



Date: September 9, 2020
 To: Mr. Barry Munz, Antelope Valley Engineering, Inc.
 From: M. S. Hatch Consulting, LLC
Subject: Air Quality Study – 20th Street West Apartments, Lancaster, CA

M. S. Hatch Consulting, LLC (MSHC) appreciates the opportunity to prepare the air quality study for the proposed construction and operation of the 20th Street West Apartments for Antelope Valley Engineering, Inc. This project consists of 162 two-story apartments, a clubhouse with a pool, and resident and guest parking on approximately 11.52 acres of land, in the City of Lancaster. This air quality study includes the estimated criteria pollutant and greenhouse gas emissions from the construction and operation of the proposed project.

Executive Summary

Table 1 and Table 2 compare the estimated annual and daily emissions summaries from the construction and operation of the proposed apartment complex to the significant emission thresholds described in the Antelope Valley Air Quality Management District (AVAQMD) California Environmental Quality Act (CEQA) and Federal Conformity Guidelines, dated August 2016, included in Attachment A. The estimated emissions of criteria pollutants and greenhouse gases for each year of construction and the total operational emissions **are well below the applicable thresholds**. Greenhouse gas emissions are presented in units of carbon dioxide equivalent (CO₂e). The proposed project is not considered one of the project types that the AVAQMD CEQA Guidelines require to be evaluated for potentially exposing sensitive receptors to substantial pollutant concentrations.¹ As such, hazardous air pollutants (HAP) emissions were not calculated and the project was not evaluated for potential health risks to sensitive receptors.

Table 1. Annual Emissions Summary and Significance Thresholds

Emissions Source	Total Emissions (tons per year)						
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO ₂ e
Year 1 Construction Emissions (2021)	0.33	3.06	2.67	0.01	0.42	0.21	606
Year 2 Construction Emissions (2022)	1.01	2.78	3.11	0.01	0.40	0.17	733
Total Operational Emissions	1.22	1.79	5.47	0.02	1.22	0.35	1,856
Significant Emissions Threshold	25	25	100	25	15	12	100,000

¹ Residences, schools, daycare centers, playgrounds and medical facilities are considered sensitive receptor land uses. The following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated using significance threshold criteria number 4 (refer to the significance threshold discussion): any industrial project within 1000 feet; a distribution center (40 or more trucks per day) within 1000 feet; a major transportation project (50,000 or more vehicles per day) within 1000 feet; a dry cleaner using perchloroethylene within 500 feet; or a gasoline dispensing facility within 300 feet.

Table 2. Daily Emissions Summary and Significance Thresholds

Emissions Source	Total Emissions (pounds per day)						
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}
Year 1 Construction Emissions (2021)	4.09	45.98	29.03	0.07	6.30	3.86	7,420
Year 2 Construction Emissions (2022)	67.73	24.01	27.89	0.07	3.58	1.53	7,321
Total Operational Emissions	7.73	11.04	43.42	0.10	7.86	2.24	10,917
Significant Emissions Threshold	137	137	548	137	82	65	548,000

ROG: Reactive Organic Compounds, used interchangeably with Volatile Organic Compounds (VOC); NO_x: oxides of nitrogen; CO: Carbon monoxide; SO_x: Oxides of sulfur; PM_{2.5}: particulate matter less than 2.5 micrometers in diameter; PM₁₀: particulate matter less than 10 micrometers in diameter; CO_{2e}: Carbon dioxide equivalent

Project Description

The proposed project includes the construction of 162 two-story apartments, resident and guest parking, and a clubhouse with a pool on 11.52 acres of land. The project site is currently a vacant lot located on the east side of 20th Street West and south of West Avenue I in Lancaster, CA. The site location is included in Figure 1 and the proposed site plan is included in Figure 2.

Figure 1. Regional Vicinity

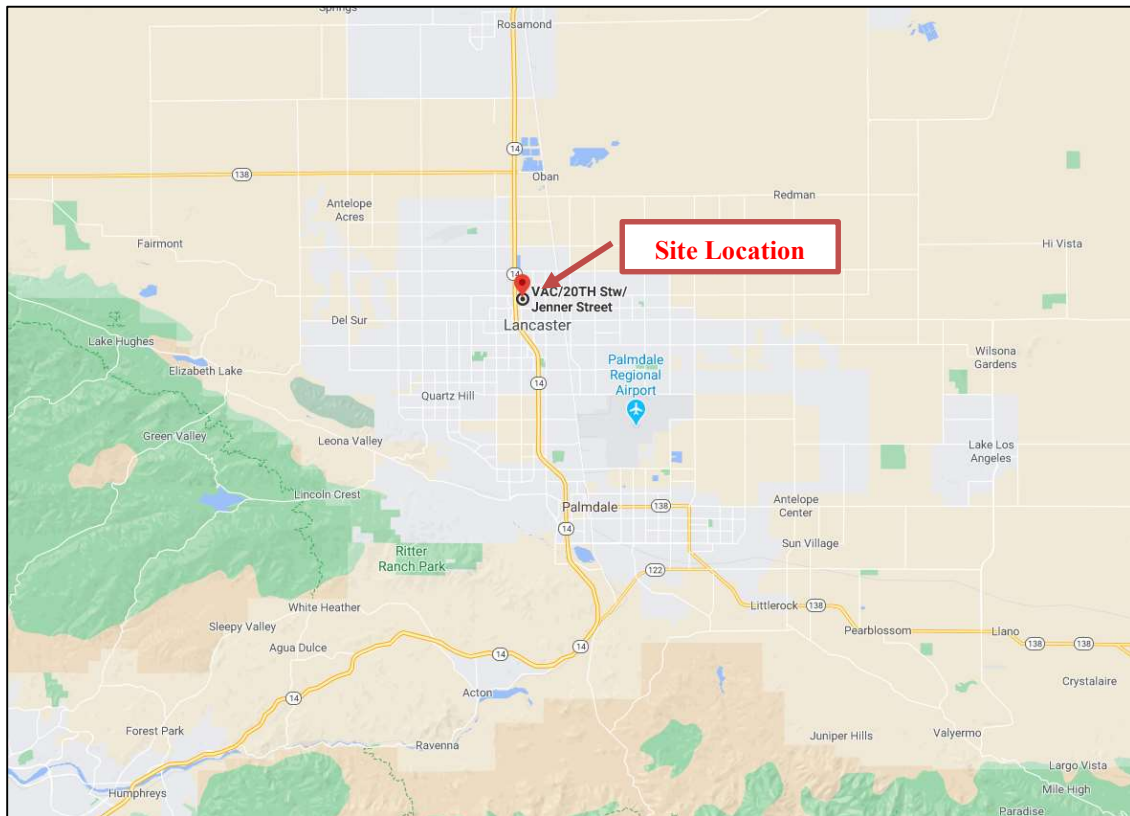
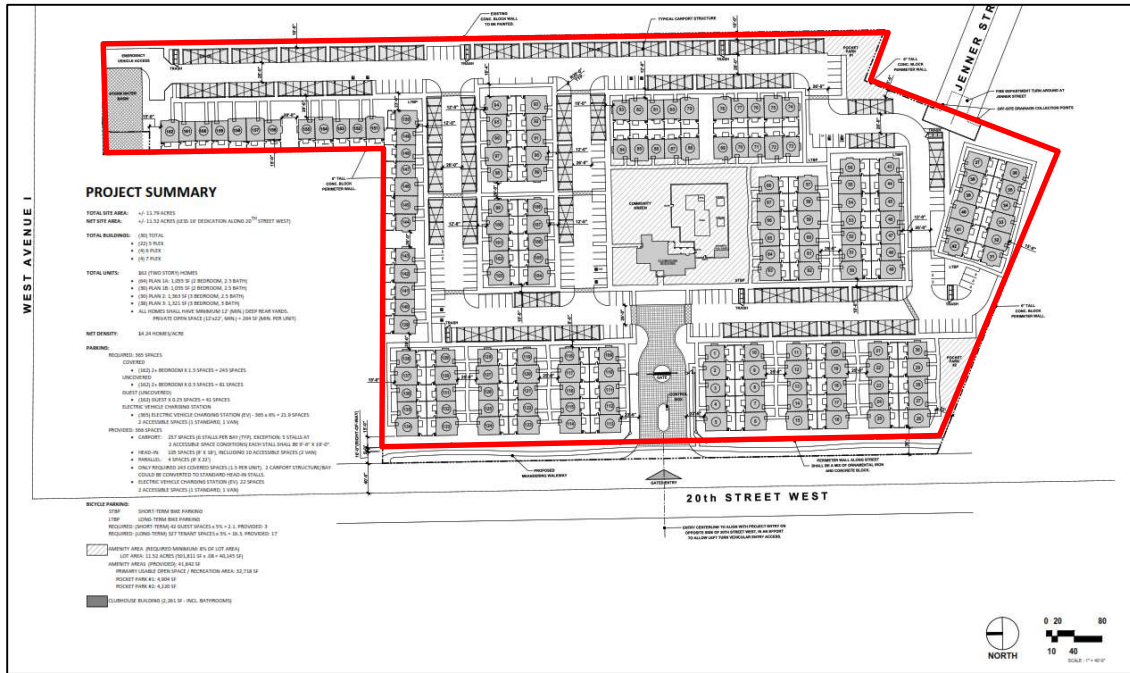


Figure 2. Site Plan – Proposed Apartment Complex - Lancaster, CA



Sources of Emissions

The emissions associated with the proposed project consist of construction and operational emissions from the apartment complex. Construction emissions are temporary and include emissions of criteria pollutants and greenhouse gases from construction activities during site preparation, grading, paving, building construction, and the application of architectural coatings. Operational emissions consist of area sources (i.e., re-applying architectural coatings, consumer products, fireplaces, and landscaping equipment), energy use (i.e., electricity and natural gas), mobile sources (e.g., commuting), solid waste disposal, and water and wastewater use (i.e., supplying and treating water and wastewater).

Emissions Estimates

Table 3 and 4 present the annual and daily emissions summaries from the construction and operation of the proposed project, respectively. Emissions were estimated using CalEEMod Version 2016.3.2. The detailed emissions model outputs are included in Attachment B.

