2000e-004	4.3300e-003	2.4800e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.9000e-004	2.1000e-004	1.0000e-005	2.3000e-004	0.0000	1.6500	1.6500	1.2000e-004	0.0000	1.6531

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4900e-003	0.0000	3.4900e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1500e-003	5.0000e-003	0.0581	1.0000e-004		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.7099	8.7099	2.1000e-003	0.0000	8.7625
Total	1.1500e-003	5.0000e-003	0.0581	1.0000e-004	3.4900e-003	2.0000e-005	3.5100e-003	5.3000e-004	2.0000e-005	5.5000e-004	0.0000	8.7099	8.7099	2.1000e-003	0.0000	8.7625

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.2 Demolition - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	4.1800e-003	1.0300e-003	1.0000e-005	2.7000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.2186	1.2186	1.1000e-004	0.0000	1.2213
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.5000e-004	1.4500e-003	0.0000	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4315	0.4315	1.0000e-005	0.0000	0.4318
Total	3.2000e-004	4.3300e-003	2.4800e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.9000e-004	2.1000e-004	1.0000e-005	2.3000e-004	0.0000	1.6500	1.6500	1.2000e-004	0.0000	1.6531

3.3 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1999	0.0000	0.1999	0.1014	0.0000	0.1014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0370	0.3860	0.1889	3.5000e-004		0.0193	0.0193		0.0178	0.0178	0.0000	30.7060	30.7060	9.9300e-003	0.0000	30.9543
Total	0.0370	0.3860	0.1889	3.5000e-004	0.1999	0.0193	0.2192	0.1014	0.0178	0.1192	0.0000	30.7060	30.7060	9.9300e-003	0.0000	30.9543

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.3 Site Preparation - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	5.5000e-004	5.4400e-003	2.0000e-005	1.8700e-003	1.0000e-005	1.8800e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6179	1.6179	4.0000e-005	0.0000	1.6191
Total	7.3000e-004	5.5000e-004	5.4400e-003	2.0000e-005	1.8700e-003	1.0000e-005	1.8800e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6179	1.6179	4.0000e-005	0.0000	1.6191

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1999	0.0000	0.1999	0.1014	0.0000	0.1014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.2800e-003	0.0185	0.1853	3.5000e-004		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	30.7060	30.7060	9.9300e-003	0.0000	30.9542
Total	4.2800e-003	0.0185	0.1853	3.5000e-004	0.1999	9.0000e-005	0.2000	0.1014	9.0000e-005	0.1015	0.0000	30.7060	30.7060	9.9300e-003	0.0000	30.9542

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.3 Site Preparation - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	5.5000e-004	5.4400e-003	2.0000e-005	1.8700e-003	1.0000e-005	1.8800e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6179	1.6179	4.0000e-005	0.0000	1.6191
Total	7.3000e-004	5.5000e-004	5.4400e-003	2.0000e-005	1.8700e-003	1.0000e-005	1.8800e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6179	1.6179	4.0000e-005	0.0000	1.6191

3.4 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3866	0.0000	0.3866	0.2040	0.0000	0.2040	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2713	2.9370	2.0159	4.0000e-003		0.1275	0.1275		0.1178	0.1178	0.0000	350.8064	350.8064	0.1088	0.0000	353.5257
Total	0.2713	2.9370	2.0159	4.0000e-003	0.3866	0.1275	0.5140	0.2040	0.1178	0.3218	0.0000	350.8064	350.8064	0.1088	0.0000	353.5257

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.4 Grading - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8700e-003	5.1800e-003	0.0509	1.7000e-004	0.0175	1.2000e-004	0.0176	4.6500e-003	1.1000e-004	4.7600e-003	0.0000	15.1332	15.1332	4.2000e-004	0.0000	15.1437
Total	6.8700e-003	5.1800e-003	0.0509	1.7000e-004	0.0175	1.2000e-004	0.0176	4.6500e-003	1.1000e-004	4.7600e-003	0.0000	15.1332	15.1332	4.2000e-004	0.0000	15.1437

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3866	0.0000	0.3866	0.2040	0.0000	0.2040	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0621	0.3079	2.1453	4.0000e-003		7.2800e-003	7.2800e-003		7.2800e-003	7.2800e-003	0.0000	350.8059	350.8059	0.1088	0.0000	353.5253
Total	0.0621	0.3079	2.1453	4.0000e-003	0.3866	7.2800e-003	0.3939	0.2040	7.2800e-003	0.2113	0.0000	350.8059	350.8059	0.1088	0.0000	353.5253

