Technical Memorandum

Date:	May 2, 2024
To:	Lisa Kohler, Chevron
From:	Paden Voget, Senior Engineer
RE:	Lost Hills Oil Field Drilling Program Air Resources and Climate Information for Oil and Gas Well APDs

1.0 Introduction

Chevron U.S.A. Inc. (Chevron) has applied to the U.S. Bureau of Land Management (BLM), for applications for permits to drill (APD) 13 wells on federal land owned and managed by the BLM leased by Chevron (Project). BLM analyzes air emissions under two separate Federal rules 1) General Conformity (Clean Air Act Section 176(c); 40 CFR 93, subpart B) and 2) NEPA (National Environmental Policy Act Section 102(2); 40 CFR 1500.3(a)). Each of these rules, and related court cases, have set requirements for air emission inventories and analyses. Accordingly, this Technical Memorandum presents the reasonably foreseeable direct and indirect air pollutant emissions related to oil and gas well APDs to support the BLM general conformity analysis and NEPA review.

2.0 Project Location and Description

The Project site is in unincorporated Kern County, California, and within the San Juaquin Valley Air Basin under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD has established threshold of significance for criteria pollutant emissions during construction and operations, which are based on the SJVAPCD's New Source Review offset requirements for stationary sources. Table 1 summarizes the wells and ancillary facilities to be constructed and operated on federal land as part of the Project.

Table 1 Summary of the new Project Wells and Ancillary Facilities

Land Ownership	Lease Name	Number of New Wells to Be Drilled	Ancillary Facilities to Be Installed
Federal (BLM)	Government	5 Injection Wells 8 Producer Wells	13 Well Pads Flow Lines 13 Power Poles

2.1 Project Construction

Table 2 below lists the equipment that would be used to construct each well pad, drill each well, and install the ancillary facilities associated with the Project. Construction would occur in five distinct phases, listed below:

1. Site Preparation and Grading to Construct Well Pads (5 days per well pad)
2. Well Drilling (2.25 days per well)

3. Well Completion (1.2 days per well)
4. Installation of Production Equipment (1 day per well)
5. Installation of Flow Lines (3 days per production well, 1 day per injection well)

Construction activity for each well pad would involve site clearing, grading, and drilling of a hole next to each proposed well location to store the drill (commonly referred to as rat holes) at each well site over a five-day period. The proposed earthen well pads would be accessed using a series of existing paved and unpaved oil field lease roads. Chevron would limit construction activity to approved areas of disturbance during and following Project implementation. During drilling, Chevron would place all drilling equipment and materials on the proposed well pads. The pads would be cleared of unnecessary items following well completion. Lights would be removed following construction, and no lights would be permanently attached to the wells. The Project would disturb a total of 9.75 acres as a result of the construction of the 13 well pads and associated facilities on federal lands.

Well drilling and completion involves 3.7 additional days of equipment use per well. Installation of the ancillary facilities includes installing power poles, electric equipment, and pumping units associated with each well. Installation of flowlines would involve up to three days of equipment use for each production well and one day for each injection well. For a conservative analysis, three days of equipment use is assumed for installation of flowlines.

For each Project well, a construction crew of up to 8 people would be required for site preparation and grading, up to 37 people would be required during well drilling operations, up to 9 people for well completion operations, up to 8 people for installation of pumping equipment and power poles, and up to 5 people for installation of flowlines (Table 3). Construction crews would be hired from the Kern County region.

Chevron would use between 1,200 barrels (50,400 gallons) and 4,000 barrels (168,000 gallons) of fresh water per well to drill and complete each well, and for dust control and soil compaction. Water use per well is dependent on the depth of each well. All water used for drilling and dust control would be purchased municipal water. The water would be applied to the surface for dust abatement, construction compaction of the well pads, and used during drilling for intermediate/production casing and surface casing. During well drilling, Chevron would use the water to create a non-hazardous water-based drilling mud for drilling operations. No fresh water would be required for operation of any of the wells. All water for the waterflood injection would be from water produced at the field.

Table 2 Construction Equipment Required for 13 Wells and Ancillary Equipment

Project Activity	Equipment	Quantity	Daytime Operating Hours	Nighttime Operating Hours	Total Operating Hours/Day	Days of Operation	Horsepower
Site Preparation and Grading (59 Hours Total Per Well Pad/12-Hour Workday for a Total of 5 Days Per Well Pad and 65 Days Total for 13 Well Pads)	Dozer (CAT D8T/D6T) (20 hours total per well)	1	4	0	4	5	228
	Loader (CAT 950M/950K) (20 hours total per well)	1	4	0	4	5	230
	Motor Grader (CAT 140M) (10 hours total per well)	1	2	0	2	5	185
	Water Truck, 150 Bbl	1	1	0	1	5	365
	Mobilization Truck	2	2	0	2	1	350
	Passenger Car/Pickup	1	0.2	0	0.2	5	150
	Rat-Hole Rig (KenworthT800) 4 hours total per well)	1	4	0	4	1	450
Well Drilling Operations (2.25 Days Per Well – 29.25 Days Total for 13 Wells)	Drill Rig Motor 500H CAT	1	12	12	24	2.25	500
	Rig Generator (Tognum America 16V2000) Tier 4 Interim	1	12	12	24	2.25	1085
	Mud Pump	2	12	12	24	2.25	665
	Light Plant Backup Generator	1	0	10	10	2	16.5
	Crane	1	0.89	0	0.89	2.25	185
	Vacuum Truck	2	5.33	5.33	10.66	2.25	385
	Mobilization/Demobilization Truck	3	1.75	0	1.75	2	350
	Casing Truck	1	6	0	6	1	400
	Wire Line Logging Truck	1	8	0	8	1	300
	Wireline Crew Truck	1	0.5	0	0.5	1	150
	Cementing Crew/engineer truck	1	0.5	0	0.5	1	150
	Bulk Truck	1	6	0	6	1	400
	Cement Pump Truck	1	6	0	6	1	485

Project Activity	Equipment	Quantity	Daytime Operating Hours	Nighttime Operating Hours	Total Operating Hours/Day	Days of Operation	Horsepower
	Mud Material Delivery Truck	1	1.33	0	1.33	2.25	425
	Passenger Car/Pickup	7	0.2	0.2	0.4	2.25	150
Well Completion (1.2 Days Per Well – 15.6 Days Total for 13 Wells)	Rig Motor Tier 4 motor 450HP	1	5	5	10	1	450
	Mud Pump	1	1.5	1.5	3	1	665
	Small Gen 4H H2S Fan	1	5	5	10	1	4
	Tool Truck	1	1.25	1.25	2.5	1.2	150
	Crew Relief 4 door pickup Truck	1	0.2	0.2	0.4	1.2	150
	Supervisor pickup	1	0.2	0.2	0.4	1.2	150
	WSR Supervisor pickup	1	0.2	0.2	0.4	1.2	150
	Hydro Crane for rod/tbg delivery	1	4	0	4	1	185
	Vacuum Truck	1	6	0	6	1	385
	Winch Truck/tank deliver	1	4	0	4	1	400
Installation of Production Equipment (1 Day per Well – 13 Days Total for 13 Wells)	Backhoe (CAT 420E/420F) (4 hours total per well)	1	3	0	3	1	89
	Welder	1	4	0	4	1	20
	Hydro crane	1	10	0	10	1	185
	Passenger Car/Pickup Supv.	1	0.2	0	0.2	1	150
Installation of Flowlines (3 Day per Well – 39 Days Total for 13 Wells)	¾-Ton Craft Truck	1	1.5	0	1.5	3	430
	Hydro crane	1	5	0	5	3	185
	Welder	1	10	0	10	3	46

Table 3 Construction Vehicle Trips

Phase Name	Workers		Vendors		Haul Trucks	
	Number of Round Trips Per Day	Round Trip Length (miles)[1]	Number of Round Trips Per Day	Round Trip Length (miles)[1]	Number of Round Trips Per Day	Round Trip Length (miles)[1]
Site Preparation and Grading (65 Days for all wells)	8	92	0	92	2	5
Well Drilling Operations (29.25 days for all wells)[2]	37	92	1	92	1	20
Well Completion Operations (15.6 days for all wells)[2]	9	92	3	92	1	20
Installation of Production Equipment (13 days for all wells)[2]	8	92	4	92	1	20
Installation of Flowlines (39 days for all wells)	5	92	2	92	0	0

Notes:

[1] Trip length and vendor trips based on travel to/from Bakersfield (with exception of haul trip length for site preparation and grading based on water truck distance from onsite water source to Project site).

[2] Note that total of 15 vendor trips for Well Drilling Operations will only be over one day (rather than entire duration of well drilling phase), assume conservative 1 trip per day over construction phase.

2.2 Project Operation

Following completion of construction activities, the Project wells would be operated subject to BLM permit requirements by the existing field crew at the Lost Hills Oil Field and would not require hiring additional crew members. Operation of the Project would not require any additional oil processing equipment at the Lost Hills Oil Field beyond the permitted stationary equipment.

In addition, up to one well workover at each well per year is expected with a duration of two days for the workover work at each well. Workover operations involves use of one workover rig, one medium-duty truck, and three worker vehicles over two 12-hour workdays (Table 4).

The Project wells would become operational upon completion of drilling activities at each well pad. Electric energy required to operate the Project wells is estimated at 223 kilowatt-hours (kWh)/day per well. Operation of each well is expected to direct well fluids to existing operational and permitted infrastructure at the Lost Hills Oil Field and would not require an expansion of the existing infrastructure. On-road vehicle trips are assumed to include travel of four workers traveling to/from the Project site every week day (eight one-way trips daily), with the assumption that they would be based out of the Bakersfield area approximately 46 miles from the Project site.