This project is not considered one of the project types that the AVAQMD CEQA Guidelines require to be evaluated for potentially exposing sensitive receptors to substantial pollutant concentrations. As such, HAP emissions were not calculated, and the project was not evaluated for potential health risks to sensitive receptors.

Table 3. Annual Construction and Operational Emissions Summary

Emissions Source	Total Emissions (tons per year)						
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}
Construction Emissions							
Year 1 Construction Emissions (2021)	0.33	3.06	2.67	0.01	0.42	0.21	606
Year 2 Construction Emissions (2022)	1.01	2.78	3.11	0.01	0.40	0.17	733
Operational Emissions							
Area Sources	0.86	0.01	1.20	< 0.01	0.01	0.01	2
Energy	0.01	0.12	0.05	< 0.01	0.01	0.01	362
Mobile Sources	0.34	1.65	4.21	0.01	1.20	0.33	1,339
Waste	N/A	N/A	N/A	N/A	0.00	0.00	43
Water	N/A	N/A	N/A	N/A	0.00	0.00	110
Total Operational Emissions	1.22	1.79	5.47	0.02	1.22	0.35	1,856
Significant Emissions Threshold	25	25	100	25	15	12	100,000

Table 4. Daily Construction and Operational Emissions Summary

Emissions Source	Total Emissions (pounds per day)						
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}
Construction Emissions							
Year 1 Construction Emissions (2021)	4.09	45.98	29.03	0.07	6.30	3.86	7,420
Year 2 Construction Emissions (2022)	67.73	24.01	27.89	0.07	3.58	1.53	7,321
Operational Emissions							
Area Sources	4.94	0.15	13.38	< 0.01	0.07	0.07	25
Energy	0.08	0.67	0.28	< 0.01	0.05	0.05	858
Mobile	2.72	10.21	29.75	0.10	7.73	2.11	10,034
Waste	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Water	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Operational Emissions	7.73	11.04	43.42	0.10	7.86	2.24	10,917
Significant Emissions Threshold	137	137	548	137	82	65	548,000

ROG: Reactive Organic Compounds, used interchangeably with Volatile Organic Compounds (VOC); NO_x: oxides of nitrogen; CO: Carbon monoxide; SO_x: Oxides of sulfur; PM_{2.5}: particulate matter less than 2.5 micrometers in diameter; PM₁₀: particulate matter less than 10 micrometers in diameter; CO_{2e}: Carbon dioxide equivalent

Emissions Calculation Methodology

Construction and operational emissions were based on five CalEEMod land use types: *Apartments Low Rise, Recreational Swimming Pool, Parking Lot, Other Asphalt Surfaces, and City Park*. A discussion on the land use types that were used for the emissions modeling is included below.

CalEEMod Land Use Type: Apartments Low Rise

The *Apartments Low Rise* land use type was used to model the emissions associated with the 162 two-story apartment homes and the 327 parking spots allotted for residents.² The square footage (190,258 sq. ft.) and acreage (3.08 acres) were provided by Antelope Valley Engineering, Inc.

CalEEMod Land Use Type: Recreational Swimming Pool

The *Recreational Swimming Pool* land use type was used to model the emissions associated with the clubhouse and swimming pool. The square footage of the swimming pool (2,000 sq. ft.) and club house (2,261 sq. ft.), and the combined acreage (0.10 acres) were provided by Antelope Valley Engineering, Inc.

CalEEMod Land Use Type: Parking Lot

The *Parking Lot* land use type was used to model the emissions associated with the 42 guest parking spaces. The guest parking acreage (0.11 acres) was provided by Antelope Valley Engineering, Inc.

CalEEMod Land Use Type: Other Asphalt Surfaces

The *Other Asphalt Surfaces* land use type was used to model the emissions associated with the drive aisle within the apartment complex. The drive aisle square footage (84,138 sq. ft.) was provided by Antelope Valley Engineering, Inc.³

CalEEMod Land Use Type: City Park

The *City Park* land use type was used to model the emissions associated with the apartment complex's open space (e.g., recreation area, pocket parks). The acreage (6.30 acres) was based on the difference between the total net site area (11.52 acres) and the areas designated for the other land use types.

Construction Emissions

Construction emissions were calculated using CalEEMod defaults and input provided by Antelope Valley Engineering, Inc. The client reviewed and updated the list of construction equipment and anticipated construction schedule.

Table 5 provides the anticipated construction schedule. Antelope Valley Engineering, Inc. provided the proposed start date (4/1/2021) and end date (12/30/2022) for the project and indicated that work would be conducted five days per week. Additionally, Antelope Valley Engineering, Inc. estimated that the *Grading*

² Based on the CalEEMod User's Guide dated November 2017, no separate parking land use needs to be identified for residential land uses because parking is already included in the calculation.

³ Antelope Valley Engineering, Inc. provided the acreage for the driving aisle via email on 8/31/2020.

phase would be 45 days.⁴ The *Building Construction* phase was extended to complete the project within the anticipated end date. The durations of the remaining construction phases (i.e., *Site Preparation*, *Paving*, *Architectural Coating*) were based on CalEEMod default values.

Table 6 provides the anticipated number of equipment that will be used during each construction phase, the hours per day the equipment will be operated, and the horsepower of the equipment. The values were based on CalEEMod default values and input provided by Antelope Valley Engineering, Inc.⁵

Based on input from Antelope Valley Engineering, Inc., this project will require 1,000 cubic yards of material export during the *Site Preparation* phase and 2,500 cubic yards of material import during the *Grading* phase; as such, the emissions for material haul trips were included in the construction emissions. For fugitive dust emissions, CalEEMod defaults do not include any control of fugitive dust from project construction sites. AVAQMD Rule 403 requires that fugitive dust from any “active operation, open storage pile, or disturbed surface area” be controlled so that the no presence of dust remains visible beyond the property line. To meet this requirement, the standard operation is watering active sites three times per day. Although the addition of watering for dust control is listed as a mitigation measure in CalEEMod, within the AVAQMD this is a requirement, and is therefore included.

For architectural coating operations, VOC emissions were calculated based on the assumption that the coatings would be compliant with the VOC content limits of AVAQMD Rule 1113.⁶

Table 5. Construction Schedule

Construction Phase	Start Date	End Date	Days/week	Total Days
Demolition	N/A	N/A	N/A	N/A
Site Preparation	4/1/2021	4/14/2021	5	10
Grading	4/15/2021	6/16/2021	5	45
Building Construction	6/17/2021	11/6/2022	5	362
Paving	11/7/2022	12/2/2022	5	20
Architectural Coating	12/3/2022	12/30/2022	5	20

⁴ Antelope Valley Engineering, Inc. provided the *Grading* phase duration via email 9/4/2020.

⁵ The number of rubber-tired dozers (2) and tractors/loaders/backhoes (2) for the *Site Preparation* phase, and excavators (1) for the *Grading* phase were updated from the CalEEMod default values based on Antelope Valley Engineering, Inc. email on 9/4/2020.

⁶ For building coatings, assumed to be 90% flat paints (50 g/L) and 10% non-flat paints (100 g/L). For the parking lot coatings, assumed to be compliant with the Traffic Marking Coating category (100 g/L). VOC limits based on AVAQMD Rule 1113.

Table 6. Construction Equipment

Construction Phase	Equipment	Number of Equipment	Hours per day	Horsepower
Site Preparation	Rubber Tired Dozers	2	8	247
	Tractors/Loaders/Backhoes	2	8	97
Grading	Excavators	1	8	158
	Graders	1	8	187
	Rubber Tired Dozers	1	8	247
	Scrapers	2	8	367
	Tractors/Loaders/Backhoes	2	8	97
Building Construction	Cranes	1	7	231
	Forklifts	3	8	89
	Generator Sets	1	8	84
	Tractors/Loaders/Backhoes	3	7	97
	Welders	1	8	46
Paving	Pavers	2	8	130
	Paving Equipment	2	8	132
	Rollers	2	8	80
Architectural Coating	Air Compressors	1	6	78

Operational Emissions

Operational emissions consist of area sources (i.e., re-applying architectural coatings, consumer products, fireplaces, and landscaping equipment), energy use (i.e., electricity and natural gas), mobile sources (e.g., commuting), solid waste disposal, and water and wastewater use (i.e., supplying and treating water and wastewater).

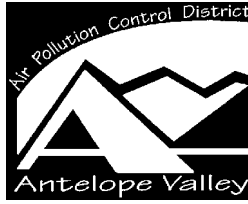
For area-source emissions, it was determined that woodstoves and fireplaces would not be installed. For architectural coating operations (i.e., re-applying coatings), VOC emissions were calculated based on the assumption that the coatings would be compliant with the VOC content limits of AVAQMD Rule 1113.⁷ For mobile emissions, it was assumed that the *Recreational Swimming Pool* would be used by apartment residents and there would be no external vehicle trips to the pool. All other operational emissions sources were calculated using CalEEMod default factors.

⁷ For building coatings, assumed to be 90% flat paints (50 g/L) and 10% non-flat paints (100 g/L). For the parking lot coatings, assumed to be compliant with the Traffic Marking Coating category (100 g/L). VOC limits based on AVAQMD Rule 1113.

Findings

The estimated emissions of criteria pollutants and greenhouse gases for each year of construction and the total operational emissions **are well below the applicable AVAQMD Significant Emissions Thresholds**; therefore, this project does not have a significant air quality impact on the environment. In addition, this project is not expected to expose sensitive receptors to substantial pollutant concentrations. Since the construction and operational emissions are below the significance thresholds, emissions mitigation measures are not required.