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.4 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8700e-003	5.1800e-003	0.0509	1.7000e-004	0.0175	1.2000e-004	0.0176	4.6500e-003	1.1000e-004	4.7600e-003	0.0000	15.1332	15.1332	4.2000e-004	0.0000	15.1437
Total	6.8700e-003	5.1800e-003	0.0509	1.7000e-004	0.0175	1.2000e-004	0.0176	4.6500e-003	1.1000e-004	4.7600e-003	0.0000	15.1332	15.1332	4.2000e-004	0.0000	15.1437

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0219	0.2005	0.1906	3.1000e-004		0.0110	0.0110		0.0104	0.0104	0.0000	26.6383	26.6383	6.4300e-003	0.0000	26.7990
Total	0.0219	0.2005	0.1906	3.1000e-004		0.0110	0.0110		0.0104	0.0104	0.0000	26.6383	26.6383	6.4300e-003	0.0000	26.7990

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	7.9400e-003	2.1100e-003	2.0000e-005	4.8000e-004	2.0000e-005	5.0000e-004	1.4000e-004	2.0000e-005	1.5000e-004	0.0000	1.9431	1.9431	1.5000e-004	0.0000	1.9468
Worker	1.3000e-003	9.8000e-004	9.5900e-003	3.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.8530	2.8530	8.0000e-005	0.0000	2.8550
Total	1.5400e-003	8.9200e-003	0.0117	5.0000e-005	3.7800e-003	4.0000e-005	3.8200e-003	1.0200e-003	4.0000e-005	1.0500e-003	0.0000	4.7960	4.7960	2.3000e-004	0.0000	4.8017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7700e-003	0.0257	0.2008	3.1000e-004		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	26.6383	26.6383	6.4300e-003	0.0000	26.7989
Total	3.7700e-003	0.0257	0.2008	3.1000e-004		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	26.6383	26.6383	6.4300e-003	0.0000	26.7989

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	7.9400e-003	2.1100e-003	2.0000e-005	4.8000e-004	2.0000e-005	5.0000e-004	1.4000e-004	2.0000e-005	1.5000e-004	0.0000	1.9431	1.9431	1.5000e-004	0.0000	1.9468
Worker	1.3000e-003	9.8000e-004	9.5900e-003	3.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.8530	2.8530	8.0000e-005	0.0000	2.8550
Total	1.5400e-003	8.9200e-003	0.0117	5.0000e-005	3.7800e-003	4.0000e-005	3.8200e-003	1.0200e-003	4.0000e-005	1.0500e-003	0.0000	4.7960	4.7960	2.3000e-004	0.0000	4.8017

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1834	1.6787	1.7591	2.9000e-003		0.0870	0.0870		0.0818	0.0818	0.0000	249.1046	249.1046	0.0597	0.0000	250.5966
Total	0.1834	1.6787	1.7591	2.9000e-003		0.0870	0.0870		0.0818	0.0818	0.0000	249.1046	249.1046	0.0597	0.0000	250.5966

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0500e-003	0.0702	0.0186	1.8000e-004	4.5200e-003	1.3000e-004	4.6500e-003	1.3000e-003	1.2000e-004	1.4300e-003	0.0000	17.9917	17.9917	1.3400e-003	0.0000	18.0253
Worker	0.0115	8.3200e-003	0.0833	2.8000e-004	0.0308	2.1000e-004	0.0310	8.1900e-003	1.9000e-004	8.3800e-003	0.0000	25.6907	25.6907	6.8000e-004	0.0000	25.7076
Total	0.0135	0.0785	0.1019	4.6000e-004	0.0354	3.4000e-004	0.0357	9.4900e-003	3.1000e-004	9.8100e-003	0.0000	43.6823	43.6823	2.0200e-003	0.0000	43.7329

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0352	0.2402	1.8770	2.9000e-003		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004	0.0000	249.1043	249.1043	0.0597	0.0000	250.5963
Total	0.0352	0.2402	1.8770	2.9000e-003		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004	0.0000	249.1043	249.1043	0.0597	0.0000	250.5963