Table 4 Operations Equipment Use

Equipment	Quantity	No. Hours Operated Per Day	No. Days Use per Year for One Well[3]	No. Days Use per Year (or 13 Wells[3]	Horsepower
Workover Rig	1	12	2	26	500
Water Truck (Dust Suppression)[1]	1	2	260	260	365
Passenger Car/Pickup[2]	3	0.2	260	260	150

Notes:

[1] Assume water truck is used throughout the Project Area 2 hours per day on all weekdays.

[2] Passenger car/pickup operation is based on one trip per day during all weekdays.

[3] The same level of activity associated with daily inspection, maintenance, and dust suppression is assumed regardless of the number of wells.

3.0 Required Information

3.1 Criteria Pollutant Estimate and Initial Analysis for General Conformity

3.1.1 Well Construction and Development Emissions

Well construction and development emissions of criteria pollutants, including nitrogen oxides (NO_X), volatile organic compounds (VOCs), carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$). Short-term construction emissions were determined utilizing the latest version of the CalEEMod model (version 2022.1) based on the assumptions, described in Section 2.0 above, and utilizing CalEEMod defaults for calendar year. Mitigated emissions estimates

assume all off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-road Compression-Ignition Engines as specified in C.C.R., Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 4 Final engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide NO_X and particulate matter emissions that are equivalent to Tier 4 engine. Drill rig engines shall meet a minimum of Tier 4 Interim California Emission Standards.

Emissions estimates are inclusive of emissions related to combustion of fuels associated construction activities detailed in Table 2 and on-road vehicle trips including worker, vendor, and haul trips associated with well construction and development detailed in Table 3. Project emissions are also inclusive of fugitive PM_{10} and $PM_{2.5}$ from land disturbance and travel on unpaved roads utilizing CalEEMod default emission factors and assuming fugitive dust control measures required by the SJVAPCD (refer to Attachment A for emission model results).

For the purposes of estimating Project emissions, the Project-associated emissions were modeled for one representative well. The emissions are calculated assuming that one well would be drilled at a time with subsequent construction of associated ancillary facilities (i.e., installation of flowlines, electrical, and pumping units). The calculated unmitigated Project emissions for installation of one representative well is provided in Table 5.

Table 5 Criteria Pollutant Emissions for Construction and Development of One Representative Well and Total Project Construction Emissions

Pollutant	Emissions for Construction of One Well (Tons per Year per Well)	Emissions for Construction of 13 Project Wells (Tons per Year for Entire Project)
NO_x	0.059	0.765
SO_X	0.001	0.013
PM_{10}	0.118	1.540
$PM_{2.5}$	0.015	0.198
CO	0.504	6.549
ROG (i.e. VOC)	0.011	0.138

Source: CalEEMod results provided in Attachment A

3.1.2 Operational Emissions

Emissions from Project operation and maintenance were modeled utilizing CalEEMod with inputs based on assumptions detailed in Section 2.0 above. Specifically, for each well, operation activities include one workover performed over a 2-day period at each well site, as well as daily dust suppression and regular daily inspection activities (Attachment A). Annual operations emissions summarized in Table 6 are inclusive of combustion emissions associated with off-road equipment, fugitive emissions associated with travel on unpaved roads, and emissions associated with worker on-road vehicle travel assuming eight vehicle trips per day for workers traveling to/from the Project site from the greater Bakersfield area roughly 46 miles away. Total annual vehicle miles travelled associated with operations is estimated

to be approximately 95,943 miles per year (i.e., 8 trips/weekday * 46 miles/trip * 260.714 weekdays/year = 95,943 miles/year).

Table 6 Annual Operational Criteria Pollutant Emissions for One Representative Well and Total Annual Project Operation and Maintenance Activity Emissions

Pollutant	Emissions for Operation of One Well (Tons per Year per Well)	Emissions for Operation of 13 Project Wells (Tons per Year for Entire Project)[1]
NO_x	0.146	1.612
SO_X	0.001	0.007
PM_{10}	0.38	0.435
$PM_{2.5}$	0.047	0.098
CO	0.269	1.978
ROG	0.026	0.242

Notes

[1] CalEEMod results (Attachment A). Annual operation emissions for 13 Project presented in this table assume that mobile-source emissions associated with daily inspection and maintenance would be the same for one well as 13 wells (i.e., the same level of activity associated with daily inspection, maintenance, and dust suppression is assumed regardless of the number of wells); off-road emissions associated with one well are multiplied by 13.

3.1.3 Fugitive Leaks

Fugitive leaks associated with Project components for the 8 producer wells has been estimated in accordance with the *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* prepared by the California Air Pollution Control Officers association and California Air Resources Board (CAPCOA and CARB 1999). Note that fugitive leaks are not expected to be associated with the 5 injector wells. CAPCOA-revised screening value range emission factors (EF) for oil and gas production separated by stream type were used in the calculation of total daily fugitive emissions of VOCs associated with each production well and total fugitive emissions for a single well and for the total of all 8 production wells as summarized in Table 7.

Table 7 Estimated Daily Fugitive Leak Emissions Using Screening Emission Factors

Equipment Type	Service	Component Count Per Well	Total Component Count for 8 Production Wells	Total Allowable Leaking Components[1]	Screening Value EF – TOC[2]		VOC Emissions For One Production Well (lbs/day)[3,4]	VOC Emissions For 8 Production Wells (lbs/day)[3,5]
					<10,000 ppmv (lbs/source)	≥10,000 ppmv (lbs/source)		
Valves	Gas/Light Liquid	6	48	0	1.852E-03	7.333E+00	0.01	0.07
	Light Crude Oil	0	0	0	1.005E-03	3.741E+00	0.00	0.00
	Heavy Crude Oil	0	0	0	7.408E-04	N/A*	0.00	0.00
Pump Seals	Gas/Light Liquid	0	0	0	5.270E-02	4.709E+00	0.00	0.00
	Light Crude Oil	0	0	0	1.402E-02	4.709E+00	0.00	0.00
	Heavy Crude Oil	0	0	0	N/A	N/A	N/A	N/A
Others	Gas/Light Liquid	2	16	0	7.778E-03	7.281E+00	0.02	0.53
	Light Crude Oil	0	0	0	6.931E-03	3.757E-01	0.00	0.00
	Heavy Crude Oil	0	0	0	3.016E-03	N/A*	0.00	0.00
Connectors	Gas/Light Liquid	25	200	1	6.349E-04	1.370E+00	0.02	1.12
	Light Crude Oil	0	0	0	5.291E-04	1.238E+00	0.00	0.00
	Heavy Crude Oil	0	0	0	4.233E-04	N/A*	0.00	0.00
Flanges	Gas/Light Liquid	5	40	0	1.482E-03	3.228E+00	0.01	0.04
	Light Crude Oil	0	0	0	1.270E-03	1.376E+01	0.00	0.00
	Heavy Crude Oil	0	0	0	1.217E-03	N/A*	0.00	0.00
Open-ended Lines	Gas/Light Liquid	0	0	0	1.270E-03	2.905E+00	0.00	0.00
	Light Crude Oil	0	0	0	9.524E-04	1.175E+00	0.00	0.00
	Heavy Crude Oil	0	0	0	7.937E-04	3.762E+00	0.00	0.00
						TOTAL VOC EMISSIONS	**0.04**	**1.7634**

Notes:
ppmv = parts per million by volume
Lbs = pounds
[1] Per SJVAPCD Rule 4409, Section 5.1.4, Leak Standards, the number of allowable leaks is 0.5% of components per inspection period (Table 3 of Rule 4409).
[2] Screening Value EF from Table IV-2c. Oil and Gas Production Screening Value Ranges Emission Factors provided in the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (CAPCOA and CARB 1999).
[3] Weight percentage of VOC in the total organic compound in gas is assumed to be 75%. Weight percentage of VOC in the total organic compound in oil is assumed to be 0%
[4] Calculation for one well assumes Screening Value EF for <10,000 ppmv (lb/day/source) for all components.
[5] Calculation for eight production wells assumes Screening Value EF for ≥10,000 ppmv (lb/day/source) for Total Allowable Leaking Components, and <10,000 ppmv (lb/day/source) for all other remaining components.
* Emission factor not available. All components from equipment type and service will be assessed as <10,000 ppmv.

3.1.4 General Conformity

The General Conformity requirements would apply to the Project for each pollutant for which the total of direct and indirect emissions caused by the Project equal or exceed the *de minimis* emission rates shown in Table 8 as established by the SJVAPCD. These emission rates are expressed in units of tons per year (tpy) for the calendar year. The General Conformity *de minimis* thresholds for criteria pollutants are based on the federal attainment status in the San Joaquin Valley Air Basin. The San Joaquin Valley Air Basin is considered an extreme nonattainment area for the O_3 NAAQS, a serious/moderate nonattainment area for the $PM_{2.5}$ NAAQS, and a serious maintenance area for the PM_{10} NAAQS. Although the Basin is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ General Conformity *de minimis* thresholds are used. For $PM_{2.5}$ and SO_2, the *de minimis* threshold for projects located in serious nonattainment areas are used because this threshold is lower than the 100 tpy threshold for projects exclusively in moderate nonattainment areas.

Table 8 Federal *de minimis* Thresholds for the SJVAPCD (Tons per Year)

NAAQS Status	NO_X	CO	VOC	SO_X	PM_{10}	$PM_{2.5}$
O_3 Extreme $PM_{2.5}$ Serious	10	100	10	100	100	70

As noted in Section 3.1 above, Project construction and operations emissions including combustion exhaust and fugitive dust (PM_{10} and $PM_{2.5}$) and fugitive leaks were estimated using emission factors and methodologies from CalEEMod, version 2022.1 and *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* (CAPCOA and CARB 1999). Total annual estimated emissions generated within the San Joaquin Valley Air Basin for the construction of 13 wells within a single year are compared to the General Conformity *de minimis* thresholds in Table 9.