**ATTACHMENT A – Antelope Valley AQMD California Environmental Quality Act
(CEQA) and Federal Conformity Guidelines**



Antelope Valley AQMD

California Environmental Quality Act
(CEQA)

and

Federal Conformity

Guidelines

August 2016

AVAQMD Planning, Rule-making and Grants Section
AVAQMD Air Monitoring Section

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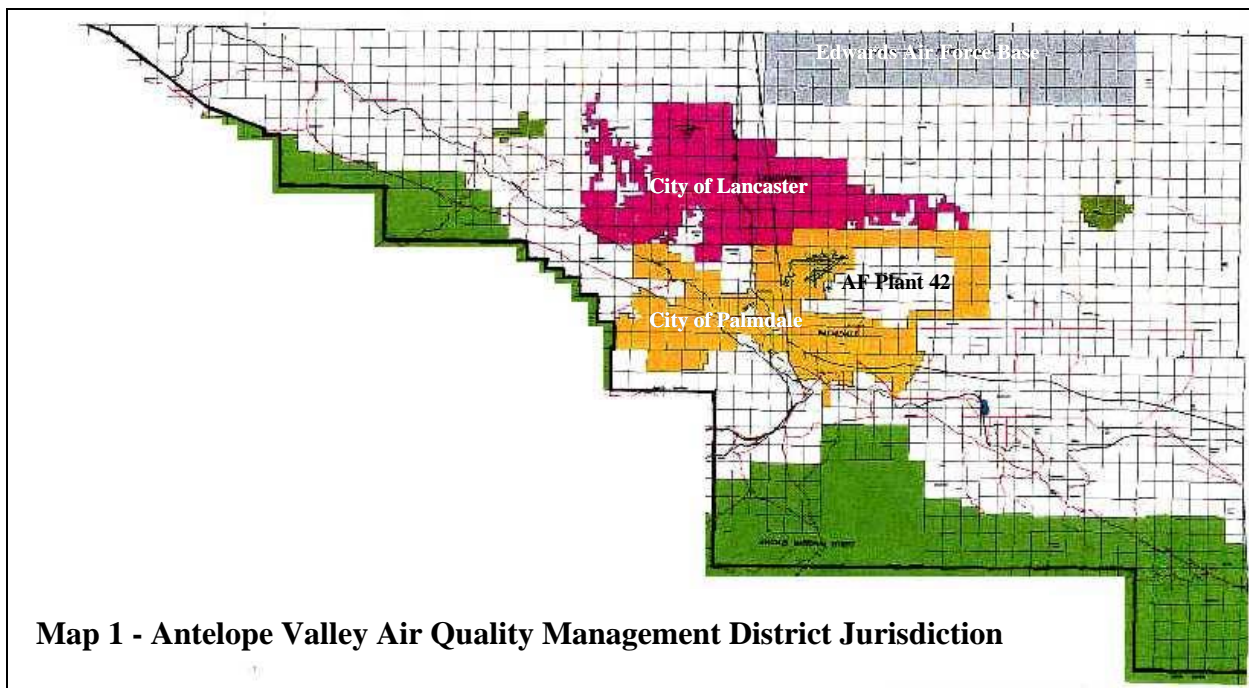
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Background

Under the California Environmental Quality Act (CEQA), the AVAQMD (District) is an expert commenting agency on air quality and related matters within its jurisdiction (or impacting on its jurisdiction). The District has dedicated resources to reviewing projects to ensure that they will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan. The District has adopted a federal attainment plan for ozone pursuant to the Federal Clean Air Act.

Purpose

These Guidelines are intended to assist persons preparing environmental analysis or review documents for any project within the jurisdiction of the District by providing background information and guidance on the preferred analysis approach.



Jurisdiction

The District has jurisdiction over the northern, desert portion of Los Angeles County (please refer to Map 1). This region includes the incorporated cities of Lancaster and Palmdale, Air Force Plant 42, and the southern portion of Edwards Air Force Base. The Kern County-Los Angeles County boundary forms the northern boundary of the District; the San Bernardino-Los Angeles County boundary forms the eastern boundary of the District.

Non-attainment Designations and Classification Status

The United States Environmental Protection Agency and the California Air Resources Board have designated portions of the District non-attainment for a variety of pollutants, and some of those designations have an associated classification. Please refer to Table 1 for a chart of these designations and classifications.

Table 1 – AVAQMD Designations and Classifications

Ambient Air Quality Standard	AVAQMD
One-hour Ozone (Federal) – standard has been revoked, this is historical information only	Proposed attainment in 2014; historical classification Severe-17
Eight-hour Ozone (Federal 84 ppb (1997))	Subpart 2 Nonattainment; classified Severe-15
Eight-hour Ozone (Federal 75 ppb (2008))	Nonattainment, classified Severe-15
Eight-hour Ozone (Federal 70 ppb (2015))	Expected nonattainment; classification to be determined
Ozone (State)	Nonattainment; classified Extreme
PM ₁₀ 24-hour (Federal)	Unclassifiable/attainment
PM _{2.5} Annual (Federal)	Unclassified/attainment
PM _{2.5} 24-hour (Federal)	Unclassified/attainment
PM _{2.5} (State)	Unclassified
PM ₁₀ (State)	Nonattainment
Carbon Monoxide (State and Federal)	Attainment
Nitrogen Dioxide (State and Federal)	Attainment/unclassified
Sulfur Dioxide (State and Federal)	Attainment/unclassified
Lead (State and Federal)	Attainment
Particulate Sulfate (State)	Unclassified
Hydrogen Sulfide (State)	Unclassified
Visibility Reducing Particles (State)	Unclassified

Attainment Plans

The District has adopted a single attainment plan for ozone. Please refer to Table 2 for information regarding this attainment plan.

Table 2 – AVAQMD Attainment Plans

Name of Plan	Date of Adoption	Standard(s) Targeted	Applicable Area	Pollutant(s) Targeted	Attainment Date*
AVAQMD 2004 Ozone Attainment Plan (State and Federal)	4/2004	Federal one hour ozone	Entire District	NO _x and VOC	2007
AVAQMD Federal 8-Hour Ozone Attainment Plan	5/20/2008	Federal eight hour ozone (84 ppb)	Entire District	NO _x and VOC	2019 (revised from 2021)

*Note: A historical attainment date given in an attainment plan does not necessarily mean that the affected area has been re-designated to attainment; please refer to Table 1.

Rules and Regulations

The District maintains a set of Rules and Regulations to improve air quality and maintain good air quality. Please contact the District to obtain a copy of the District rulebook, or visit www.avaqmd.ca.gov.

Recommended Environmental Setting Elements

Air Quality Data

The District gathers a variety of air quality data at the Lancaster monitoring site. Table 3 details the data available from the District for this site.

Table 3 - Available Air Quality Data

Site	Address	Pollutants	Dates
Lancaster	W. Ponderosa	O ₃ , NO _x , CO, PM ₁₀ (Hi-Vol and TEOM)	7/1/97 to 11/01
Lancaster	W. Ponderosa	PM _{2.5}	1/1/99 to 11/01
Lancaster	43301 Division St.	O ₃ , NO _x , CO, PM ₁₀ (hourly), PM _{2.5}	11/01 to present

Meteorological Data

A variety of meteorological data is available from the District for the Lancaster site. Table 4 contains a list of the data available for the Lancaster site.

Table 4 - Available Meteorological Data

Site	Address	Data	Dates
Lancaster	W. Ponderosa	Wind speed/direction, pressure, temperature, humidity	7/1/97 to 11/01
Lancaster	43301 Division St.	Wind speed/direction, pressure, temperature, humidity	11/01 to present

Topography and Climate Discussion

The District covers a western portion of the Mojave Desert Air Basin (MDAB). The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevadas in the north by the Tehachapi Pass (3,800 ft elevation). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 ft).

During the summer the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. MDAB annual average precipitation is presented in Table 5; the data displayed is 1981-2010 averages from the NOAA National Climate Data Center. The MDAB is classified as a dry-hot desert climate (BWh), with portions classified as dry-very hot desert (BWwh), to indicate at least three months have maximum average temperatures over 100.4° F.

Table 5 - MDAB Average Annual Precipitation

Site	County	District	Precipitation (inches)
Baker	San Bernardino	MDAQMD	4.48
Barstow Daggett Airport	San Bernardino	MDAQMD	4.06
Barstow	San Bernardino	MDAQMD	5.30
Blythe Airport	Riverside	MDAQMD	3.77
Desert Center 2 NNE	Riverside	SCAQMD	3.92
Eagle Mountain	Riverside	SCAQMD	4.10
Goldstone Echo Number 2	San Bernardino	MDAQMD	5.88
Joshua Tree	San Bernardino	MDAQMD	5.11
Lancaster Wm J Fox Field	Los Angeles	AVAQMD	7.38
Mitchell Caverns	San Bernardino	MDAQMD	11.50
Mojave	Kern	EKAPCD	6.67
Mountain Pass 1 SE	San Bernardino	MDAQMD	9.94
Needles Airport	San Bernardino	MDAQMD	4.62
Palmdale Airport	Los Angeles	AVAQMD	8.30
Palmdale	Los Angeles	AVAQMD	7.40

Site	County	District	Precipitation (inches)
Parker Reservoir	San Bernardino	MDAQMD	6.16
Pearblossom	Los Angeles	AVAQMD	6.73
Randsburg	Kern	EKAPCD	7.26
Trona	San Bernardino	MDAQMD	3.88
Twentynine Palms	San Bernardino	MDAQMD	4.46
Victorville Pump Plant	San Bernardino	MDAQMD	6.15
Wrightwood	Los Angeles	AVAQMD	22.61

Recommended Impacts Discussion Elements

Direct Impacts

Direct impacts are the result of the project itself (from its construction and operation), in the form of project activity and trips generated by the project. For example, in the case of a subdivision project, construction emissions (equipment exhaust, wind erosion, vehicle exhaust), housing use activity (natural gas consumption) and trips to and from the housing (vehicle exhaust, tire wear) represent direct impacts. In the case of a new mine project, construction emissions (equipment exhaust, wind erosion, vehicle exhaust), material handling (drilling, blasting, transfers, crushing, screening, bagging), operational emissions (wind erosion, vehicle travel, vehicle exhaust, tire wear), and employee/customer/delivery travel (vehicle exhaust, tire wear) represent direct impacts.