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.5 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0500e-003	0.0702	0.0186	1.8000e-004	4.5200e-003	1.3000e-004	4.6500e-003	1.3000e-003	1.2000e-004	1.4300e-003	0.0000	17.9917	17.9917	1.3400e-003	0.0000	18.0253
Worker	0.0115	8.3200e-003	0.0833	2.8000e-004	0.0308	2.1000e-004	0.0310	8.1900e-003	1.9000e-004	8.3800e-003	0.0000	25.6907	25.6907	6.8000e-004	0.0000	25.7076
Total	0.0135	0.0785	0.1019	4.6000e-004	0.0354	3.4000e-004	0.0357	9.4900e-003	3.1000e-004	9.8100e-003	0.0000	43.6823	43.6823	2.0200e-003	0.0000	43.7329

3.6 Paving - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0144	0.1486	0.1685	2.6000e-004		7.7900e-003	7.7900e-003		7.1700e-003	7.1700e-003	0.0000	23.0270	23.0270	7.4500e-003	0.0000	23.2132
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0144	0.1486	0.1685	2.6000e-004		7.7900e-003	7.7900e-003		7.1700e-003	7.1700e-003	0.0000	23.0270	23.0270	7.4500e-003	0.0000	23.2132

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.6 Paving - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	6.4000e-004	6.2500e-003	2.0000e-005	2.1500e-003	1.0000e-005	2.1700e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.8606	1.8606	5.0000e-005	0.0000	1.8619
Total	8.4000e-004	6.4000e-004	6.2500e-003	2.0000e-005	2.1500e-003	1.0000e-005	2.1700e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.8606	1.8606	5.0000e-005	0.0000	1.8619

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2300e-003	0.0140	0.1989	2.6000e-004		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	23.0270	23.0270	7.4500e-003	0.0000	23.2132
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.2300e-003	0.0140	0.1989	2.6000e-004		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	23.0270	23.0270	7.4500e-003	0.0000	23.2132

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.6 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	6.4000e-004	6.2500e-003	2.0000e-005	2.1500e-003	1.0000e-005	2.1700e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.8606	1.8606	5.0000e-005	0.0000	1.8619
Total	8.4000e-004	6.4000e-004	6.2500e-003	2.0000e-005	2.1500e-003	1.0000e-005	2.1700e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.8606	1.8606	5.0000e-005	0.0000	1.8619

3.7 Architectural Coating - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	9.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	2.2900e-003	2.7300e-003	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.3830	0.3830	3.0000e-005	0.0000	0.3837
Total	0.0101	2.2900e-003	2.7300e-003	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.3830	0.3830	3.0000e-005	0.0000	0.3837

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.7 Architectural Coating - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.0809	0.0809	0.0000	0.0000	0.0810
Total	4.0000e-005	3.0000e-005	2.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.0809	0.0809	0.0000	0.0000	0.0810

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	9.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-005	1.9000e-004	2.7500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.3830	0.3830	3.0000e-005	0.0000	0.3836
Total	9.8000e-003	1.9000e-004	2.7500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.3830	0.3830	3.0000e-005	0.0000	0.3836

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.7 Architectural Coating - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.0809	0.0809	0.0000	0.0000	0.0810
Total	4.0000e-005	3.0000e-005	2.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.0809	0.0809	0.0000	0.0000	0.0810

3.7 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6998					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0220	0.1514	0.1950	3.2000e-004		8.7800e-003	8.7800e-003		8.7800e-003	8.7800e-003	0.0000	27.4475	27.4475	1.7900e-003	0.0000	27.4922
Total	0.7218	0.1514	0.1950	3.2000e-004		8.7800e-003	8.7800e-003		8.7800e-003	8.7800e-003	0.0000	27.4475	27.4475	1.7900e-003	0.0000	27.4922

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.7 Architectural Coating - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-003	1.8100e-003	0.0181	6.0000e-005	6.7000e-003	4.0000e-005	6.7500e-003	1.7800e-003	4.0000e-005	1.8200e-003	0.0000	5.5849	5.5849	1.5000e-004	0.0000	5.5886
Total	2.5000e-003	1.8100e-003	0.0181	6.0000e-005	6.7000e-003	4.0000e-005	6.7500e-003	1.7800e-003	4.0000e-005	1.8200e-003	0.0000	5.5849	5.5849	1.5000e-004	0.0000	5.5886