Table 9 Annual Construction Emissions Compared to Federal *de minimis* Thresholds for the SJVAPCD (Tons per Year)

Project Activity	NO_X	CO	VOC	SO_X	PM_{10}	$PM_{2.5}$
Project Construction Emissions	0.765	6.549	0.138	0.013	1.540	0.198
***de minimis* Threshold**	**10**	**100**	**10**	**100**	**100**	**70**
Exceed de minimis threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Following construction of the 13 wells (assumed to be completed within a single year for the purpose of this analysis), emissions would be generated from operations and maintenance activities, including one workover per year at each well, daily dust suppression and site inspection activities, and fugitive emissions from leaking components. Total annual estimated emissions generated within the San Joaquin Valley Air Basin for the operation of 13 wells are compared to the General Conformity *de minimis* thresholds in Table 10.

Table 10 Annual Operation Emissions Compared to Federal *de minimis* Thresholds for the SJVAPCD (Tons per Year)

Project Activity	NO_X	CO	VOC[1]	SO_X	PM_{10}	PM2.5
Project Operation Emissions	1.612	1.978	0.563	0.007	0.435	0.098

***de minimis* Threshold**	**10**	**100**	**10**	**100**	**100**	**70**
Exceed de minimis threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
[1] VOC emissions are inclusive of off-road, on-road, and fugitive dust emissions associated with annual operation of the 13 Project wells as calculated using CalEEMod (see Table 6) in addition to the total calculated VOC emissions associated with fugitive leaks as presented in Table 7.

As shown in Table 9 and Table 10, construction and operation of the Project would not exceed the *de minimis* thresholds. Accordingly, no additional analyses are required.

3.2 Criteria Pollutant Emission Estimate and Initial Analysis for NEPA

For the purpose of NEPA, construction and operation emissions associated with the Project are provided in Tables 6 and Table 7 above.

3.2.1 Estimated Ultimate Recovery (EUR) for Oil and Gas

BLM is required under NEPA to analyze midstream and end-use emissions related to the new wells. Accordingly, Estimated Ultimate Recovery (EUR) for oil and gas is provided for the Project as summarized in Table 11.

Table 11 Estimated Ultimate Recovery for Project Wells

Project ID	Well	Well Type	Life (years)	Oil Production (BBL/year)	Gas Production (Mcf/year)	Oil Total EUR (BBL)	Gas Total EUR (Mcf)
SLH_D_UC_LNR_002	4-2D	Producer	9	35,503	8,346	319,527	75,114
SLH_D_UC_LNR_002	9-1B	Producer					
SLH_D_UC_LNR_002	10-5F	Producer					
SLH_D_UC_LNR_002	12-5D	Producer					
SLH_D_UC_LNR_001	13-18L	Producer					
SLH_D_UC_LNR_001	10-4L	Producer					
SLH_D_UC_INJ_002	5-4UWR	Injector	N/A	N/A	N/A	N/A	N/A
SLH_D_UC_INJ_002	8-10UWR	Injector					
SLH_D_UC_INJ_002	8-11UWR	Injector					
SLH_D_UC_INJ_002	13-13UWR	Injector					
SLH_D_UC_INJ_002	14-12UWR	Injector					
SLH_D_UC_FLD_998	9-17A	Producer	7	33,097	199,878	231,679	1,399,146
SLH_D_UC_FLD_998	11-3D	Producer					
			TOTAL	**68,600**	**208,224**	**551,206**	**1,474,260**

Notes:
BBL = Barrel
Mcf = one thousand cubic feet
N/A = Not applicable (water injection only)

3.2.2 Hazardous Air Pollutants (HAPs) – Toxic Air Contaminants (TACs)

"Hazardous air pollutants" is a term used by the federal Clean Air Act (CAA) that includes a variety of pollutants generated or emitted by industrial production activities. HAPs are also referred to as Toxic Air Contaminants (TACs) under the California Clean Air Act (CCAA). TACs are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots: Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals. Of the Kern County portion of the San Joaquin Valley Air Basin, no facility in the SJVAPCD has reported cancer risk exceeding 10 in 1 million or a hazard index over 1.0 and, therefore, are not considered significant by the standards of the Hot Spots program in the SJVAPCD. Well development and oil production may result in HAP/TAC emissions. The two most prevalent oil well related TACs are hydrogen sulfide and diesel exhaust DPM. In addition, the SJVAPCD also provides an air toxic profile for Oilfield Equipment Fugitives for use in estimating air toxic emissions for compliance with the AB2588 "Hot Spots" program (SJVAPCD 2017). As summarized in Table 7 above, fugitive emissions associated with operation of the eight production wells are estimated to be 0.04 lbs/day (14.6 lbs/year) for one well or 1.7634 lbs/day (643.641 lbs/year) for all eight Project wells. The data provided in Table 12 summarizes the estimated Project emissions of TACs based on the SJVAPCD air toxic profile for Oil Field Equipment Fugitives. Note that drilling of new wells will utilize a closed-loop drilling system, thus no fugitive emissions of VOCs would be emitted during drilling activities.

Table 12 SJVAPCD Air Toxic Profile for Oilfield Equipment Fugitives and Estimated Project Fugitive TAC Emissions.

Pollutant Name	Emission Factor (lbs/lb VOC)[1]	Estimated Fugitive Emissions for One Production Well (lb/year/well)	Estimated Fugitive Emissions for 8 Production Wells (tons/year)
Benzene	0.0035	0.051	0.0011
Hydrogen Sulfide	0.0143	0.209	0.0046
Toluene	0.0034	0.050	0.0011
Xylenes (mixed)	0.007	0.102	0.0022
	TOTAL	**0.412**	**0.009**

Notes:
[1] SJVAPCD Toxic Profile #204 (SJVAPCD 2017)

The central facility for the Project wells is identified as CARB Facility ID 2010 located in Section SW3, Township T27S, Range: 21E (Latitude 35.60638° and Longitude -119.706933°). Table 13 summarizes the emissions data for the facility provided by CARB online (CARB 2024). Note that reported emissions of criteria pollutants and DPM are for activities associated with the full scope of Chevron activities within the Lost Hills Oil Field.

Table 13 CARB Emission Data for Chevron Facility ID: 2010 (2021)

Pollutant Name	Emissions (2021)
VOC (tons)	13.686
NO_X (tons)	0.041
SO_X (tons)	0
$PM_{2.5}$ (tons)	0.215
NH_3 (tons)	0
Benzene (lbs)	97.31295
Hydrogen Sulfide	0.0143
1,3-Butadiene (lbs)	--
Chromium Hexavalent	--
Diesel PM	421.52384
Formaldehyde	4.67807
Hydrochloric Acid (lbs)	--
Hydrogen Sulfide (lbs)	160.01107
Nickel (lbs)	--

Source: CARB 2024

With respect to Project-related to DPM, the state of California determines the toxicity of each pollutant and assigns each a potency factor. The DPM toxicity number incorporates the cumulative health effects of all of the constituents of diesel exhaust into one risk number. Therefore, the only TAC associated with diesel equipment from well construction and long-term maintenance are diesel exhaust associated with off-road (e.g., drill rig during well construction and workover rig during annual well maintenance) and mobile equipment (on-road vehicles). DPM emissions associated with project construction and operation activities were estimated as exhaust particulate matter less than 10 microns ($PM_{10}E$) using CalEEMod (version 2022.1). Project related emissions associated with construction and operation are summarized in Table 14. Note that one workover per year is assumed at each well site (i.e., workover rig is assumed to operate 12 hours/day over a 2-day period at each well site) with daily dust suppression and regular daily inspection activities assumed to be conducted throughout the Project area weekdays (i.e., 260 days/year) as detailed in Section 2.2 above.

Table 14 Construction and Operation DPM Emissions

Project Phase	Average Daily DPM (lbs/day)[3]	Maximum Daily DPM (lbs/day)[5]	Total Annual DPM for One Well (tons/year)	Total Annual DPM for 13 Wells (tons/year)
Project Construction Emissions[1]	0.011	0.630	0.002	0.026
Project Operations Emissions – Off-Road[2]	0.025	0.217	0.005	0.060
Project Operation Emissions - Mobile[2,4]	0.002	0.003	0.0004	0.0004

	TOTAL	**0.0074**	**0.09**

Notes:
[1] Construction DPM emissions are inclusive of "mitigated" $PM_{10}E$ as calculated in Project CalEEMod model, inclusive of on-road and off-road combustion engine emissions, with construction of all 13 Project wells assumed to occur in a single year (see Section 3.1.1) and also assuming implementation of **Mitigation Measure AIR-1** which requires (with the exception of the drill rig engines) that all off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-road Compression-Ignition Engines as specified in C.C.R., Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 4 Final engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide NO_X and particulate matter emissions that are equivalent to Tier 4 engine. Drill rig engines shall meet a minimum of Tier 4 Interim California Emission Standards.
[2] Operations DPM emissions are inclusive of $PM_{10}E$ as calculated in Project CalEEMod model, inclusive of on-road and off-road combustion engine emissions associated with annual workovers and daily operations and maintenance (see Section 3.1.2)
[3] Construction and operational activity varies. The average daily emissions are representative of the calculated average of all daily emissions during construction or equipment activity as calculated in the CalEEMod model.
[4] Note that mobile emissions are conservatively assumed to be the same for one well as compared to total Project mobile emissions associated with operation of all 13 wells as daily inspection and dust suppression is assumed to be constant regardless of the number of wells.
[5] Maximum daily inclusive of maximum of daily winter or summer emissions as calculated in the CalEEMod model.

As demonstrated in Tables 12 and 14, total Project HAP/TAC emissions would be 0.099 tons/year.