Indirect Impacts

Indirect impacts are the result of changes that would not occur without the project. In the case of a subdivision project, indirect impacts on the surrounding community can be generated in many ways: nearby construction of roadways (or roadway modifications) and other infrastructure to support the subdivision, construction and operation of new commercial/retail establishments, changes in traffic/circulation patterns that result in increased congestion/delays, etc. In the case of a new mine project, indirect impacts can be generated by nearby construction of infrastructure to support the mine, housing constructed and/or occupied by mine employees, changes in traffic/circulation patterns that result in increased congestion/delays, etc.

Cumulative Impacts

Cumulative impacts are similar to direct and indirect impacts of the project, which the project contributes to. In the case of a subdivision project, a given project has a cumulative impact with all other subdivision projects, from the standpoint of each type of impact (cumulative construction emissions, residential natural gas consumption, solvent use, transportation emissions, congestion, etc.). Similarly, a new mine project has a cumulative impact with all other mining projects, from the standpoint of each type of impact (cumulative construction emissions, diesel equipment emissions, blasting emissions, fugitive emissions, transportation, congestion, etc.).

Conformity Impacts

A project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable District rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. An example of a non-conforming project would be one that increases the gross number of dwelling units, increases the number of trips, and/or increases the overall vehicle miles traveled in an affected area (relative to the applicable land use plan).

Sensitive Receptor Land Uses

Residences, schools, daycare centers, playgrounds and medical facilities are considered sensitive receptor land uses. The following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated using significance threshold criteria number 4 (refer to the significance threshold discussion):

- Any industrial project within 1000 feet;
- A distribution center (40 or more trucks per day) within 1000 feet;
- A major transportation project (50,000 or more vehicles per day) within 1000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.

Recommended Substantiation Discussion Elements

For projects applying the emissions-based significance thresholds, project emissions quantification is required. In addition the environmental documentation must include support for the quantification methodology used, including emission factors, emission factors source, assumptions, and sample calculations where necessary. For projects using a calculation tool such as CalEEMod or URBEMIS, the support section must specify the inputs and settings used for the evaluation.

Significance Thresholds

Any project is significant if it triggers or exceeds the most appropriate evaluation criteria. The District will clarify upon request which threshold is most appropriate for a given project; in general, the emissions comparison (criteria number 1) is sufficient:

1. Generates total emissions (direct and indirect) in excess of the thresholds given in Table 6;
2. Generates a violation of any ambient air quality standard when added to the local background;
3. Does not conform with the applicable attainment or maintenance plan(s)¹;

¹ A project is deemed to not exceed this threshold, and hence not be significant, if it is consistent with the existing land use plan. Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold.

4. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.*

**Refer to the Sensitive Receptor Land Use discussion above*

A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation. Note that the emission thresholds are given as a daily value and an annual value, so that a multi-phased project (such as a project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value.

Table 6 – Significant Emissions Thresholds

Criteria Pollutant	Annual Threshold (tons)	Daily Threshold (pounds)
Greenhouse Gases (CO ₂ e)	100,000	548,000
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO _x)	25	137
Volatile Organic Compounds (VOC)	25	137
Oxides of Sulfur (SO _x)	25	137
Particulate Matter (PM ₁₀)	15	82
Particulate Matter (PM _{2.5})	12	65
Hydrogen Sulfide (H ₂ S)	10	54
Lead (Pb)	0.6	3

District Contacts

If an address is not listed, please use the general address, to the attention of the listed individual.

AVAQMD General and Rulebook	Crystal Goree (661) 723-8070 x1 Mailing and Physical Address: 43301 Division St., Suite 206 Lancaster, CA 93535-4649
Planning and Rules	Tracy Walters (760) 245-1661 x6122
Air Quality and Meteorological Data	Orlando Salinas (760) 245-1661 x1810
CEQA and Conformity	Alan De Salvio (760) 245-1661 x6726
Permitting	Bret Banks (661) 723-8070 x2

Appendix A – Basic Definitions of Major Air Pollutants

Technical and/or legal definitions exist for many of these pollutants, depending on context. The following definitions are for general, introductory purposes only:

Carbon Dioxide (CO₂) – Common product of combustion. Not a criteria pollutant, but considered an important “greenhouse gas.” Important on a national or global scale.

Carbon Monoxide (CO) – Common product of incomplete combustion. A criteria pollutant with state and federal standards. Not a primary photochemical reaction compound, but involved in photochemical reactions. Dissipates rapidly, and is therefore only important on a local scale near sources.

Criteria Pollutants – Those air pollutants specifically identified for control under the Federal Clean Air Act (currently six: carbon monoxide, nitrogen oxides, lead, sulfur oxides, ozone and particulates).

Lead (Pb) – A heavy metal, present in the environment mainly due to historical use in motor vehicle fuel. Primarily associated with lead smelting operations. A criteria pollutant with state and federal standards. Primarily of concern near sources.

Oxides of Nitrogen (NO_x) – Common product of combustion in the presence of nitrogen. Includes NO₂, which is a criteria pollutant with state and federal standards. Locally and regionally important due to its involvement in the photochemical formation of ozone.

Oxides of Sulfur (SO_x) – Common product of combustion in the presence of sulfur. Associated primarily with diesel and coal burning. Includes SO₂, a criteria pollutant with state and federal standards. Primarily of concern near sources.

Ozone (O₃) – A gas mainly produced by a photochemical reaction between reactive organic gases and oxides of nitrogen in the presence of sunlight (also produced by molecular oxygen in the presence of ultraviolet light or electrical discharge). A strong oxidant that is damaging at ground level but necessary at high altitude (in the stratosphere, where it absorbs dangerous ultraviolet light). Also considered an important greenhouse gas. A criteria pollutant with state and federal standards.

Particulate Matter (TSP or PM₃₀) – Solid or liquid matter suspended in the atmosphere, excluding water. Includes aerosols and droplets that form in the atmosphere. Locally and regionally important.

Reactive/Volatile Organic Compounds/Gases (ROG, VOC, NMOG, NMOC) – A portion of total organic compounds or gases, excludes methane, ethane and acetone (due to low photochemical reactivity). “ROG” is generally used by the California Air Resources Board, “VOC” is generally used by the United States Environmental Protection Agency, but all four terms are interchangeable for most uses. Regionally important due to its involvement in the photochemical reaction that produces ozone.

Respirable Particulate Matter (coarse or PM₁₀, and fine or PM_{2.5}) – That portion of particulate matter that tends to penetrate into the human lung. The subscript refers to aerodynamic diameter. Criteria pollutants with state and federal standards. Locally and regionally important.

Total Organic Compounds/Gases (TOC or TOG) – Compounds containing at least one atom of carbon, except carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and metallic carbonates. Primarily methane in the atmosphere, a “greenhouse gas.”

ATTACHMENT B – CalEEMod Emissions Model Output

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Annual

Air Quality Study - 20th Street West Apartments, Lancaster, CA
Antelope Valley APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	84.14	1000sqft	1.93	84,138.00	0
Parking Lot	42.00	Space	0.11	5,040.00	0
City Park	6.30	Acre	6.30	274,428.00	0
Recreational Swimming Pool	2.00	1000sqft	0.10	2,000.00	0
Apartments Low Rise	162.00	Dwelling Unit	3.08	190,258.00	463

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Annual

Project Characteristics -

Land Use - Information provided by client.

Construction Phase - Schedule adjusted to the start and end date provided on the data request form. The duration of the grading phase (45 days) was provided by client via email on 9/4/2020.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Amount of excavators (1) for the Grading phase was provided by client via email on 9/4/2020.

Off-road Equipment -

Off-road Equipment - Amount of rubber tired dozers (2) and tractors/loaders/backhoes (2) for the Site Preparation phase provided by client on 9/4/2020.

Trips and VMT -

Grading - Values based on client input on the data request form.

Architectural Coating - VOC limits from AVAQMD Rule 1113. For the building, assumes 90% flat paint (50 g/L) and 10% non-flat (100 g/L). For parking lot coatings, assumed to be compliant with the Traffic Marking Coating category VOC limit of 100 g/L.

Vehicle Trips - No non-resident trips expected, assumed the pool would be primarily used by residents.

Woodstoves - Based on client input on the data request form, no woodstoves or fireplaces will be installed.

Area Coating - VOC limits from AVAQMD Rule 1113. For the building, assumes 90% flat paint (50 g/L) and 10% non-flat (100 g/L). For parking lot coatings, assumed to be compliant with the Traffic Marking Coating category VOC limit of 100 g/L.

Construction Off-road Equipment Mitigation - Assumes that construction site will be watered 3 times per day to be in compliance with AVAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	55.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	55.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	55.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	55.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	55
tblAreaCoating	Area_EF_Nonresidential_Interior	250	55
tblAreaCoating	Area_EF_Parking	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	55

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tblAreaCoating	Area_EF_Residential_Interior	250	55
tblConstructionPhase	NumDays	300.00	362.00
tblConstructionPhase	NumDays	30.00	45.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	89.10	0.00
tblFireplaces	NumberNoFireplace	16.20	0.00
tblFireplaces	NumberWood	56.70	0.00
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialImported	0.00	2,500.00
tblLandUse	LandUseSquareFeet	84,140.00	84,138.00
tblLandUse	LandUseSquareFeet	16,800.00	5,040.00
tblLandUse	LandUseSquareFeet	162,000.00	190,258.00
tblLandUse	LotAcreage	0.38	0.11
tblLandUse	LotAcreage	0.05	0.10
tblLandUse	LotAcreage	10.13	3.08
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblWoodstoves	NumberCatalytic	8.10	0.00
tblWoodstoves	NumberNoncatalytic	8.10	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Annual

2.0 Emissions Summary

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	0.3296	3.0604	2.6737	6.7100e-003	0.4538	0.1192	0.5730	0.1676	0.1111	0.2787	0.0000	603.2838	603.2838	0.0915	0.0000	605.5721
2022	1.0092	2.7843	3.1108	8.1100e-003	0.3012	0.0987	0.3998	0.0813	0.0928	0.1741	0.0000	730.9589	730.9589	0.0846	0.0000	733.0726
Maximum	1.0092	3.0604	3.1108	8.1100e-003	0.4538	0.1192	0.5730	0.1676	0.1111	0.2787	0.0000	730.9589	730.9589	0.0915	0.0000	733.0726