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6998					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1900e-003	0.0138	0.1970	3.2000e-004		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	27.4475	27.4475	1.7900e-003	0.0000	27.4921
Total	0.7030	0.0138	0.1970	3.2000e-004		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	27.4475	27.4475	1.7900e-003	0.0000	27.4921

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

3.7 Architectural Coating - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-003	1.8100e-003	0.0181	6.0000e-005	6.7000e-003	4.0000e-005	6.7500e-003	1.7800e-003	4.0000e-005	1.8200e-003	0.0000	5.5849	5.5849	1.5000e-004	0.0000	5.5886
Total	2.5000e-003	1.8100e-003	0.0181	6.0000e-005	6.7000e-003	4.0000e-005	6.7500e-003	1.7800e-003	4.0000e-005	1.8200e-003	0.0000	5.5849	5.5849	1.5000e-004	0.0000	5.5886

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1875	0.7762	2.5019	9.4600e-003	0.8812	7.2200e-003	0.8884	0.2359	6.7200e-003	0.2427	0.0000	873.2563	873.2563	0.0425	0.0000	874.3192
Unmitigated	0.1875	0.7762	2.5019	9.4600e-003	0.8812	7.2200e-003	0.8884	0.2359	6.7200e-003	0.2427	0.0000	873.2563	873.2563	0.0425	0.0000	874.3192

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	630.00	630.00	630.00	2,338,336	2,338,336
Total	630.00	630.00	630.00	2,338,336	2,338,336

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	16.80	7.10	7.90	42.00	19.00	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.3456	93.3456	3.7400e-003	7.9000e-004	93.6738
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	109.6948	109.6948	4.4000e-003	9.3000e-004	110.0805
NaturalGas Mitigated	7.9400e-003	0.0679	0.0289	4.3000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	78.6250	78.6250	1.5100e-003	1.4400e-003	79.0922
NaturalGas Unmitigated	7.9400e-003	0.0679	0.0289	4.3000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	78.6250	78.6250	1.5100e-003	1.4400e-003	79.0922

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.47338e+006	7.9400e-003	0.0679	0.0289	4.3000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	78.6250	78.6250	1.5100e-003	1.4400e-003	79.0922
Total		7.9400e-003	0.0679	0.0289	4.3000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	78.6250	78.6250	1.5100e-003	1.4400e-003	79.0922

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.47338e+006	7.9400e-003	0.0679	0.0289	4.3000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	78.6250	78.6250	1.5100e-003	1.4400e-003	79.0922
Total		7.9400e-003	0.0679	0.0289	4.3000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	78.6250	78.6250	1.5100e-003	1.4400e-003	79.0922

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	510040	109.6948	4.4000e-003	9.3000e-004	110.0805
Total		109.6948	4.4000e-003	9.3000e-004	110.0805

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	434023	93.3456	3.7400e-003	7.9000e-004	93.6738
Total		93.3456	3.7400e-003	7.9000e-004	93.6738

6.0 Area Detail**6.1 Mitigation Measures Area**

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5330	0.0482	0.4861	3.0000e-004		6.0500e-003	6.0500e-003		6.0500e-003	6.0500e-003	0.0000	50.3861	50.3861	1.6900e-003	9.1000e-004	50.6993
Unmitigated	0.5330	0.0482	0.4861	3.0000e-004		6.0500e-003	6.0500e-003		6.0500e-003	6.0500e-003	0.0000	50.3861	50.3861	1.6900e-003	9.1000e-004	50.6993

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4429					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.0100e-003	0.0429	0.0182	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.6219	49.6219	9.5000e-004	9.1000e-004	49.9168
Landscaping	0.0141	5.3900e-003	0.4679	2.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003	0.0000	0.7641	0.7641	7.3000e-004	0.0000	0.7825
Total	0.5330	0.0482	0.4861	2.9000e-004		6.0500e-003	6.0500e-003		6.0500e-003	6.0500e-003	0.0000	50.3861	50.3861	1.6800e-003	9.1000e-004	50.6993

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4429					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.0100e-003	0.0429	0.0182	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.6219	49.6219	9.5000e-004	9.1000e-004	49.9168
Landscaping	0.0141	5.3900e-003	0.4679	2.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003	0.0000	0.7641	0.7641	7.3000e-004	0.0000	0.7825
Total	0.5330	0.0482	0.4861	2.9000e-004		6.0500e-003	6.0500e-003		6.0500e-003	6.0500e-003	0.0000	50.3861	50.3861	1.6800e-003	9.1000e-004	50.6993