3.2.3 Health Risk Assessment

In accordance with the SJVAPCD guidance, prioritization scores have been calculated for the Project utilizing the SJVAPCD prioritization methodology as outlined the CAPCOA Facility Prioritization Guidelines to prioritize facilities under AB 2588. The following summarizes the nearest sensitive receptors to a proposed well site (Well 12-5D) on federal land:

- Nearest commercial property line: 5,325 feet
- Lost Hills Elementary School: 7,340 feet
- A.M. Thomas Middle School: 7,980 feet
- Nearest residential property line: 8,470 feet

For the purposes of a conservative estimate of the Project's prioritization score, emissions of all Project DPM associated with construction activities (e.g., drill rig, construction equipment, mobile-source emissions, etc.) for the 13 wells on federal land were assumed to be emitted from a single well location nearest a receptor (Well 12-5D). Similarly, operational emissions of DPM (i.e., emissions associated with workover rig and mobile-source emissions) for the 13 wells on federal land were assumed to be emitted from the well location nearest a receptor (Well 12-56D). The SJVAPCD Prioritization Score calculator was used to calculate prioritization scores for the Project with the results summarized in Table 15.

Table 15 Project Estimated Prioritization Scores

Emission Source	Nearest Commercial Property Line	Lost Hills Elementary School	A.M. Thomas Middle School	Nearest Residential Property Line
Construction - Prioritization Cancer Score	0.37	0.014	0.014	0.014
Workover Mobile - Prioritization Cancer Score	0.004	0.0019	0.0019	0.0019
Workover Off-Road - Prioritization Cancer Score	0.03	0.08	0.08	0.08
Construction - Prioritization Chronic Score	0.00055	0.000021	0.000021	0.000021

Emission Source	Nearest Commercial Property Line	Lost Hills Elementary School	A.M. Thomas Middle School	Nearest Residential Property Line
Workover Mobile - Prioritization Chronic Score	0.00001	0.0000027	0.0000027	0.0000027
Workover Off-Road - Prioritization Chronic Score	0.00004	0.00013	0.00013	0.00013

Source: SJVAPCD Prioritization Calculator Results in Attachment B

In addition, an evaluation of potential health risks associated with the full project (including wells to be drilled outside of federal land), was conducted for the drilling and operation of 75 proposed wells located within an area of approximately 2,755 acres west of the community of Lost Hills, California. The health risk assessment (HRA) was conducted following current California Air Resources Board (CARB) Hotspots Analysis and Reporting Program (HARP) guidance and software (HARP ver. 2; HARP2) and SJVAPCD air dispersion modeling guidance (SJVAPCD 2022). The HARP2 model comprises three components (1) source emissions, (2) air dispersion modeling, and (3) health risk assessment.

Emissions estimates involve identifying and quantifying emissions of potential regulated toxic substances from each source. The analysis conducted for the proposed project followed CalEPA Office of Environmental Health Hazard Assessment (OEHHA) guidance regarding whether pollutants are carcinogenic or possibly associated with short-term or long-term non-cancer health impacts and quantifies toxic emissions from each source. “Hazardous air pollutants” is a term used by the federal CAA that includes a variety of pollutants generated or emitted by industrial production activities. HAPs are also referred to as TACs under the CCAA. California listed DPM as a TAC in 1998. The state of California determines the toxicity of each pollutant and assigns each a potency factor. Those factors are built into the HARP2 risk assessment model. The DPM toxicity number incorporates the cumulative health effects of all of the constituents of diesel exhaust into one risk number. Therefore, the only TAC associated with diesel equipment from well construction and long-term maintenance is diesel exhaust associated with off-road (e.g., drill rigs) and mobile equipment (on-road vehicles). Accordingly, this HRA focuses its analysis on emissions of DPM. Drilling of new wells will utilize a closed-loop drilling system, thus no fugitive emissions of hydrocarbons (VOCs) would be emitted during drilling activities. DPM emissions associated with project construction and operation activities were estimated as exhaust particulate matter less than 10 microns ($PM_{10}E$) using CalEEMod. Air dispersion modeling was conducted using the AERMOD air dispersion modeling component of the HARP2 model, and the HRA was conducted using the Risk Analysis component of HARP2. The focus of the HRA is on human receptors located in close proximity to the proposed oil field well locations and/or human receptors that may be considered more sensitive due to age, socioeconomic status, or underlying health condition. The properties located in closest proximity to the proposed oil field operations are zoned commercial. As such, commercial workers were identified as human receptors with the closest proximity to potential Project DPM releases. There are two schools located just east of the aforementioned commercial properties. These are the Lost Hills Elementary School and the A.M. Thomas Middle School. Residential properties are located further east from the schools. The proposed well nearest to these receptors is well 7-3WB (located on private land). The distances from well 7-3WB to each of the aforementioned receptors are as follows:

- Nearest commercial property line: 1,150 feet
- Lost Hills Elementary School: 4,321 feet
- A.M. Thomas Middle School: 4,642 feet
- Nearest residential property line: 6,545 feet

DPM emissions were modelled as unit emission rates to each of these receptors using the AERMOD area source component of HARP2. Meteorological attributes for model execution were taken from the nearest meteorological station (Kettleman) as uploaded from SJVARCD to AERMOD. For the analysis of short-term emissions related to construction activities, the source area for the purpose of HARP2 modeling was defined as 0.646 acres, representing the area of the well pad associated with well 7-3WB, where all well construction activities were assumed to take place. The conservative analysis assumes that all 75 wells will be drilled at this location, nearest a sensitive receptor, representing a highly conservative scenario that all 75 wells associated with the full project (including those outside of federal land) are constructed at the fence line nearest a sensitive receptor. While in reality, all wells other than 7-3WB would be drilled further from the fenceline (therefore, resulting in lower emissions at the sensitive receptor location), this approach allowed for a single run of the model at a single geographic location rather than the running of 75 individual models and calculating the proportion of emissions from each model at the sensitive receptor location. For the analysis of long-term operational emissions, the source area for the purpose of HARP2 modeling was defined as 2,755 acres based on rectangular configuration of the four most extreme northwest, northeast, southwest, and southeast wells with the eastern edge in latitudinal alignment with well 7-3WB. This assumption conservatively assumes that all operational emissions would occur within the confines of the boundaries of the extent of Project wells, although mobile emissions would be more distributed on local and regional roadways for workers assumed to be traveling to/from the oil field from the Bakersfield area.

Following the completion of AERMOD unit emission air dispersion modeling, $PM_{10}E$ emission modeling was conducted for two separate phases: (1) the initial 1-year Construction Phase and (2) the subsequent well operations Workover Phase, which was assumed to extend throughout and likely beyond standard commercial worker and residential exposure durations of 25 and 30 years, respectively. The Workover Phase includes two types of diesel exhaust emissions: Mobile and Off-Road.

Project-related $PM_{10}E$ emission rates associated with each of these as provided by CalEEMod are as follows:

- Mitigated Construction Emission Rates
  - Maximum summer/winter: 0.05040843 lbs/hr
  - Annual average: 6.125857203 lbs/yr
- Mitigated Workover Emission Rates - Mobile
  - Maximum summer/winter: 0.000128242 lbs/hr
  - Annual average: 0.802335514 lbs/yr
- Mitigated Workover Emission Rates - Off-Road
  - Maximum summer/winter: 0.009045895 lbs/hr
  - Annual average: 36.6710275 lbs/yr

There are several notable assumptions that were used in the model relative to $PM_{10}E$ emission rates and potential exposure to human receptors.

1. For the Construction Phase, work is assumed to be conducted 24 hours/day, 7 days/week over the course of one year; e.g., 365 days/year.
2. For the Workover Phase, work is conducted 12 hours/day, 5 days/week over the course of 152 days/year; e.g., completion of 1 well every ~2 days.
3. The CalEEMod annual emission rates for the Construction Phase are on a per well basis, whereas the CalEEMod annual emission rates for the Workover Phase reflect total emission for all 75 wells.

4. Consistent with OEHHA and CARB guidance, exposure frequency for commercial and school workers was assumed to be 250 days/year and exposure frequency for residents was assumed to be 350 days/year.
5. Exposure frequency for school children at both schools was assumed to be 180 days/year per California Department of Education (CDE 2024) requirements.
6. Although CDE (2024) requirements state that minimum hours/day for elementary and middle school children range from 3.3 hours/day (kindergarten) to 5 hours/day (4^{th} – 8^{th} grades), for this HRA it was conservatively assumed that all school children may be present for 8 hours/day to account for possible after-school activities on school grounds.

The HARP2 $PM_{10}E$ modeling outputs used to evaluate health risks are $PM_{10}E$ air concentrations in units of micrograms per cubic meter ($\mu g/m^3$) whereby $PM_{10}E$ is a 1:1 surrogate for DPM. Cancer and noncancer risk estimates are summarized in Table 16. As summarized in Table 16, all cancer risk estimates for the drilling and operation of 75 wells at the fenceline were below the SJVAPCD cancer risk threshold of 20 x 10^{-6} (2.0E-05). Even though the Nearest Residential Property receptor was the furthest sensitive receptor from the Project, it exhibited the highest total estimated cancer risk of 9.4 x 10^{-6} due to the default HARP2 exposure assumptions of 24 hours/day, 350 days/year exposure for 30 years (Workover Phase). Cancer risk estimates for all other receptors (e.g., workers, school children) were well below 1 x 10^{-6}. The maximum chronic noncancer HQ was 0.0066 for workers and residents; all noncancer HQs were well below the target HQ of 1 as defined by the SJVAPCD (2020).