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	0.3296	3.0604	2.6737	6.7100e-003	0.2979	0.1192	0.4171	0.0980	0.1111	0.2091	0.0000	603.2834	603.2834	0.0915	0.0000	605.5717
2022	1.0092	2.7843	3.1108	8.1100e-003	0.3012	0.0987	0.3998	0.0813	0.0928	0.1741	0.0000	730.9585	730.9585	0.0846	0.0000	733.0723
Maximum	1.0092	3.0604	3.1108	8.1100e-003	0.3012	0.1192	0.4171	0.0980	0.1111	0.2091	0.0000	730.9585	730.9585	0.0915	0.0000	733.0723

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	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	20.65	0.00	16.03	27.95	0.00	15.37	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2021	6-30-2021	1.4319	1.4319
2	7-1-2021	9-30-2021	0.9744	0.9744
3	10-1-2021	12-31-2021	0.9709	0.9709
4	1-1-2022	3-31-2022	0.8663	0.8663
5	4-1-2022	6-30-2022	0.8796	0.8796
6	7-1-2022	9-30-2022	0.8892	0.8892
		Highest	1.4319	1.4319

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	0.8639	0.0139	1.2044	6.0000e-005		6.6600e-003	6.6600e-003		6.6600e-003	6.6600e-003	0.0000	1.9673	1.9673	1.9000e-003	0.0000	2.0147
Energy	0.0143	0.1220	0.0519	7.8000e-004		9.8600e-003	9.8600e-003		9.8600e-003	9.8600e-003	0.0000	360.6931	360.6931	0.0118	4.4600e-003	362.3176
Mobile	0.3419	1.6496	4.2129	0.0145	1.1889	0.0104	1.1993	0.3188	9.7000e-003	0.3285	0.0000	1,337.2419	1,337.2419	0.0526	0.0000	1,338.5563
Waste						0.0000	0.0000		0.0000	0.0000	17.5506	0.0000	17.5506	1.0372	0.0000	43.4809
Water						0.0000	0.0000		0.0000	0.0000	3.3861	94.6641	98.0502	0.3517	9.0200e-003	109.5308
Total	1.2201	1.7854	5.4692	0.0154	1.1889	0.0269	1.2159	0.3188	0.0262	0.3450	20.9367	1,794.5665	1,815.5032	1.4552	0.0135	1,855.9003

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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	0.8639	0.0139	1.2044	6.0000e-005		6.6600e-003	6.6600e-003		6.6600e-003	6.6600e-003	0.0000	1.9673	1.9673	1.9000e-003	0.0000	2.0147
Energy	0.0143	0.1220	0.0519	7.8000e-004		9.8600e-003	9.8600e-003		9.8600e-003	9.8600e-003	0.0000	360.6931	360.6931	0.0118	4.4600e-003	362.3176
Mobile	0.3419	1.6496	4.2129	0.0145	1.1889	0.0104	1.1993	0.3188	9.7000e-003	0.3285	0.0000	1,337.2419	1,337.2419	0.0526	0.0000	1,338.5563
Waste						0.0000	0.0000		0.0000	0.0000	17.5506	0.0000	17.5506	1.0372	0.0000	43.4809
Water						0.0000	0.0000		0.0000	0.0000	3.3861	94.6641	98.0502	0.3517	9.0200e-003	109.5308
Total	1.2201	1.7854	5.4692	0.0154	1.1889	0.0269	1.2159	0.3188	0.0262	0.3450	20.9367	1,794.5665	1,815.5032	1.4552	0.0135	1,855.9003

	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/14/2021	5	10	
2	Grading	Grading	4/15/2021	6/16/2021	5	45	
3	Building Construction	Building Construction	6/17/2021	11/6/2022	5	362	
4	Paving	Paving	11/7/2022	12/2/2022	5	20	
5	Architectural Coating	Architectural Coating	12/3/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 2.04

Residential Indoor: 385,272; Residential Outdoor: 128,424; Non-Residential Indoor: 3,392; Non-Residential Outdoor: 1,131; Striped Parking Area: 5,351 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	1	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

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
Site Preparation	4	10.00	0.00	125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	313.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	270.00	77.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Water Exposed Area

3.2 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					0.0603	0.0000	0.0603	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0123	0.1287	0.0630	1.2000e-004		6.4400e-003	6.4400e-003		5.9300e-003	5.9300e-003	0.0000	10.2353	10.2353	3.3100e-003	0.0000	10.3181
Total	0.0123	0.1287	0.0630	1.2000e-004	0.0603	6.4400e-003	0.0667	0.0331	5.9300e-003	0.0390	0.0000	10.2353	10.2353	3.3100e-003	0.0000	10.3181

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3.2 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	4.7000e-004	0.0155	3.3300e-003	5.0000e-005	1.0700e-003	4.0000e-005	1.1100e-003	2.9000e-004	4.0000e-005	3.3000e-004	0.0000	4.9442	4.9442	1.7000e-004	0.0000	4.9486
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	1.9000e-004	1.6000e-004	1.7200e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3649	0.3649	1.0000e-005	0.0000	0.3652
Total	6.6000e-004	0.0156	5.0500e-003	5.0000e-005	1.4700e-003	4.0000e-005	1.5200e-003	4.0000e-004	4.0000e-005	4.4000e-004	0.0000	5.3091	5.3091	1.8000e-004	0.0000	5.3138

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					0.0235	0.0000	0.0235	0.0129	0.0000	0.0129	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0123	0.1287	0.0630	1.2000e-004		6.4400e-003	6.4400e-003		5.9300e-003	5.9300e-003	0.0000	10.2353	10.2353	3.3100e-003	0.0000	10.3181
Total	0.0123	0.1287	0.0630	1.2000e-004	0.0235	6.4400e-003	0.0300	0.0129	5.9300e-003	0.0188	0.0000	10.2353	10.2353	3.3100e-003	0.0000	10.3181

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3.2 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	4.7000e-004	0.0155	3.3300e-003	5.0000e-005	1.0700e-003	4.0000e-005	1.1100e-003	2.9000e-004	4.0000e-005	3.3000e-004	0.0000	4.9442	4.9442	1.7000e-004	0.0000	4.9486
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	1.9000e-004	1.6000e-004	1.7200e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3649	0.3649	1.0000e-005	0.0000	0.3652
Total	6.6000e-004	0.0156	5.0500e-003	5.0000e-005	1.4700e-003	4.0000e-005	1.5200e-003	4.0000e-004	4.0000e-005	4.4000e-004	0.0000	5.3091	5.3091	1.8000e-004	0.0000	5.3138

3.3 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					0.1953	0.0000	0.1953	0.0809	0.0000	0.0809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0891	0.9955	0.6212	1.2800e-003		0.0423	0.0423		0.0389	0.0389	0.0000	112.4040	112.4040	0.0364	0.0000	113.3128
Total	0.0891	0.9955	0.6212	1.2800e-003	0.1953	0.0423	0.2376	0.0809	0.0389	0.1199	0.0000	112.4040	112.4040	0.0364	0.0000	113.3128

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3.3 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	1.1800e-003	0.0388	8.3400e-003	1.3000e-004	2.6900e-003	9.0000e-005	2.7800e-003	7.4000e-004	9.0000e-005	8.3000e-004	0.0000	12.3804	12.3804	4.4000e-004	0.0000	12.3913
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	1.5500e-003	1.2600e-003	0.0139	3.0000e-005	3.2600e-003	3.0000e-005	3.2900e-003	8.7000e-004	3.0000e-005	8.9000e-004	0.0000	2.9554	2.9554	1.0000e-004	0.0000	2.9580
Total	2.7300e-003	0.0400	0.0222	1.6000e-004	5.9500e-003	1.2000e-004	6.0700e-003	1.6100e-003	1.2000e-004	1.7200e-003	0.0000	15.3358	15.3358	5.4000e-004	0.0000	15.3493

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					0.0762	0.0000	0.0762	0.0316	0.0000	0.0316	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0891	0.9955	0.6212	1.2800e-003		0.0423	0.0423		0.0389	0.0389	0.0000	112.4038	112.4038	0.0364	0.0000	113.3127
Total	0.0891	0.9955	0.6212	1.2800e-003	0.0762	0.0423	0.1185	0.0316	0.0389	0.0705	0.0000	112.4038	112.4038	0.0364	0.0000	113.3127

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3.3 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	1.1800e-003	0.0388	8.3400e-003	1.3000e-004	2.6900e-003	9.0000e-005	2.7800e-003	7.4000e-004	9.0000e-005	8.3000e-004	0.0000	12.3804	12.3804	4.4000e-004	0.0000	12.3913
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	1.5500e-003	1.2600e-003	0.0139	3.0000e-005	3.2600e-003	3.0000e-005	3.2900e-003	8.7000e-004	3.0000e-005	8.9000e-004	0.0000	2.9554	2.9554	1.0000e-004	0.0000	2.9580
Total	2.7300e-003	0.0400	0.0222	1.6000e-004	5.9500e-003	1.2000e-004	6.0700e-003	1.6100e-003	1.2000e-004	1.7200e-003	0.0000	15.3358	15.3358	5.4000e-004	0.0000	15.3493

3.4 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	0.1350	1.2377	1.1768	1.9100e-003		0.0681	0.0681		0.0640	0.0640	0.0000	164.4625	164.4625	0.0397	0.0000	165.4544
Total	0.1350	1.2377	1.1768	1.9100e-003		0.0681	0.0681		0.0640	0.0640	0.0000	164.4625	164.4625	0.0397	0.0000	165.4544

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3.4 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	0.0164	0.5832	0.1274	1.6400e-003	0.0364	9.2000e-004	0.0373	0.0105	8.8000e-004	0.0114	0.0000	155.6460	155.6460	6.6600e-003	0.0000	155.8125
Worker	0.0734	0.0597	0.6580	1.5500e-003	0.1544	1.3000e-003	0.1557	0.0410	1.2000e-003	0.0422	0.0000	139.8910	139.8910	4.8100e-003	0.0000	140.0112
Total	0.0898	0.6429	0.7855	3.1900e-003	0.1908	2.2200e-003	0.1930	0.0515	2.0800e-003	0.0536	0.0000	295.5371	295.5371	0.0115	0.0000	295.8237

