
APPENDIX F-2

Air Quality Technical Appendix
CalEEMod Construction and Operational Emissions Calculations –
Existing and Proposed Conditions

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“Remarks” for the Oliveira Dairy Expansion Project CalEEMod (v.2016.3.2) Model Runs

“Remarks” are typically used in California Emissions Estimator Model (CalEEMod) to explain non-default inputs. For the current modeling, this document replaces the “remarks” section of the referenced CalEEMod model to provide more space to both identify non-default inputs and to explain how CalEEMod is used to calculate emissions for the current project. When defaults were retained and no further explanation was necessary, no “remarks” are recorded below.

Oliveira Dairy Model Run – Existing Baseline Operations (2018)

The Initial Study / Notice of Preparation was issued in July 2018, setting the baseline operations for the proposed project.

Land Use

- The General Light Industrial land use subtype was used to represent the dairy project, an industrial agriculture project. According to the project materials, the existing dairy facilities are located on approximately 22 acres with approximately 104,100 square feet of buildings. There are four existing residences.

Construction Phase

- This is an operational model only. Construction phases were deleted.

Vehicle Trips

- Because the residences are employee or owner residences on a working dairy, trip rate was modified to two trips per residence, with no Home-Work trips. Dairies operate 7 days a week. The existing operations generate approximately 16 average daily trips (ADTs) in addition to 8 residential trips (or 0.154 trips per 1,000 square feet).

Oliveira Dairy Model Run – Construction

Land Use

- With implementation of the proposed dairy expansion, new structures would consist of approximately 215,000 square feet of construction. The expansion would occur over seven acres.

Construction Phase

- Construction anticipated to begin in summer 2019. To calculate the worst-case scenario, all project components were constructed in one phase of 1.5 years.
- Off-road Equipment - While there would likely be a small construction crew, default equipment was used since construction details are unknown at this time.
- Existing milking parlor and three residences would be demolished.

Vehicle Trips

- This is a construction model only. Operational data can be disregarded.

Oliveira Dairy Model Run – Proposed Operations (2020)

Land Use

- The General Light Industrial land use subtype was used to represent the dairy project, an industrial agriculture project. According to the project materials, the proposed dairy facilities would be located on approx. 29 acres with approx. 312,700 square feet of roofed structures. There would be one residence remaining with implementation of the proposed project.

Construction Phase

- This is an operational model only. Most construction phases were deleted.

Vehicle Trips

- Because the residences are employee or owner residences on a working dairy, trip rate was modified to two trips per residence, with no Home-Work trips. Dairies operate 7 days a week. The proposed operations would generate approximately 38 ADTs in addition to 2 residential trips (or 0.122 trips per 1,000 square feet).

Oliveira Existing Baseline - Merced County, Annual

Oliveira Existing Baseline
Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	104.10	1000sqft	21.30	104,100.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,800.00	3
Mobile Home Park	3.00	Dwelling Unit	0.38	3,600.00	9

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - See remarks

Construction Phase - Operational model only.

Off-road Equipment - See remarks

Vehicle Trips - See remarks

Oliveira Existing Baseline - Merced County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	PhaseEndDate	3/30/2018	3/2/2018
tblLandUse	LotAcreage	2.39	21.30
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	ST_TR	1.32	0.15
tblVehicleTrips	ST_TR	5.00	2.00
tblVehicleTrips	ST_TR	9.91	2.00
tblVehicleTrips	SU_TR	0.68	0.15
tblVehicleTrips	SU_TR	4.36	2.00
tblVehicleTrips	SU_TR	8.62	2.00
tblVehicleTrips	WD_TR	6.97	0.15
tblVehicleTrips	WD_TR	4.99	2.00
tblVehicleTrips	WD_TR	9.52	2.00
tblWoodstoves	NumberCatalytic	0.38	0.00
tblWoodstoves	NumberCatalytic	0.32	0.00
tblWoodstoves	NumberNoncatalytic	0.38	0.00
tblWoodstoves	NumberNoncatalytic	0.32	0.00