Table 16 Lost Hills Oil Field Project Cancer and Noncancer Risk Estimates

Receptor	Distance From Well 7-3WB	1-Year Construction Phase		30-Year Workover Phase		1-Year Construction + 29-Year Workover Phase	
	(feet)	Cancer Risk	Noncancer HQ	Cancer Risk	Noncancer HQ	Cancer Risk	Noncancer HQ
Nearest Commercial Property	1,150						
Adult Workers		8.1E-08	0.0065	8.5E-07	0.0045	9.0E-07	0.0065
Lost Hills Elementary School	4,321						
Adult Workers		8.1E-08	0.0066	8.5E-07	0.0045	9.0E-07	0.0066
Children 5-10 years old		2.2E-07	0.0022	7.2E-07	0.00149	8.2E-07	0.0022
A.M. Thomas Middle School	4,642						
Adult Workers		8.1E-08	0.0066	8.5E-07	0.0045	9.0E-07	0.0066
Children 11-13 years old		1.9E-07	0.0022	3.9E-07	0.0015	4.5E-07	0.0022
Nearest Residential Property	6,545						
Adult/Child Residents		9.7E-07	0.00066	8.7E-06	0.0045	9.4E-06	0.0066
SJVAPCD Acceptable Risk Thresholds		***2.0E-05***	***1.0***	***2.0E-05***	***1.0***	***2.0E-05***	***1.0***
SJVAPCD Threshold Exceedance for Any Receptor?		**No**	**No**	**No**	**No**	**No**	**No**

Notes: For Workover Phase, the above risk estimates assume Project area of 2,755 acres bounded by the furthest NE, NW, SE, and SW wells, inclusive of all 75 wells. The eastern edge of the rectangular area was set at the site of well 7-3WB x-coordinate.

For Construction Phase, risk estimates conservatively assume that all 75 wells are drilled at the nearest location to a sensitive receptor (at well site 7-3WB).

As fewer wells are proposed on federal land (i.e., 13 wells) which are also located further from a sensitive receptor than was considered in the HRA conducted for the larger project (i.e., 75 wells), health risks associated with construction and operation of 13 wells on federal land would be less than estimated for the full project.

3.3 Greenhouse Gas Emissions

The Project would result in GHG emissions from diesel- and gasoline-powered construction equipment including drill and completion/workover rig engines, drill pad construction equipment, equipment trucks, water trucks, drill rig crew trucks/vehicles, and portable lift equipment. Long-term operations would result in direct GHG emissions through venting or fugitive losses from valves and fittings, pumps, compressors, and the well head as well as those associated with operation of the workover rig and mobile sources for well maintenance. Operation of the electric pumps at the production wells would result in the additional consumption of energy required for the Project which may result in indirect GHG emissions as discussed further below. Additional indirect sources of GHGs include those associated with waste disposal.

Construction and operation GHG emissions were estimated using the CalEEMod 2022.1 model based on assumptions detailed in Section 2 above, including the Project's construction schedule and operation activities detailed in Section 2.1 and 2.2, respectively. Short-term construction emissions (e.g., off-road equipment, worker vehicle trips, grading, drilling, completion, and installation of ancillary equipment) and annual operation emissions associated with the Project were evaluated. Based on the results of this modeling, construction emissions associated with each Project well would result in a total 96.27 $MTCO_2e$ per year. As such, the maximum annual GHG emissions associated with construction of 13 Project wells is estimated at 1,251.51 $MTCO_2e$ per year (i.e., 96.27 $MTCO_2e$ multiplied by 13). In accordance with SJVAPCD guidance, these emissions are amortized over the lifetime of the Project (30 years) with the resulting amortized annual emissions estimated at 41.72 $MTCO_2e$ per year. For operations, annual GHG emissions are estimated based on workover operations and the GHG emissions from operation of all 13 wells. These activities would result in an estimated 757.80 $MTCO_2e$ per year for the duration of the Project. Project GHG emissions for construction and operations for a single well are shown in Table 17 with total Project GHG emissions associated with construction and operation provided in Table 18.

Table 17 Estimated Per Well Construction and Operations Greenhouse Gas Emissions Per Well

Activity	CO_2 (tons/year)	CH_4 (tons/year)	N_2O (tons/year)	GHG Emissions for 1 Well (Metric tons CO_2e/year)
Construction	95.799	0.004	0.001	96.27
Operations	94.399	0.014	0.003	95.61
			TOTAL	**239.44**

Table 18 Estimated Total Project Construction and Operations Greenhouse Gas Emissions

Activity	GHG Emissions for 13 Wells

	Metric tons CO_2e/year
Construction (13 Wells; amortized over 30-year life of the Project)	41.72
Operations	
Mobile Source	40.43
Area Source	0
Energy	98.87
Waste	4.71
Off-Road	613.79
Total Operations	757.80
TOTAL	**799.52**

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Attachment A

CalEEMod Reports

Lost Hills Drilling Program Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lost Hills Drilling Program
Construction Start Date	1/2/2024
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	16.2
Location	35.61426211383713, -119.7214761738746
County	Kern-San Joaquin
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2914
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

General Light Industry	29.0	1000sqft	0.67	0.00	0.00	0.00	—	Oil Field

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.0	12.3	80.8	142	0.32	3.39	5.99	7.10	3.17	0.98	3.17	—	32,687	32,687	1.32	0.26	1.07	32,797
Mit.	6.78	6.76	29.2	220	0.43	1.21	5.99	6.33	1.21	0.98	1.32	—	44,364	44,364	1.79	0.35	1.07	44,514
% Reduced	51%	45%	64%	-55%	-34%	64%	—	11%	62%	—	58%	—	-36%	-36%	-36%	-37%	—	-36%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.20	0.17	1.20	1.84	0.01	0.05	0.08	0.13	0.04	0.01	0.06	—	539	539	0.02	< 0.005	0.01	541
Mit.	0.09	0.09	0.43	3.18	0.01	0.02	0.08	0.10	0.02	0.01	0.03	—	634	634	0.03	0.01	0.01	636
% Reduced	57%	51%	65%	-73%	—	64%	—	24%	62%	—	47%	—	-18%	-18%	-18%	—	—	-18%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	0.03	0.22	0.34	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	89.2	89.2	< 0.005	< 0.005	< 0.005	89.5

Mit.	0.02	0.02	0.08	0.58	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	105	105	< 0.005	< 0.005	< 0.005	105
% Reduced	57%	51%	65%	-73%	-17%	64%	—	24%	62%	—	47%	—	-18%	-18%	-18%	-17%	—	-18%
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	—	—	15.0	—	—	15.0	—	—	—	—	—	—	—
Unmit.	Yes	No	No	No	No	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Mit.	Yes	No	No	No	No	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	14.0	12.3	80.8	142	0.32	3.39	5.99	7.10	3.17	0.98	3.17	—	32,687	32,687	1.32	0.26	1.07	32,797
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.20	0.17	1.20	1.84	0.01	0.05	0.08	0.13	0.04	0.01	0.06	—	539	539	0.02	< 0.005	0.01	541
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.04	0.03	0.22	0.34	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	89.2	89.2	< 0.005	< 0.005	< 0.005	89.5

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	6.78	6.76	29.2	220	0.43	1.21	5.99	6.33	1.21	0.98	1.32	—	44,364	44,364	1.79	0.35	1.07	44,514
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.09	0.09	0.43	3.18	0.01	0.02	0.08	0.10	0.02	0.01	0.03	—	634	634	0.03	0.01	0.01	636
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.02	0.02	0.08	0.58	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	105	105	< 0.005	< 0.005	< 0.005	105

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.01	0.85	6.15	8.80	0.04	0.22	2.88	3.10	0.20	0.33	0.53	47.5	7,642	7,689	5.47	0.12	1.38	7,862
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.01	0.85	6.18	8.44	0.04	0.22	2.88	3.10	0.20	0.33	0.53	47.5	7,611	7,659	5.47	0.12	0.04	7,831
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.49	0.41	2.89	4.15	0.02	0.10	2.06	2.16	0.09	0.23	0.33	47.5	5,401	5,448	5.38	0.09	0.42	5,611
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.09	0.07	0.53	0.76	< 0.005	0.02	0.38	0.39	0.02	0.04	0.06	7.87	894	902	0.89	0.02	0.07	929

Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	—	—	15.0	—	—	15.0	—	—	—	—	—	—	—
Unmit.	Yes	No	No	No	No	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.17	1.26	< 0.005	< 0.005	2.88	2.88	< 0.005	0.33	0.33	—	358	358	0.01	0.02	1.38	364
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,457	3,457	0.56	0.07	—	3,491
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.94	0.79	5.99	7.54	0.04	0.22	—	0.22	0.20	—	0.20	—	3,827	3,827	0.16	0.03	—	3,840
Total	1.01	0.85	6.15	8.80	0.04	0.22	2.88	3.10	0.20	0.33	0.53	47.5	7,642	7,689	5.47	0.12	1.38	7,862
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.19	0.90	< 0.005	< 0.005	2.88	2.88	< 0.005	0.33	0.33	—	327	327	0.01	0.02	0.04	333
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,457	3,457	0.56	0.07	—	3,491
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

Off-Road	0.94	0.79	5.99	7.54	0.04	0.22	—	0.22	0.20	—	0.20	—	3,827	3,827	0.16	0.03	—	3,840
Total	1.01	0.85	6.18	8.44	0.04	0.22	2.88	3.10	0.20	0.33	0.53	47.5	7,611	7,659	5.47	0.12	0.04	7,831
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.05	0.04	0.13	0.70	< 0.005	< 0.005	2.06	2.06	< 0.005	0.23	0.24	—	240	240	0.01	0.01	0.42	244
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,457	3,457	0.56	0.07	—	3,491
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.44	0.37	2.76	3.45	0.02	0.10	—	0.10	0.09	—	0.09	—	1,704	1,704	0.07	0.01	—	1,710
Total	0.49	0.41	2.89	4.15	0.02	0.10	2.06	2.16	0.09	0.23	0.33	47.5	5,401	5,448	5.38	0.09	0.42	5,611
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.02	0.13	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	39.7	39.7	< 0.005	< 0.005	0.07	40.4
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	572	572	0.09	0.01	—	578
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	7.87	0.00	7.87	0.79	0.00	—	27.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.08	0.07	0.50	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	282	282	0.01	< 0.005	—	283
Total	0.09	0.07	0.53	0.76	< 0.005	0.02	0.38	0.39	0.02	0.04	0.06	7.87	894	902	0.89	0.02	0.07	929