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	0.1350	1.2377	1.1768	1.9100e-003		0.0681	0.0681		0.0640	0.0640	0.0000	164.4623	164.4623	0.0397	0.0000	165.4542
Total	0.1350	1.2377	1.1768	1.9100e-003		0.0681	0.0681		0.0640	0.0640	0.0000	164.4623	164.4623	0.0397	0.0000	165.4542

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3.4 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	0.0164	0.5832	0.1274	1.6400e-003	0.0364	9.2000e-004	0.0373	0.0105	8.8000e-004	0.0114	0.0000	155.6460	155.6460	6.6600e-003	0.0000	155.8125
Worker	0.0734	0.0597	0.6580	1.5500e-003	0.1544	1.3000e-003	0.1557	0.0410	1.2000e-003	0.0422	0.0000	139.8910	139.8910	4.8100e-003	0.0000	140.0112
Total	0.0898	0.6429	0.7855	3.1900e-003	0.1908	2.2200e-003	0.1930	0.0515	2.0800e-003	0.0536	0.0000	295.5371	295.5371	0.0115	0.0000	295.8237

3.4 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	0.1877	1.7177	1.8000	2.9600e-003		0.0890	0.0890		0.0837	0.0837	0.0000	254.8978	254.8978	0.0611	0.0000	256.4244
Total	0.1877	1.7177	1.8000	2.9600e-003		0.0890	0.0890		0.0837	0.0837	0.0000	254.8978	254.8978	0.0611	0.0000	256.4244

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3.4 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	0.0238	0.8555	0.1846	2.5200e-003	0.0564	1.2000e-003	0.0576	0.0163	1.1400e-003	0.0174	0.0000	239.3818	239.3818	9.9200e-003	0.0000	239.6298
Worker	0.1065	0.0839	0.9404	2.3200e-003	0.2392	1.9500e-003	0.2411	0.0635	1.8000e-003	0.0653	0.0000	209.2374	209.2374	6.7600e-003	0.0000	209.4065
Total	0.1303	0.9393	1.1250	4.8400e-003	0.2956	3.1500e-003	0.2988	0.0798	2.9400e-003	0.0828	0.0000	448.6192	448.6192	0.0167	0.0000	449.0363

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	0.1877	1.7177	1.8000	2.9600e-003		0.0890	0.0890		0.0837	0.0837	0.0000	254.8975	254.8975	0.0611	0.0000	256.4241
Total	0.1877	1.7177	1.8000	2.9600e-003		0.0890	0.0890		0.0837	0.0837	0.0000	254.8975	254.8975	0.0611	0.0000	256.4241

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3.4 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	0.0238	0.8555	0.1846	2.5200e-003	0.0564	1.2000e-003	0.0576	0.0163	1.1400e-003	0.0174	0.0000	239.3818	239.3818	9.9200e-003	0.0000	239.6298
Worker	0.1065	0.0839	0.9404	2.3200e-003	0.2392	1.9500e-003	0.2411	0.0635	1.8000e-003	0.0653	0.0000	209.2374	209.2374	6.7600e-003	0.0000	209.4065
Total	0.1303	0.9393	1.1250	4.8400e-003	0.2956	3.1500e-003	0.2988	0.0798	2.9400e-003	0.0828	0.0000	448.6192	448.6192	0.0167	0.0000	449.0363

3.5 Paving - 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	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	2.6700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0137	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895

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3.5 Paving - 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	5.4000e-004	4.2000e-004	4.7500e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0568	1.0568	3.0000e-005	0.0000	1.0576
Total	5.4000e-004	4.2000e-004	4.7500e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0568	1.0568	3.0000e-005	0.0000	1.0576

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	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	2.6700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0137	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895

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3.5 Paving - 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	5.4000e-004	4.2000e-004	4.7500e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0568	1.0568	3.0000e-005	0.0000	1.0576
Total	5.4000e-004	4.2000e-004	4.7500e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0568	1.0568	3.0000e-005	0.0000	1.0576

3.6 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	0.6729					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	0.6750	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574

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3.6 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	1.9400e-003	1.5200e-003	0.0171	4.0000e-005	4.3500e-003	4.0000e-005	4.3800e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.8043	3.8043	1.2000e-004	0.0000	3.8074
Total	1.9400e-003	1.5200e-003	0.0171	4.0000e-005	4.3500e-003	4.0000e-005	4.3800e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.8043	3.8043	1.2000e-004	0.0000	3.8074

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	0.6729					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	0.6750	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574

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3.6 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	1.9400e-003	1.5200e-003	0.0171	4.0000e-005	4.3500e-003	4.0000e-005	4.3800e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.8043	3.8043	1.2000e-004	0.0000	3.8074
Total	1.9400e-003	1.5200e-003	0.0171	4.0000e-005	4.3500e-003	4.0000e-005	4.3800e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.8043	3.8043	1.2000e-004	0.0000	3.8074

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	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	0.3419	1.6496	4.2129	0.0145	1.1889	0.0104	1.1993	0.3188	9.7000e-003	0.3285	0.0000	1,337.2419	1,337.2419	0.0526	0.0000	1,338.5563
Unmitigated	0.3419	1.6496	4.2129	0.0145	1.1889	0.0104	1.1993	0.3188	9.7000e-003	0.3285	0.0000	1,337.2419	1,337.2419	0.0526	0.0000	1,338.5563

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,067.58	1,159.92	983.34	3,035,342	3,035,342
City Park	11.91	143.33	105.46	94,032	94,032
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Total	1,079.49	1,303.25	1,088.80	3,129,373	3,129,373

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
Apartments Low Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9

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4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129
City Park	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129
Other Asphalt Surfaces	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129
Parking Lot	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129
Recreational Swimming Pool	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	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
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	219.4369	219.4369	9.0600e-003	1.8700e-003	220.2219
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	219.4369	219.4369	9.0600e-003	1.8700e-003	220.2219
NaturalGas Mitigated	0.0143	0.1220	0.0519	7.8000e-004		9.8600e-003	9.8600e-003		9.8600e-003	9.8600e-003	0.0000	141.2563	141.2563	2.7100e-003	2.5900e-003	142.0957
NaturalGas Unmitigated	0.0143	0.1220	0.0519	7.8000e-004		9.8600e-003	9.8600e-003		9.8600e-003	9.8600e-003	0.0000	141.2563	141.2563	2.7100e-003	2.5900e-003	142.0957

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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						
Apartments Low Rise	2.64704e+006	0.0143	0.1220	0.0519	7.8000e-004		9.8600e-003	9.8600e-003		9.8600e-003	9.8600e-003	0.0000	141.2563	141.2563	2.7100e-003	2.5900e-003	142.0957	
City Park	0	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
Other Asphalt Surfaces	0	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
Parking Lot	0	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
Recreational Swimming Pool	0	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
Total		0.0143	0.1220	0.0519	7.8000e-004		9.8600e-003	9.8600e-003		9.8600e-003	9.8600e-003	0.0000	141.2563	141.2563	2.7100e-003	2.5900e-003	142.0957	

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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	tons/yr										MT/yr					
Apartments Low Rise	2.64704e+006	0.0143	0.1220	0.0519	7.8000e-004		9.8600e-003	9.8600e-003		9.8600e-003	9.8600e-003	0.0000	141.2563	141.2563	2.7100e-003	2.5900e-003	142.0957
City Park	0	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
Other Asphalt Surfaces	0	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
Parking Lot	0	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
Recreational Swimming Pool	0	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
Total		0.0143	0.1220	0.0519	7.8000e-004		9.8600e-003	9.8600e-003		9.8600e-003	9.8600e-003	0.0000	141.2563	141.2563	2.7100e-003	2.5900e-003	142.0957

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	686943	218.8748	9.0400e-003	1.8700e-003	219.6579
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	1764	0.5621	2.0000e-005	0.0000	0.5641
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		219.4369	9.0600e-003	1.8700e-003	220.2219

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	686943	218.8748	9.0400e-003	1.8700e-003	219.6579
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	1764	0.5621	2.0000e-005	0.0000	0.5641
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		219.4369	9.0600e-003	1.8700e-003	220.2219

6.0 Area Detail**6.1 Mitigation Measures Area**

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, 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	0.8639	0.0139	1.2044	6.0000e-005		6.6600e-003	6.6600e-003		6.6600e-003	6.6600e-003	0.0000	1.9673	1.9673	1.9000e-003	0.0000	2.0147
Unmitigated	0.8639	0.0139	1.2044	6.0000e-005		6.6600e-003	6.6600e-003		6.6600e-003	6.6600e-003	0.0000	1.9673	1.9673	1.9000e-003	0.0000	2.0147

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	0.0673					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7602					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0364	0.0139	1.2044	6.0000e-005		6.6600e-003	6.6600e-003		6.6600e-003	6.6600e-003	0.0000	1.9673	1.9673	1.9000e-003	0.0000	2.0147
Total	0.8639	0.0139	1.2044	6.0000e-005		6.6600e-003	6.6600e-003		6.6600e-003	6.6600e-003	0.0000	1.9673	1.9673	1.9000e-003	0.0000	2.0147

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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	0.0673					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7602					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0364	0.0139	1.2044	6.0000e-005		6.6600e-003	6.6600e-003		6.6600e-003	6.6600e-003	0.0000	1.9673	1.9673	1.9000e-003	0.0000	2.0147
Total	0.8639	0.0139	1.2044	6.0000e-005		6.6600e-003	6.6600e-003		6.6600e-003	6.6600e-003	0.0000	1.9673	1.9673	1.9000e-003	0.0000	2.0147

7.0 Water Detail

7.1 Mitigation Measures Water

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	98.0502	0.3517	9.0200e-003	109.5308
Unmitigated	98.0502	0.3517	9.0200e-003	109.5308