7.0 Water Detail**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.7438	0.1344	3.3000e-003	22.0865
Unmitigated	18.9805	0.1345	3.3100e-003	23.3275

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	4.1047 / 2.58775	18.9805	0.1345	3.3100e-003	23.3275
Total		18.9805	0.1345	3.3100e-003	23.3275

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	4.1047 / 2.0702	17.7438	0.1344	3.3000e-003	22.0865
Total		17.7438	0.1344	3.3000e-003	22.0865

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.2356	0.6640	0.0000	27.8356
Unmitigated	14.9807	0.8853	0.0000	37.1141

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	73.8	14.9807	0.8853	0.0000	37.1141
Total		14.9807	0.8853	0.0000	37.1141

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	55.35	11.2356	0.6640	0.0000	27.8356
Total		11.2356	0.6640	0.0000	27.8356

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Green Hills Ranch 63 Unit Single Family - San Diego County, Annual

ATTACHMENT B

Cancer Risk – Screen 3 and DPM Health Risk (Cancer Risk) Calculations

09/28/20
15:56:41

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 13043 ***

greenhills

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = AREA
EMISSION RATE (G/(S-M**2)) = 0.453000E-08
SOURCE HEIGHT (M) = 3.0000
LENGTH OF LARGER SIDE (M) = 393.0630
LENGTH OF SMALLER SIDE (M) = 383.0600
RECEPTOR HEIGHT (M) = 1.5000
URBAN/RURAL OPTION = RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 0.000 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
10.	0.1714	6	1.0	1.0	10000.0	3.00	44.
100.	0.2174	6	1.0	1.0	10000.0	3.00	44.
200.	0.2614	6	1.0	1.0	10000.0	3.00	42.
300.	0.2970	6	1.0	1.0	10000.0	3.00	44.
400.	0.2577	6	1.0	1.0	10000.0	3.00	44.
500.	0.2188	6	1.0	1.0	10000.0	3.00	44.
600.	0.1895	6	1.0	1.0	10000.0	3.00	44.
700.	0.1675	6	1.0	1.0	10000.0	3.00	44.
800.	0.1505	6	1.0	1.0	10000.0	3.00	44.
900.	0.1373	6	1.0	1.0	10000.0	3.00	44.
1000.	0.1268	6	1.0	1.0	10000.0	3.00	44.
1100.	0.1180	6	1.0	1.0	10000.0	3.00	44.
1200.	0.1106	6	1.0	1.0	10000.0	3.00	44.
1300.	0.1041	6	1.0	1.0	10000.0	3.00	44.
1400.	0.9845E-01	6	1.0	1.0	10000.0	3.00	44.
1500.	0.9337E-01	6	1.0	1.0	10000.0	3.00	44.
1600.	0.8879E-01	6	1.0	1.0	10000.0	3.00	44.
1700.	0.8463E-01	6	1.0	1.0	10000.0	3.00	44.
1800.	0.8084E-01	6	1.0	1.0	10000.0	3.00	44.
1900.	0.7741E-01	6	1.0	1.0	10000.0	3.00	44.
2000.	0.7431E-01	6	1.0	1.0	10000.0	3.00	44.
2100.	0.7151E-01	6	1.0	1.0	10000.0	3.00	44.
2200.	0.6896E-01	6	1.0	1.0	10000.0	3.00	43.
2300.	0.6663E-01	6	1.0	1.0	10000.0	3.00	43.
2400.	0.6444E-01	6	1.0	1.0	10000.0	3.00	43.
2500.	0.6237E-01	6	1.0	1.0	10000.0	3.00	43.
2600.	0.6042E-01	6	1.0	1.0	10000.0	3.00	43.
2700.	0.5857E-01	6	1.0	1.0	10000.0	3.00	43.
2800.	0.5683E-01	6	1.0	1.0	10000.0	3.00	43.
2900.	0.5518E-01	6	1.0	1.0	10000.0	3.00	43.
3000.	0.5365E-01	6	1.0	1.0	10000.0	3.00	43.
3500.	0.4724E-01	6	1.0	1.0	10000.0	3.00	42.
4000.	0.4203E-01	6	1.0	1.0	10000.0	3.00	41.
4500.	0.3767E-01	6	1.0	1.0	10000.0	3.00	42.
5000.	0.3399E-01	6	1.0	1.0	10000.0	3.00	40.