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.07	0.06	0.17	1.26	< 0.005	< 0.005	2.88	2.88	< 0.005	0.33	0.33	—	358	358	0.01	0.02	1.38	364
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,457	3,457	0.56	0.07	—	3,491
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.94	0.79	5.99	7.54	0.04	0.22	—	0.22	0.20	—	0.20	—	3,827	3,827	0.16	0.03	—	3,840
Total	1.01	0.85	6.15	8.80	0.04	0.22	2.88	3.10	0.20	0.33	0.53	47.5	7,642	7,689	5.47	0.12	1.38	7,862
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.19	0.90	< 0.005	< 0.005	2.88	2.88	< 0.005	0.33	0.33	—	327	327	0.01	0.02	0.04	333
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,457	3,457	0.56	0.07	—	3,491
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.94	0.79	5.99	7.54	0.04	0.22	—	0.22	0.20	—	0.20	—	3,827	3,827	0.16	0.03	—	3,840
Total	1.01	0.85	6.18	8.44	0.04	0.22	2.88	3.10	0.20	0.33	0.53	47.5	7,611	7,659	5.47	0.12	0.04	7,831
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.05	0.04	0.13	0.70	< 0.005	< 0.005	2.06	2.06	< 0.005	0.23	0.24	—	240	240	0.01	0.01	0.42	244
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3,457	3,457	0.56	0.07	—	3,491
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.44	0.37	2.76	3.45	0.02	0.10	—	0.10	0.09	—	0.09	—	1,704	1,704	0.07	0.01	—	1,710
Total	0.49	0.41	2.89	4.15	0.02	0.10	2.06	2.16	0.09	0.23	0.33	47.5	5,401	5,448	5.38	0.09	0.42	5,611

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.02	0.13	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	39.7	39.7	< 0.005	< 0.005	0.07	40.4
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	572	572	0.09	0.01	—	578
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	7.87	0.00	7.87	0.79	0.00	—	27.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Off-Road	0.08	0.07	0.50	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	282	282	0.01	< 0.005	—	283
Total	0.09	0.07	0.53	0.76	< 0.005	0.02	0.38	0.39	0.02	0.04	0.06	7.87	894	902	0.89	0.02	0.07	929

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.05	4.27	31.2	38.2	0.16	1.10	—	1.10	1.01	—	1.01	—	17,398	17,398	0.71	0.14	—	17,458
Dust From Material Movement	—	—	—	—	—	—	0.89	0.89	—	0.44	0.44	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.43	0.52	< 0.005	0.02	—	0.02	0.01	—	0.01	—	238	238	0.01	< 0.005	—	239
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	39.5	39.5	< 0.005	< 0.005	—	39.6
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.65	0.00	0.00	5.11	5.11	0.00	0.54	0.54	—	276	276	0.01	0.01	1.07	280
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	3.44	3.44	< 0.005	< 0.005	0.01	3.49
Vendor	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	0.00

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.58
Vendor	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	0.00
Hauling	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	0.00

3.2. Site Preparation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.70	1.69	8.85	86.2	0.16	0.34	—	0.34	0.34	—	0.34	—	17,460	17,460	0.71	0.14	—	17,520
Dust From Material Movement	—	—	—	—	—	—	0.89	0.89	—	0.44	0.44	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	1.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	239	239	0.01	< 0.005	—	240
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	39.6	39.6	< 0.005	< 0.005	—	39.7
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.65	0.00	0.00	5.11	5.11	0.00	0.54	0.54	—	276	276	0.01	0.01	1.07	280
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	3.44	3.44	< 0.005	< 0.005	0.01	3.49
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.58
Vendor	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	0.00
Hauling	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	0.00

3.3. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	14.0	12.3	80.8	142	0.32	3.39	—	3.39	3.17	—	3.17	—	32,687	32,687	1.32	0.26	—	32,797
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	0.66	1.16	< 0.005	0.03	—	0.03	0.03	—	0.03	—	269	269	0.01	< 0.005	—	270
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.21	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	44.5	44.5	< 0.005	< 0.005	—	44.6
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.4. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.78	6.76	29.2	220	0.43	1.21	—	1.21	1.21	—	1.21	—	44,364	44,364	1.79	0.35	—	44,514
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	0.24	1.81	< 0.005	0.01	—	0.01	0.01	—	0.01	—	365	365	0.01	< 0.005	—	366

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	60.4	60.4	< 0.005	< 0.005	—	60.6
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.24	11.2	17.0	0.03	0.40	—	0.40	0.37	—	0.37	—	3,405	3,405	0.14	0.03	—	3,416
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.7	18.7	< 0.005	< 0.005	—	18.7
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.09	3.09	< 0.005	< 0.005	—	3.10
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.6. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.94	0.85	8.69	22.0	0.03	0.37	—	0.37	0.33	—	0.33	—	3,110	3,110	0.13	0.03	—	3,120
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.05	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.0	17.0	< 0.005	< 0.005	—	17.1
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.82	2.82	< 0.005	< 0.005	—	2.83
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.55	5.36	4.45	0.01	0.22	—	0.22	0.21	—	0.21	—	975	975	0.04	0.01	—	978
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.67	2.67	< 0.005	< 0.005	—	2.68
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.44	0.44	< 0.005	< 0.005	—	0.44
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.8. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	0.93	5.55	0.01	0.02	—	0.02	0.02	—	0.02	—	975	975	0.04	0.01	—	978
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.67	2.67	< 0.005	< 0.005	—	2.68
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.44	0.44	< 0.005	< 0.005	—	0.44
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00

Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.9. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	4.26	3.72	0.01	0.16	—	0.16	0.15	—	0.15	—	857	857	0.03	0.01	—	859
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.04	7.04	< 0.005	< 0.005	—	7.06
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.17	1.17	< 0.005	< 0.005	—	1.17

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

3.10. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.10	0.10	1.55	4.81	0.01	0.02	—	0.02	0.02	—	0.02	—	857	857	0.03	0.01	—	859
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.04	7.04	< 0.005	< 0.005	—	7.06
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.17	1.17	< 0.005	< 0.005	—	1.17
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	0.00
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3,457	3,457	0.56	0.07	—	3,491
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,457	3,457	0.56	0.07	—	3,491
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3,457	3,457	0.56	0.07	—	3,491
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,457	3,457	0.56	0.07	—	3,491
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	572	572	0.09	0.01	—	578
Total	—	—	—	—	—	—	—	—	—	—	—	—	572	572	0.09	0.01	—	578

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3,457	3,457	0.56	0.07	—	3,491
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,457	3,457	0.56	0.07	—	3,491
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3,457	3,457	0.56	0.07	—	3,491
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,457	3,457	0.56	0.07	—	3,491
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	572	572	0.09	0.01	—	578
Total	—	—	—	—	—	—	—	—	—	—	—	—	572	572	0.09	0.01	—	578

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Total	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Total	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	7.87	0.00	7.87	0.79	0.00	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	7.87	0.00	7.87	0.79	0.00	—	27.5

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Total	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Total	—	—	—	—	—	—	—	—	—	—	—	47.5	0.00	47.5	4.75	0.00	—	166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	7.87	0.00	7.87	0.79	0.00	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	7.87	0.00	7.87	0.79	0.00	—	27.5

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Highway Trucks	0.16	0.13	0.90	1.05	< 0.005	0.03	—	0.03	0.03	—	0.03	—	372	372	0.02	< 0.005	—	374
Bore/Drill Rigs	0.78	0.66	5.08	6.50	0.03	0.18	—	0.18	0.17	—	0.17	—	3,455	3,455	0.14	0.03	—	3,466
Total	0.94	0.79	5.99	7.54	0.04	0.22	—	0.22	0.20	—	0.20	—	3,827	3,827	0.16	0.03	—	3,840
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Highway Trucks	0.16	0.13	0.90	1.05	< 0.005	0.03	—	0.03	0.03	—	0.03	—	372	372	0.02	< 0.005	—	374
Bore/Drill Rigs	0.78	0.66	5.08	6.50	0.03	0.18	—	0.18	0.17	—	0.17	—	3,455	3,455	0.14	0.03	—	3,466
Total	0.94	0.79	5.99	7.54	0.04	0.22	—	0.22	0.20	—	0.20	—	3,827	3,827	0.16	0.03	—	3,840
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-High Trucks	0.02	0.02	0.12	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.9	43.9	< 0.005	< 0.005	—	44.1
Bore/Drill Rigs	0.06	0.05	0.39	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	238	238	0.01	< 0.005	—	239
Total	0.08	0.07	0.50	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	282	282	0.01	< 0.005	—	283

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Highway Trucks	0.16	0.13	0.90	1.05	< 0.005	0.03	—	0.03	0.03	—	0.03	—	372	372	0.02	< 0.005	—	374
Bore/Drill Rigs	0.78	0.66	5.08	6.50	0.03	0.18	—	0.18	0.17	—	0.17	—	3,455	3,455	0.14	0.03	—	3,466
Total	0.94	0.79	5.99	7.54	0.04	0.22	—	0.22	0.20	—	0.20	—	3,827	3,827	0.16	0.03	—	3,840
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Highway Trucks	0.16	0.13	0.90	1.05	< 0.005	0.03	—	0.03	0.03	—	0.03	—	372	372	0.02	< 0.005	—	374
Bore/Drill Rigs	0.78	0.66	5.08	6.50	0.03	0.18	—	0.18	0.17	—	0.17	—	3,455	3,455	0.14	0.03	—	3,466
Total	0.94	0.79	5.99	7.54	0.04	0.22	—	0.22	0.20	—	0.20	—	3,827	3,827	0.16	0.03	—	3,840
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Highway Trucks	0.02	0.02	0.12	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.9	43.9	< 0.005	< 0.005	—	44.1