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	10.555 / 6.65421	70.6938	0.3467	8.7000e-003	81.9531
City Park	0 / 7.50633	26.5716	1.1000e-003	2.3000e-004	26.6666
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.118286 / 0.0724981	0.7849	3.8900e-003	1.0000e-004	0.9111
Total		98.0502	0.3517	9.0300e-003	109.5308

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	10.555 / 6.65421	70.6938	0.3467	8.7000e-003	81.9531
City Park	0 / 7.50633	26.5716	1.1000e-003	2.3000e-004	26.6666
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.118286 / 0.0724981	0.7849	3.8900e-003	1.0000e-004	0.9111
Total		98.0502	0.3517	9.0300e-003	109.5308

8.0 Waste Detail

8.1 Mitigation Measures Waste

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.5506	1.0372	0.0000	43.4809
Unmitigated	17.5506	1.0372	0.0000	43.4809

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	74.52	15.1269	0.8940	0.0000	37.4762
City Park	0.54	0.1096	6.4800e-003	0.0000	0.2716
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	11.4	2.3141	0.1368	0.0000	5.7331
Total		17.5506	1.0372	0.0000	43.4809

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8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	74.52	15.1269	0.8940	0.0000	37.4762
City Park	0.54	0.1096	6.4800e-003	0.0000	0.2716
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	11.4	2.3141	0.1368	0.0000	5.7331
Total		17.5506	1.0372	0.0000	43.4809

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

Air Quality Study - 20th Street West Apartments, Lancaster, CA
Antelope Valley APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	84.14	1000sqft	1.93	84,138.00	0
Parking Lot	42.00	Space	0.11	5,040.00	0
City Park	6.30	Acre	6.30	274,428.00	0
Recreational Swimming Pool	2.00	1000sqft	0.10	2,000.00	0
Apartments Low Rise	162.00	Dwelling Unit	3.08	190,258.00	463

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

Project Characteristics -

Land Use - Information provided by client.

Construction Phase - Schedule adjusted to the start and end date provided on the data request form. The duration of the grading phase (45 days) was provided by client via email on 9/4/2020.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Amount of excavators (1) for the Grading phase was provided by client via email on 9/4/2020.

Off-road Equipment -

Off-road Equipment - Amount of rubber tired dozers (2) and tractors/loaders/backhoes (2) for the Site Preparation phase provided by client on 9/4/2020.

Trips and VMT -

Grading - Values based on client input on the data request form.

Architectural Coating - VOC limits from AVAQMD Rule 1113. For the building, assumes 90% flat paint (50 g/L) and 10% non-flat (100 g/L). For parking lot coatings, assumed to be compliant with the Traffic Marking Coating category VOC limit of 100 g/L.

Vehicle Trips - No non-resident trips expected, assumed the pool would be primarily used by residents.

Woodstoves - Based on client input on the data request form, no woodstoves or fireplaces will be installed.

Area Coating - VOC limits from AVAQMD Rule 1113. For the building, assumes 90% flat paint (50 g/L) and 10% non-flat (100 g/L). For parking lot coatings, assumed to be compliant with the Traffic Marking Coating category VOC limit of 100 g/L.

Construction Off-road Equipment Mitigation - Assumes that construction site will be watered 3 times per day to be in compliance with AVAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	55.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	55.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	55.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	55.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	55
tblAreaCoating	Area_EF_Nonresidential_Interior	250	55
tblAreaCoating	Area_EF_Parking	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	55

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tblAreaCoating	Area_EF_Residential_Interior	250	55
tblConstructionPhase	NumDays	300.00	362.00
tblConstructionPhase	NumDays	30.00	45.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	89.10	0.00
tblFireplaces	NumberNoFireplace	16.20	0.00
tblFireplaces	NumberWood	56.70	0.00
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialImported	0.00	2,500.00
tblLandUse	LandUseSquareFeet	84,140.00	84,138.00
tblLandUse	LandUseSquareFeet	16,800.00	5,040.00
tblLandUse	LandUseSquareFeet	162,000.00	190,258.00
tblLandUse	LotAcreage	0.38	0.11
tblLandUse	LotAcreage	0.05	0.10
tblLandUse	LotAcreage	10.13	3.08
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblWoodstoves	NumberCatalytic	8.10	0.00
tblWoodstoves	NumberNoncatalytic	8.10	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

2.0 Emissions Summary

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	4.0947	45.9783	29.0277	0.0744	12.3561	1.8863	13.6527	6.7038	1.7355	7.8970	0.0000	7,400.296 2	7,400.296 2	1.8071	0.0000	7,420.244 3
2022	67.7258	24.0073	27.8860	0.0734	2.7393	0.8375	3.5768	0.7384	0.7878	1.5262	0.0000	7,301.185 3	7,301.185 3	0.7823	0.0000	7,320.743 5
Maximum	67.7258	45.9783	29.0277	0.0744	12.3561	1.8863	13.6527	6.7038	1.7355	7.8970	0.0000	7,400.296 2	7,400.296 2	1.8071	0.0000	7,420.244 3

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	4.0947	45.9783	29.0277	0.0744	5.0023	1.8863	6.2989	2.6643	1.7355	3.8575	0.0000	7,400.296 2	7,400.296 2	1.8071	0.0000	7,420.244 3
2022	67.7258	24.0073	27.8860	0.0734	2.7393	0.8375	3.5768	0.7384	0.7878	1.5262	0.0000	7,301.185 3	7,301.185 3	0.7823	0.0000	7,320.743 5
Maximum	67.7258	45.9783	29.0277	0.0744	5.0023	1.8863	6.2989	2.6643	1.7355	3.8575	0.0000	7,400.296 2	7,400.296 2	1.8071	0.0000	7,420.244 3

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, 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	48.72	0.00	42.68	54.28	0.00	42.87	0.00	0.00	0.00	0.00	0.00	0.00

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, 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	4.9384	0.1542	13.3819	7.1000e-004		0.0740	0.0740		0.0740	0.0740	0.0000	24.0949	24.0949	0.0232	0.0000	24.6754
Energy	0.0782	0.6683	0.2844	4.2700e-003		0.0540	0.0540		0.0540	0.0540		853.1967	853.1967	0.0164	0.0156	858.2668
Mobile	2.7178	10.2140	29.7504	0.0990	7.6634	0.0660	7.7293	2.0513	0.0614	2.1127		10,024.7163	10,024.7163	0.3783		10,034.1739
Total	7.7344	11.0365	43.4167	0.1040	7.6634	0.1940	7.8574	2.0513	0.1895	2.2408	0.0000	10,902.0079	10,902.0079	0.4179	0.0156	10,917.1161

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	4.9384	0.1542	13.3819	7.1000e-004		0.0740	0.0740		0.0740	0.0740	0.0000	24.0949	24.0949	0.0232	0.0000	24.6754
Energy	0.0782	0.6683	0.2844	4.2700e-003		0.0540	0.0540		0.0540	0.0540		853.1967	853.1967	0.0164	0.0156	858.2668
Mobile	2.7178	10.2140	29.7504	0.0990	7.6634	0.0660	7.7293	2.0513	0.0614	2.1127		10,024.7163	10,024.7163	0.3783		10,034.1739
Total	7.7344	11.0365	43.4167	0.1040	7.6634	0.1940	7.8574	2.0513	0.1895	2.2408	0.0000	10,902.0079	10,902.0079	0.4179	0.0156	10,917.1161

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, 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	Site Preparation	Site Preparation	4/1/2021	4/14/2021	5	10	
2	Grading	Grading	4/15/2021	6/16/2021	5	45	
3	Building Construction	Building Construction	6/17/2021	11/6/2022	5	362	
4	Paving	Paving	11/7/2022	12/2/2022	5	20	
5	Architectural Coating	Architectural Coating	12/3/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 2.04

Residential Indoor: 385,272; Residential Outdoor: 128,424; Non-Residential Indoor: 3,392; Non-Residential Outdoor: 1,131; Striped Parking Area: 5,351 (Architectural Coating – sqft)

OffRoad Equipment

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	1	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

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
Site Preparation	4	10.00	0.00	125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	313.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	270.00	77.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 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					12.0555	0.0000	12.0555	6.6222	0.0000	6.6222			0.0000			0.0000
Off-Road	2.4673	25.7342	12.5960	0.0233		1.2885	1.2885		1.1854	1.1854		2,256.5045	2,256.5045	0.7298		2,274.7495
Total	2.4673	25.7342	12.5960	0.0233	12.0555	1.2885	13.3439	6.6222	1.1854	7.8076		2,256.5045	2,256.5045	0.7298		2,274.7495

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.2 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	0.0929	3.0225	0.6370	0.0105	0.2185	7.4700e-003	0.2259	0.0599	7.1400e-003	0.0670		1,103.2468	1,103.2468	0.0369		1,104.1695
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	0.0450	0.0278	0.3999	8.9000e-004	0.0822	6.8000e-004	0.0828	0.0218	6.2000e-004	0.0224		88.4742	88.4742	3.0900e-003		88.5514
Total	0.1379	3.0503	1.0369	0.0114	0.3006	8.1500e-003	0.3088	0.0817	7.7600e-003	0.0894		1,191.7210	1,191.7210	0.0400		1,192.7208

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					4.7016	0.0000	4.7016	2.5827	0.0000	2.5827			0.0000			0.0000
Off-Road	2.4673	25.7342	12.5960	0.0233		1.2885	1.2885		1.1854	1.1854	0.0000	2,256.5045	2,256.5045	0.7298		2,274.7495
Total	2.4673	25.7342	12.5960	0.0233	4.7016	1.2885	5.9901	2.5827	1.1854	3.7680	0.0000	2,256.5045	2,256.5045	0.7298		2,274.7495

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.2 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	0.0929	3.0225	0.6370	0.0105	0.2185	7.4700e-003	0.2259	0.0599	7.1400e-003	0.0670		1,103.2468	1,103.2468	0.0369		1,104.1695
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	0.0450	0.0278	0.3999	8.9000e-004	0.0822	6.8000e-004	0.0828	0.0218	6.2000e-004	0.0224		88.4742	88.4742	3.0900e-003		88.5514
Total	0.1379	3.0503	1.0369	0.0114	0.3006	8.1500e-003	0.3088	0.0817	7.7600e-003	0.0894		1,191.7210	1,191.7210	0.0400		1,192.7208