5500.	0.3084E-01	6	1.0	1.0	10000.0	3.00	41.
6000.	0.2814E-01	6	1.0	1.0	10000.0	3.00	39.
6500.	0.2580E-01	6	1.0	1.0	10000.0	3.00	40.
7000.	0.2376E-01	6	1.0	1.0	10000.0	3.00	38.
7500.	0.2204E-01	6	1.0	1.0	10000.0	3.00	37.
8000.	0.2052E-01	6	1.0	1.0	10000.0	3.00	34.
8500.	0.1917E-01	6	1.0	1.0	10000.0	3.00	31.
9000.	0.1796E-01	6	1.0	1.0	10000.0	3.00	35.
9500.	0.1688E-01	6	1.0	1.0	10000.0	3.00	35.
10000.	0.1590E-01	6	1.0	1.0	10000.0	3.00	32.

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:
 299. 0.2970 6 1.0 1.0 10000.0 3.00 44.

 *** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
100.	0.2174	6	1.0	1.0	10000.0	3.00	44.

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.2970	299.	0.

 ** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

**Air Quality Health Risk Calculations (Worst-Case)
Greenhills (Tier IV with DPF)**

From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	0.00824
	Number of Workdays	390
	Emission per day (lb/day)	0.04225641
	Construction day (Hours)	8
	Emission Rate (Grams/Second)	0.000664658
	Project Site Size (Acres)	36.26
	Project Site Size (meters)	146739.0139
	Length of Smalles Side (meters)	383.0652867
Used as an input to AERSCREEN	Emission Rate over Grading Area	4.52953E-09

From AERSCREEN	1-hr Emission Levles (Ug/M^3)	0.297
Multiply by 0.08 for annual conversion	Concentration Annual (Ug/M^3)	0.02376

	Construction Days	Construction Days converted to years				
Duration	390	1.068493151				
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.02376	0.02376	0.02376	0.02376	0.02376	0.02376
Breathing Rate per agegroup BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000823	0.00002486	0.00001964	0.00001699	0.00000764	0.00000661
Construction Days	390	1.068493151				
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	1.068493151	1.068493151	1.068493151	1.068493151	1.068493151
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	2.74966E-07	3.54837E-06	7.12264E-07	6.16303E-07	9.36595E-08	8.10784E-08
	0.274965655	3.548374754	0.712263943	0.616302715	0.093659476	0.081078352
Cancer Risk Per Million 9-years	4.54					
Cancer Risk Per Million 30-years	4.53					
Cancer Risk Per Million 70-years	4.52					

**Air Quality Health Risk Calculations (Worst-Case)
Greenhills 100 meters (Tier IV with DPF)**

From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	0.00824
	Number of Workdays	390
	Emission per day (lb/day)	0.04225641
	Construction day (Hours)	8
	Emission Rate (Grams/Second)	0.000664658
	Project Site Size (Acres)	36.26
	Project Site Size (meters)	146739.0139
	Length of Smalles Side (meters)	383.0652867
Used as an input to AERSCREEN	Emission Rate over Grading Area	4.52953E-09

From AERSCREEN	1-hr Emission Levles (Ug/M^3)	0.2174
Multiply by 0.08 for annual conversion	Concentration Annual (Ug/M^3)	0.017392

	Construction Days	Construction Days converted to years				
Duration	390	1.068493151				
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.017392	0.017392	0.017392	0.017392	0.017392	0.017392
Breathing Rate per agegroup BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000603	0.00001820	0.00001438	0.00001244	0.00000559	0.00000484
Construction Days	390	1.068493151				
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	1.068493151	1.068493151	1.068493151	1.068493151	1.068493151
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	2.01271E-07	2.59736E-06	5.21368E-07	4.51125E-07	6.85575E-08	5.93483E-08
	0.201271156	2.597362531	0.521367614	0.451125287	0.068557475	0.059348262
Cancer Risk Per Million 9-years	3.32					
Cancer Risk Per Million 30-years	3.32					
Cancer Risk Per Million 70-years	3.31					