Bore/Drill Rigs	0.06	0.05	0.39	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	238	238	0.01	< 0.005	—	239
Total	0.08	0.07	0.50	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	282	282	0.01	< 0.005	—	283

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	5/7/2024	5/13/2024	5.00	5.00	Site prep and grading
Well Drilling	Building Construction	5/14/2024	5/16/2024	6.00	3.00	Well drilling
Well Completion	Building Construction	5/17/2024	5/18/2024	6.00	2.00	Well completion
Installation of Ancillary Equipment	Building Construction	5/21/2024	5/21/2024	5.00	1.00	Install ancillary equipment
Installation of Flowlines	Building Construction	5/22/2024	5/24/2024	5.00	3.00	Install flowlines

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	4.00	228	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	4.00	230	0.37
Site Preparation	Off-Highway Trucks	Diesel	Average	1.00	1.00	365	38.0
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	0.40	350	0.38
Site Preparation	Off-Highway Trucks	Diesel	Average	1.00	0.20	150	0.38
Site Preparation	Bore/Drill Rigs	Diesel	Average	1.00	0.80	450	0.50
Site Preparation	Graders	Diesel	Average	1.00	2.00	148	0.41
Well Drilling	Bore/Drill Rigs	Diesel	Tier 4 Interim	1.00	11.4	1,338	0.20
Well Drilling	Pumps	Diesel	Average	2.00	18.0	665	0.37
Well Drilling	Generator Sets	Diesel	Average	1.00	7.00	16.5	0.45
Well Drilling	Cranes	Diesel	Average	1.00	0.67	185	0.29
Well Drilling	Off-Highway Trucks	Diesel	Average	2.00	8.00	385	0.38
Well Drilling	Off-Highway Trucks	Diesel	Average	3.00	1.17	350	0.38
Well Drilling	Off-Highway Trucks	Diesel	Average	2.00	0.17	150	0.38
Well Drilling	Off-Highway Trucks	Diesel	Average	2.00	2.00	400	0.38

Well Drilling	Off-Highway Trucks	Diesel	Average	1.00	2.67	300	0.38
Well Drilling	Off-Highway Trucks	Diesel	Average	1.00	2.00	485	0.38
Well Drilling	Off-Highway Trucks	Diesel	Average	1.00	1.00	425	0.38
Well Drilling	Off-Highway Trucks	Diesel	Average	7.00	0.20	150	0.38
Well Drilling	Generator Sets	Diesel	Tier 4 Interim	1.00	15.3	1,053	0.74
Well Completion	Bore/Drill Rigs	Diesel	Tier 4 Interim	1.00	5.00	345	0.50
Well Completion	Generator Sets	Diesel	Average	1.00	5.00	4.00	0.74
Well Completion	Off-Highway Trucks	Diesel	Average	3.00	4.00	150	0.38
Well Completion	Cranes	Diesel	Average	2.00	2.00	185	0.29
Well Completion	Off-Highway Trucks	Diesel	Average	1.00	2.50	150	0.38
Well Completion	Off-Highway Trucks	Diesel	Average	1.00	2.00	385	0.38
Well Completion	Pumps	Diesel	Average	1.00	1.50	665	0.74
Installation of Ancillary Equipment	Welders	Diesel	Average	1.00	4.00	46.0	0.45
Installation of Ancillary Equipment	Cranes	Diesel	Average	1.00	10.0	185	0.29
Installation of Ancillary Equipment	Tractors/Loaders/Backhoes	Diesel	Average	2.00	3.00	89.0	0.37
Installation of Ancillary Equipment	Off-Highway Trucks	Diesel	Average	1.00	0.25	150	0.38
Installation of Flowlines	Cranes	Diesel	Average	1.00	5.00	185	0.29
Installation of Flowlines	Welders	Diesel	Average	1.00	10.0	46.0	0.45
Installation of Flowlines	Off-Highway Trucks	Diesel	Average	1.00	1.50	430	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	4.00	228	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	4.00	230	0.37

Site Preparation	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	1.00	365	38.0
Site Preparation	Off-Highway Trucks	Diesel	Average	1.00	0.40	350	0.38
Site Preparation	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	0.40	350	0.38
Site Preparation	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	0.20	150	0.38
Site Preparation	Bore/Drill Rigs	Diesel	Tier 4 Final	1.00	0.80	450	0.50
Site Preparation	Graders	Diesel	Tier 4 Final	1.00	2.00	148	0.41
Well Drilling	Bore/Drill Rigs	Diesel	Tier 4 Final	1.00	11.4	1,338	0.20
Well Drilling	Pumps	Diesel	Tier 4 Final	2.00	18.0	665	0.37
Well Drilling	Generator Sets	Diesel	Average	1.00	7.00	16.5	0.45
Well Drilling	Cranes	Diesel	Tier 4 Final	1.00	0.67	185	0.29
Well Drilling	Off-Highway Trucks	Diesel	Tier 4 Final	7.00	8.00	385	0.38
Well Drilling	Off-Highway Trucks	Diesel	Tier 4 Final	7.00	1.17	350	0.38
Well Drilling	Off-Highway Trucks	Diesel	Tier 4 Final	7.00	0.17	150	0.38
Well Drilling	Off-Highway Trucks	Diesel	Tier 4 Final	7.00	2.00	400	0.38
Well Drilling	Off-Highway Trucks	Diesel	Tier 4 Final	7.00	2.67	300	0.38
Well Drilling	Off-Highway Trucks	Diesel	Tier 4 Final	7.00	2.00	485	0.38
Well Drilling	Off-Highway Trucks	Diesel	Tier 4 Final	7.00	1.00	425	0.38
Well Drilling	Off-Highway Trucks	Diesel	Tier 4 Final	7.00	0.20	150	0.38
Well Drilling	Generator Sets	Diesel	Tier 4 Interim	1.00	15.3	1,053	0.74
Well Completion	Bore/Drill Rigs	Diesel	Tier 3	1.00	5.00	345	0.50
Well Completion	Generator Sets	Diesel	Average	1.00	5.00	4.00	0.74
Well Completion	Off-Highway Trucks	Diesel	Average	2.00	4.00	150	0.38
Well Completion	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	4.00	150	0.38
Well Completion	Cranes	Diesel	Tier 4 Final	2.00	2.00	185	0.29
Well Completion	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	2.50	150	0.38
Well Completion	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	2.00	385	0.38
Well Completion	Pumps	Diesel	Tier 4 Final	1.00	1.50	665	0.74

Installation of Ancillary Equipment	Welders	Diesel	Tier 4 Final	1.00	4.00	46.0	0.45
Installation of Ancillary Equipment	Cranes	Diesel	Tier 4 Final	1.00	10.0	185	0.29
Installation of Ancillary Equipment	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	3.00	89.0	0.37
Installation of Ancillary Equipment	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	0.25	150	0.38
Installation of Flowlines	Cranes	Diesel	Tier 4 Final	1.00	5.00	185	0.29
Installation of Flowlines	Welders	Diesel	Tier 4 Final	1.00	10.0	46.0	0.45
Installation of Flowlines	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	1.50	430	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	17.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.6	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Well Drilling	—	—	—	—
Well Drilling	Worker	0.00	17.3	LDA,LDT1,LDT2
Well Drilling	Vendor	0.00	10.6	HHDT,MHDT
Well Drilling	Hauling	0.00	20.0	HHDT
Well Drilling	Onsite truck	—	—	HHDT
Well Completion	—	—	—	—
Well Completion	Worker	0.00	17.3	LDA,LDT1,LDT2
Well Completion	Vendor	0.00	10.6	HHDT,MHDT

Well Completion	Hauling	0.00	20.0	HHDT
Well Completion	Onsite truck	—	—	HHDT
Installation of Ancillary Equipment	—	—	—	—
Installation of Ancillary Equipment	Worker	0.00	17.3	LDA,LDT1,LDT2
Installation of Ancillary Equipment	Vendor	0.00	10.6	HHDT,MHDT
Installation of Ancillary Equipment	Hauling	0.00	20.0	HHDT
Installation of Ancillary Equipment	Onsite truck	—	—	HHDT
Installation of Flowlines	—	—	—	—
Installation of Flowlines	Worker	0.00	17.3	LDA,LDT1,LDT2
Installation of Flowlines	Vendor	0.00	10.6	HHDT,MHDT
Installation of Flowlines	Hauling	0.00	20.0	HHDT
Installation of Flowlines	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	17.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.6	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Well Drilling	—	—	—	—
Well Drilling	Worker	0.00	17.3	LDA,LDT1,LDT2
Well Drilling	Vendor	0.00	10.6	HHDT,MHDT
Well Drilling	Hauling	0.00	20.0	HHDT
Well Drilling	Onsite truck	—	—	HHDT
Well Completion	—	—	—	—
Well Completion	Worker	0.00	17.3	LDA,LDT1,LDT2

Well Completion	Vendor	0.00	10.6	HHDT,MHDT
Well Completion	Hauling	0.00	20.0	HHDT
Well Completion	Onsite truck	—	—	HHDT
Installation of Ancillary Equipment	—	—	—	—
Installation of Ancillary Equipment	Worker	0.00	17.3	LDA,LDT1,LDT2
Installation of Ancillary Equipment	Vendor	0.00	10.6	HHDT,MHDT
Installation of Ancillary Equipment	Hauling	0.00	20.0	HHDT
Installation of Ancillary Equipment	Onsite truck	—	—	HHDT
Installation of Flowlines	—	—	—	—
Installation of Flowlines	Worker	0.00	17.3	LDA,LDT1,LDT2
Installation of Flowlines	Vendor	0.00	10.6	HHDT,MHDT
Installation of Flowlines	Hauling	0.00	20.0	HHDT
Installation of Flowlines	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Installation of Ancillary Equipment	0.00	0.00	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	0.66	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	8.00	0.00	0.00	2,086	368	0.00	0.00	95,943