3.3 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					8.6796	0.0000	8.6796	3.5975	0.0000	3.5975			0.0000			0.0000
Off-Road	3.9620	44.2464	27.6066	0.0569		1.8809	1.8809		1.7304	1.7304		5,506.8515	5,506.8515	1.7810		5,551.3772
Total	3.9620	44.2464	27.6066	0.0569	8.6796	1.8809	10.5605	3.5975	1.7304	5.3279		5,506.8515	5,506.8515	1.7810		5,551.3772

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.3 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	0.0517	1.6819	0.3545	5.8400e-003	0.1216	4.1500e-003	0.1257	0.0333	3.9700e-003	0.0373		613.8956	613.8956	0.0205		614.4090
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	0.0810	0.0500	0.7198	1.6000e-003	0.1479	1.2200e-003	0.1491	0.0392	1.1200e-003	0.0404		159.2535	159.2535	5.5600e-003		159.3925
Total	0.1327	1.7319	1.0743	7.4400e-003	0.2694	5.3700e-003	0.2748	0.0725	5.0900e-003	0.0776		773.1491	773.1491	0.0261		773.8014

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					3.3851	0.0000	3.3851	1.4030	0.0000	1.4030			0.0000			0.0000
Off-Road	3.9620	44.2464	27.6066	0.0569		1.8809	1.8809		1.7304	1.7304	0.0000	5,506.8515	5,506.8515	1.7810		5,551.3771
Total	3.9620	44.2464	27.6066	0.0569	3.3851	1.8809	5.2660	1.4030	1.7304	3.1334	0.0000	5,506.8515	5,506.8515	1.7810		5,551.3771

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.3 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	0.0517	1.6819	0.3545	5.8400e-003	0.1216	4.1500e-003	0.1257	0.0333	3.9700e-003	0.0373		613.8956	613.8956	0.0205		614.4090
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	0.0810	0.0500	0.7198	1.6000e-003	0.1479	1.2200e-003	0.1491	0.0392	1.1200e-003	0.0404		159.2535	159.2535	5.5600e-003		159.3925
Total	0.1327	1.7319	1.0743	7.4400e-003	0.2694	5.3700e-003	0.2748	0.0725	5.0900e-003	0.0776		773.1491	773.1491	0.0261		773.8014

3.4 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

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.4 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	0.2258	8.1325	1.6554	0.0235	0.5213	0.0128	0.5341	0.1501	0.0122	0.1623		2,458.1298	2,458.1298	0.0985		2,460.5930
Worker	1.2148	0.7500	10.7971	0.0240	2.2180	0.0183	2.2363	0.5883	0.0169	0.6052		2,388.8025	2,388.8025	0.0834		2,390.8871
Total	1.4406	8.8825	12.4525	0.0475	2.7393	0.0311	2.7704	0.7384	0.0291	0.7675		4,846.9323	4,846.9323	0.1819		4,851.4800

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	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	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.4 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	0.2258	8.1325	1.6554	0.0235	0.5213	0.0128	0.5341	0.1501	0.0122	0.1623		2,458.1298	2,458.1298	0.0985		2,460.5930
Worker	1.2148	0.7500	10.7971	0.0240	2.2180	0.0183	2.2363	0.5883	0.0169	0.6052		2,388.8025	2,388.8025	0.0834		2,390.8871
Total	1.4406	8.8825	12.4525	0.0475	2.7393	0.0311	2.7704	0.7384	0.0291	0.7675		4,846.9323	4,846.9323	0.1819		4,851.4800

3.4 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

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.4 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	0.2114	7.7113	1.5461	0.0233	0.5213	0.0108	0.5321	0.1501	0.0103	0.1604		2,440.712 4	2,440.712 4	0.0946		2,443.078 3
Worker	1.1385	0.6804	9.9766	0.0232	2.2180	0.0178	2.2357	0.5883	0.0164	0.6047		2,306.139 4	2,306.139 4	0.0757		2,308.033 0
Total	1.3499	8.3916	11.5226	0.0465	2.7393	0.0285	2.7678	0.7384	0.0266	0.7650		4,746.851 7	4,746.851 7	0.1704		4,751.111 3

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.4 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	0.2114	7.7113	1.5461	0.0233	0.5213	0.0108	0.5321	0.1501	0.0103	0.1604		2,440.712 4	2,440.712 4	0.0946		2,443.078 3
Worker	1.1385	0.6804	9.9766	0.0232	2.2180	0.0178	2.2357	0.5883	0.0164	0.6047		2,306.139 4	2,306.139 4	0.0757		2,308.033 0
Total	1.3499	8.3916	11.5226	0.0465	2.7393	0.0285	2.7678	0.7384	0.0266	0.7650		4,746.851 7	4,746.851 7	0.1704		4,751.111 3

3.5 Paving - 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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	0.2672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3701	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.5 Paving - 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	0.0633	0.0378	0.5543	1.2900e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		128.1189	128.1189	4.2100e-003		128.2241
Total	0.0633	0.0378	0.5543	1.2900e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		128.1189	128.1189	4.2100e-003		128.2241

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.2672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3701	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

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3.5 Paving - 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	0.0633	0.0378	0.5543	1.2900e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		128.1189	128.1189	4.2100e-003		128.2241
Total	0.0633	0.0378	0.5543	1.2900e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		128.1189	128.1189	4.2100e-003		128.2241

3.6 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	67.2936					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	67.4981	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

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3.6 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	0.2277	0.1361	1.9953	4.6400e-003	0.4436	3.5500e-003	0.4472	0.1177	3.2700e-003	0.1209		461.2279	461.2279	0.0152		461.6066
Total	0.2277	0.1361	1.9953	4.6400e-003	0.4436	3.5500e-003	0.4472	0.1177	3.2700e-003	0.1209		461.2279	461.2279	0.0152		461.6066

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	67.2936					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	0.0000	281.4481	281.4481	0.0183		281.9062
Total	67.4981	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

3.6 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	0.2277	0.1361	1.9953	4.6400e-003	0.4436	3.5500e-003	0.4472	0.1177	3.2700e-003	0.1209		461.2279	461.2279	0.0152		461.6066
Total	0.2277	0.1361	1.9953	4.6400e-003	0.4436	3.5500e-003	0.4472	0.1177	3.2700e-003	0.1209		461.2279	461.2279	0.0152		461.6066

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, 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	2.7178	10.2140	29.7504	0.0990	7.6634	0.0660	7.7293	2.0513	0.0614	2.1127		10,024.71 63	10,024.71 63	0.3783		10,034.17 39
Unmitigated	2.7178	10.2140	29.7504	0.0990	7.6634	0.0660	7.7293	2.0513	0.0614	2.1127		10,024.71 63	10,024.71 63	0.3783		10,034.17 39

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,067.58	1,159.92	983.34	3,035,342	3,035,342
City Park	11.91	143.33	105.46	94,032	94,032
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Total	1,079.49	1,303.25	1,088.80	3,129,373	3,129,373

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
Apartments Low Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129
City Park	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129
Other Asphalt Surfaces	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129
Parking Lot	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129
Recreational Swimming Pool	0.626141	0.036051	0.148950	0.098278	0.015049	0.004778	0.018730	0.038066	0.002273	0.001889	0.007133	0.001532	0.001129

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	0.0782	0.6683	0.2844	4.2700e-003		0.0540	0.0540		0.0540	0.0540		853.1967	853.1967	0.0164	0.0156	858.2668
NaturalGas Unmitigated	0.0782	0.6683	0.2844	4.2700e-003		0.0540	0.0540		0.0540	0.0540		853.1967	853.1967	0.0164	0.0156	858.2668

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

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					
Apartments Low Rise	7252.17	0.0782	0.6683	0.2844	4.2700e-003		0.0540	0.0540		0.0540	0.0540		853.1967	853.1967	0.0164	0.0156	858.2668
City Park	0	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
Other Asphalt Surfaces	0	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
Parking Lot	0	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
Recreational Swimming Pool	0	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
Total		0.0782	0.6683	0.2844	4.2700e-003		0.0540	0.0540		0.0540	0.0540		853.1967	853.1967	0.0164	0.0156	858.2668

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, 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					
Apartments Low Rise	7.25217	0.0782	0.6683	0.2844	4.2700e-003		0.0540	0.0540		0.0540	0.0540		853.1967	853.1967	0.0164	0.0156	858.2668
City Park	0	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
Other Asphalt Surfaces	0	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
Parking Lot	0	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
Recreational Swimming Pool	0	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
Total		0.0782	0.6683	0.2844	4.2700e-003		0.0540	0.0540		0.0540	0.0540		853.1967	853.1967	0.0164	0.0156	858.2668

6.0 Area Detail

6.1 Mitigation Measures Area

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, 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	4.9384	0.1542	13.3819	7.1000e-004		0.0740	0.0740		0.0740	0.0740	0.0000	24.0949	24.0949	0.0232	0.0000	24.6754
Unmitigated	4.9384	0.1542	13.3819	7.1000e-004		0.0740	0.0740		0.0740	0.0740	0.0000	24.0949	24.0949	0.0232	0.0000	24.6754

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	0.3687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1656					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.4040	0.1542	13.3819	7.1000e-004		0.0740	0.0740		0.0740	0.0740		24.0949	24.0949	0.0232		24.6754
Total	4.9384	0.1542	13.3819	7.1000e-004		0.0740	0.0740		0.0740	0.0740	0.0000	24.0949	24.0949	0.0232	0.0000	24.6754

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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	0.3687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1656					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.4040	0.1542	13.3819	7.1000e-004		0.0740	0.0740		0.0740	0.0740		24.0949	24.0949	0.0232		24.6754
Total	4.9384	0.1542	13.3819	7.1000e-004		0.0740	0.0740		0.0740	0.0740	0.0000	24.0949	24.0949	0.0232	0.0000	24.6754

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Air Quality Study - 20th Street West Apartments, Lancaster, CA - Antelope Valley APCD Air District, Summer

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation