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	8.00	0.00	0.00	2,086	368	0.00	0.00	95,943

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	0.00

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	0.00

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	6,186,020	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	6,186,020	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)

General Light Industry	88.2	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	88.2	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.00	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.00	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Off-Highway Trucks	Diesel	Average	3.00	0.25	150	0.38
Off-Highway Trucks	Diesel	Average	1.00	2.00	365	0.38
Bore/Drill Rigs	Diesel	Average	1.00	12.0	500	0.50

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Off-Highway Trucks	Diesel	Average	3.00	0.25	150	0.38
Off-Highway Trucks	Diesel	Average	1.00	2.00	365	0.38
Bore/Drill Rigs	Diesel	Average	1.00	12.0	500	0.50

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	24.1	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	12.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	0	N/A
Drought	5	1	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	1	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A

Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	5	1	1	4
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	1	1	4

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	70.7
AQ-PM	52.1
AQ-DPM	6.86
Drinking Water	99.3
Lead Risk Housing	57.5
Pesticides	85.8
Toxic Releases	51.6
Traffic	4.11
Effect Indicators	—

CleanUp Sites	68.9
Groundwater	96.0
Haz Waste Facilities/Generators	61.6
Impaired Water Bodies	43.8
Solid Waste	96.4
Sensitive Population	—
Asthma	24.1
Cardio-vascular	66.2
Low Birth Weights	54.3
Socioeconomic Factor Indicators	—
Education	98.9
Housing	40.3
Linguistic	99.9
Poverty	96.4
Unemployment	62.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	4.119081227
Employed	43.12844861
Median HI	9.790837931
Education	—
Bachelor's or higher	0.988066213
High school enrollment	20.23610933
Preschool enrollment	12.16476325

Transportation	—
Auto Access	66.18760426
Active commuting	40.83151546
Social	—
2-parent households	86.37238547
Voting	23.14897985
Neighborhood	—
Alcohol availability	58.96317208
Park access	12.498396
Retail density	0.333632747
Supermarket access	58.5268831
Tree canopy	5.594764532
Housing	—
Homeownership	23.05915565
Housing habitability	28.05081483
Low-inc homeowner severe housing cost burden	41.69126139
Low-inc renter severe housing cost burden	89.23392788
Uncrowded housing	12.0107789
Health Outcomes	—
Insured adults	20.30026947
Arthritis	0.0
Asthma ER Admissions	61.1
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0

Diagnosed Diabetes	0.0
Life Expectancy at Birth	5.5
Cognitively Disabled	99.0
Physically Disabled	97.9
Heart Attack ER Admissions	44.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	1.1
Elderly	98.6
English Speaking	0.9
Foreign-born	89.7
Outdoor Workers	0.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	93.3
Traffic Density	8.5
Traffic Access	0.0

Other Indices	—
Hardship	92.6
Other Decision Support	—
2016 Voting	13.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	86.0
Healthy Places Index Score for Project Location (b)	16.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	No buildings are proposed, project energy use is manually input

Construction: Construction Phases	Assume well pads are prepped in same year as corresponding well. Emissions are calculated on a per-well basis (one well - will be multiplied by number of wells drilled per year) Demolition is not required. Site preparation and grading is combined as a single phase (5 days per well pad, total of 380 days for all 76 well pads) - assume site preparation occurs 5 days/week Well drilling operations are assumed 24-hour operations (2.25 days per well, total of 171 days for all 76 wells) - assume well drilling occurs 6 days/week Well completion operations are assumed 24-hour operations (1.2 days per well, total of 91.2 days for all 76 wells) - assume well completion occurs 6 days/week Installation of production/ancillary equipment are assumed 12 hours/day (1 day per well, 76 days total for all 76 wells) - assume construction occurs 5 days/week Installation of flowlines are assumed 12 hours/day (3 days per well, 228 days total for all 76 wells) - assume construction occurs 5 days/week
Construction: Off-Road Equipment	Site prep: Rat hole rig operation (4 hours total) amortized over 5-day phase (0.8 hours/day); mobilization amortized over 5-day phase (0.4 hours/day each) Drilling: Total Equipment hours amortized over 3-day phase with 24-hour operations Well Completion: Total Equipment hours amortized over 2-day phase with 24-hour operations Installation of flowlines: Assume maximum duration for all well types (i.e., producers)
Construction: Dust From Material Movement	Assume graded area for each well pad is approximately 0.66 acres
Construction: On-Road Fugitive Dust	Onroad travel is primarily on paved roads with exception of access to well pads (assume 0.25 miles from paved road to project site on dirt roads)
Operations: Road Dust	Assume travel primarily on paved roads with exception of access to well pad (assume 0.25 miles to well pad on unpaved roads)
Operations: Landscape Equipment	No landscape emissions associated with proposed project
Operations: Energy Use	Estimated daily electricity use at each well is assumed to be 223 kWh/day (assume energy consumption 365 days/year for annual electricity consumption of 81,395 kWh/year per well, multiplied by 76=)
Operations: Water and Waste Water	No indoor water use as part of proposed project. Outdoor water use consists of dust suppression which would not change from existing operations. There would be no change to wastewater generation from existing operations.
Operations: Solid Waste	Assume one workover per well per year - solid waste generated during workover operations is assumed to be 3 bbls waste workover fluids per year per well (assume density of roughly 0.4 tons/bbl - for total of 1.2 tons/year [equivalent to 0.04 tons/unit/year] per well). Solid waste generation for workover of all 76 wells would be equivalent to 3.04 tons/unit/year)
Operations: Refrigerants	No refrigerants as part of proposed project

Operations: Off-Road Equipment	Operation emissions are for all 76 wells annually. Assume 2 days workover per well (152 days for all 76 wells). Assume water truck is used throughout the project area 4 hours per day on all weekdays. Passenger car/pickup operation is based on one trip per day with access to the site on weekdays.
Construction: Off-Road Equipment EF	Generator set (1085 hp) emission factors from AP-42, non-emergency engine (prime) >751 hp, model year 2014 or newer and/or Tier 4 Interim standards for engines >761 hp

Attachment B

Prioritization Score Calculations

Calculated Prioritization Scores for Lost Hills Wells on Federal Land

Nearest Receptors >>>	Nearest Commercial Property Line	Lost Hills Elementary School	A. M. Thomas Middle School	Nearest Residential Property Line
Distance from Well 12-5D (ft) >>>	5,325	7,340	7,980	8,470
Distance from Well 12-5D (m) >>>	1,623	2,237	2,432	2,582
Proximity Factors	0.002	0.001	0.001	0.001
Construction - Cancer Score	14	14	14	14
Workover Mobile - Cancer Score	1.9	1.9	1.9	1.9
Workover Off-Road - Cancer Score	85	85	85	85
Construction - Chronic Score	0.021	0.021	0.021	0.021
Workover Mobile - Chronic Score	0.0027	0.0027	0.0027	0.0027
Workover Off-Road - Chronic Score	0.13	0.13	0.13	0.13
Construction - Prioritization Cancer Score	0.03	0.014	0.014	0.014
Workover Mobile - Prioritization Cancer Score	0.004	0.0019	0.0019	0.0019
Workover Off-Road - Prioritization Cancer Score	0.2	0.08	0.08	0.08
Construction - Prioritization Chronic Score	0.00004	0.000021	0.000021	0.000021
Workover Mobile - Prioritization Chronic Score	0.00001	0.0000027	0.0000027	0.0000027
Workover Off-Road - Prioritization Chronic Score	0.0003	0.00013	0.00013	0.00013

NOTES:
Project-related PM10E emission rates as provided by CalEEMod are as follows:

Mitigated Construction Emission Rates			
	Maximum summer/winter:	0.05040843	lbs/hr
	Annual average:	6.125857203	lbs/yr
Mitigated Workover Emission Rates - Mobile			
	Maximum summer/winter:	0.000128242	lbs/hr
	Annual average:	0.802335514	lbs/yr
Mitigated Workover Emission Rates - Off-Road			
	Maximum summer/winter:	0.009045895	lbs/hr
	Annual average:	36.6710275	lbs/yr

Name

Prioritization Calculator

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.				
Author or updater	Matthew Cegielski	*Last Update*	December 1, 2022		
Facility:					
ID#:					
Project #:					
Unit and Process#	1-0 p1				
Operating Hours hr/yr	8,760.00				

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	**1.000**	1.01E+02	1.49E-01	0.00E+00	1.01E+02
100≤R<250	**0.250**	2.52E+01	3.73E-02	0.00E+00	2.52E+01
250≤R<500	**0.040**	4.03E+00	5.97E-03	0.00E+00	4.03E+00
500≤R<1000	**0.011**	1.11E+00	1.64E-03	0.00E+00	1.11E+00
1000≤R<1500	**0.003**	3.02E-01	4.48E-04	0.00E+00	3.02E-01
1500≤R<2000	**0.002**	2.01E-01	2.99E-04	0.00E+00	2.01E-01
2000<R	**0.001**	1.01E-01	1.49E-04	0.00E+00	1.01E-01

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	CAS# Finder
Wood preservatives (containing arsenic and chromate)	1206

1-0 p1

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	CAS#	MW Correction	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Corrected Annual Emissions (lbs/yr)	Corrected Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	**1.0000**	6.13E+00	5.04E-02	6.13E+00	5.04E-02	6.99E-04	1.42E+01	2.10E-02	0.00E+00
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	**1.0000**	8.02E-01	1.28E-04	8.02E-01	1.28E-04	9.16E-05	1.85E+00	2.75E-03	0.00E+00
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	**1.0000**	3.67E+01	9.05E-03	3.67E+01	9.05E-03	4.19E-03	8.47E+01	1.26E-01	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
							Totals	**1.01E+02**	**1.49E-01**	**0.00E+00**