2.0 Emissions Summary

Oliveira Existing Baseline - Merced County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5063	1.8500e-003	0.0315	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	1.7832	1.7832	9.0000e-005	3.0000e-005	1.7948
Energy	0.0121	0.1101	0.0910	6.6000e-004		8.3800e-003	8.3800e-003		8.3800e-003	8.3800e-003	0.0000	394.6808	394.6808	0.0147	4.7700e-003	396.4703
Mobile	0.0158	0.1776	0.1787	6.8000e-004	0.0356	9.7000e-004	0.0365	9.5900e-003	9.2000e-004	0.0105	0.0000	63.0573	63.0573	4.8600e-003	0.0000	63.1789
Waste						0.0000	0.0000		0.0000	0.0000	26.7014	0.0000	26.7014	1.5780	0.0000	66.1517
Water						0.0000	0.0000		0.0000	0.0000	7.7200	38.4716	46.1915	0.7947	0.0191	71.7445
Total	0.5342	0.2895	0.3012	1.3500e-003	0.0356	9.6400e-003	0.0452	9.5900e-003	9.5900e-003	0.0192	34.4214	497.9929	532.4143	2.3923	0.0239	599.3401

Oliveira Existing Baseline - Merced County, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5063	1.8500e-003	0.0315	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	1.7832	1.7832	9.0000e-005	3.0000e-005	1.7948
Energy	0.0121	0.1101	0.0910	6.6000e-004		8.3800e-003	8.3800e-003		8.3800e-003	8.3800e-003	0.0000	394.6808	394.6808	0.0147	4.7700e-003	396.4703
Mobile	0.0158	0.1776	0.1787	6.8000e-004	0.0356	9.7000e-004	0.0365	9.5900e-003	9.2000e-004	0.0105	0.0000	63.0573	63.0573	4.8600e-003	0.0000	63.1789
Waste						0.0000	0.0000		0.0000	0.0000	26.7014	0.0000	26.7014	1.5780	0.0000	66.1517
Water						0.0000	0.0000		0.0000	0.0000	7.7200	38.4716	46.1915	0.7947	0.0191	71.7445
Total	0.5342	0.2895	0.3012	1.3500e-003	0.0356	9.6400e-003	0.0452	9.5900e-003	9.5900e-003	0.0192	34.4214	497.9929	532.4143	2.3923	0.0239	599.3401

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/3/2018	3/2/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Oliveira Existing Baseline - Merced County, Annual

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 10,935; Residential Outdoor: 3,645; Non-Residential Indoor: 156,150; Non-Residential Outdoor: 52,050; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	9.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Oliveira Existing Baseline - Merced County, Annual

3.2 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

Oliveira Existing Baseline - Merced County, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0158	0.1776	0.1787	6.8000e-004	0.0356	9.7000e-004	0.0365	9.5900e-003	9.2000e-004	0.0105	0.0000	63.0573	63.0573	4.8600e-003	0.0000	63.1789
Unmitigated	0.0158	0.1776	0.1787	6.8000e-004	0.0356	9.7000e-004	0.0365	9.5900e-003	9.2000e-004	0.0105	0.0000	63.0573	63.0573	4.8600e-003	0.0000	63.1789

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	16.03	16.03	16.03	61,937	61,937
Mobile Home Park	6.00	6.00	6.00	23,140	23,140
Single Family Housing	2.00	2.00	2.00	7,713	7,713
Total	24.03	24.03	24.03	92,790	92,790

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Mobile Home Park	16.80	7.10	7.90	46.90	17.40	35.70	86	11	3
Single Family Housing	16.80	7.10	7.90	46.90	17.40	35.70	86	11	3

Oliveira Existing Baseline - Merced County, Annual

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.469224	0.034275	0.155308	0.134345	0.025022	0.005738	0.015476	0.146405	0.002349	0.002583	0.006772	0.001689	0.000813
Mobile Home Park	0.469224	0.034275	0.155308	0.134345	0.025022	0.005738	0.015476	0.146405	0.002349	0.002583	0.006772	0.001689	0.000813
Single Family Housing	0.469224	0.034275	0.155308	0.134345	0.025022	0.005738	0.015476	0.146405	0.002349	0.002583	0.006772	0.001689	0.000813

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	274.6359	274.6359	0.0124	2.5700e-003	275.7120
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	274.6359	274.6359	0.0124	2.5700e-003	275.7120
NaturalGas Mitigated	0.0121	0.1101	0.0910	6.6000e-004		8.3800e-003	8.3800e-003		8.3800e-003	8.3800e-003	0.0000	120.0449	120.0449	2.3000e-003	2.2000e-003	120.7583
NaturalGas Unmitigated	0.0121	0.1101	0.0910	6.6000e-004		8.3800e-003	8.3800e-003		8.3800e-003	8.3800e-003	0.0000	120.0449	120.0449	2.3000e-003	2.2000e-003	120.7583

Oliveira Existing Baseline - Merced County, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	2.17257e+006	0.0117	0.1065	0.0895	6.4000e-004		8.0900e-003	8.0900e-003		8.0900e-003	8.0900e-003	0.0000	115.9365	115.9365	2.2200e-003	2.1300e-003	116.6254
Mobile Home Park	50843.9	2.7000e-004	2.3400e-003	1.0000e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7132	2.7132	5.0000e-005	5.0000e-005	2.7294
Single Family Housing	26145.2	1.4000e-004	1.2000e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3952	1.3952	3.0000e-005	3.0000e-005	1.4035
Total		0.0121	0.1100	0.0910	6.6000e-004		8.3800e-003	8.3800e-003		8.3800e-003	8.3800e-003	0.0000	120.0449	120.0449	2.3000e-003	2.2100e-003	120.7583

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	2.17257e+006	0.0117	0.1065	0.0895	6.4000e-004		8.0900e-003	8.0900e-003		8.0900e-003	8.0900e-003	0.0000	115.9365	115.9365	2.2200e-003	2.1300e-003	116.6254
Mobile Home Park	50843.9	2.7000e-004	2.3400e-003	1.0000e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7132	2.7132	5.0000e-005	5.0000e-005	2.7294
Single Family Housing	26145.2	1.4000e-004	1.2000e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3952	1.3952	3.0000e-005	3.0000e-005	1.4035
Total		0.0121	0.1100	0.0910	6.6000e-004		8.3800e-003	8.3800e-003		8.3800e-003	8.3800e-003	0.0000	120.0449	120.0449	2.3000e-003	2.2100e-003	120.7583

Oliveira Existing Baseline - Merced County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	918162	267.1039	0.0121	2.5000e-003	268.1505
Mobile Home Park	17130.5	4.9835	2.3000e-004	5.0000e-005	5.0030
Single Family Housing	8760.74	2.5486	1.2000e-004	2.0000e-005	2.5586
Total		274.6359	0.0124	2.5700e-003	275.7120

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	918162	267.1039	0.0121	2.5000e-003	268.1505
Mobile Home Park	17130.5	4.9835	2.3000e-004	5.0000e-005	5.0030
Single Family Housing	8760.74	2.5486	1.2000e-004	2.0000e-005	2.5586
Total		274.6359	0.0124	2.5700e-003	275.7120

6.0 Area Detail

Oliveira Existing Baseline - Merced County, Annual

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5063	1.8500e-003	0.0315	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	1.7832	1.7832	9.0000e-005	3.0000e-005	1.7948
Unmitigated	0.5063	1.8500e-003	0.0315	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	1.7832	1.7832	9.0000e-005	3.0000e-005	1.7948

Oliveira Existing Baseline - Merced County, Annual

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0774					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4277					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.8000e-004	1.5000e-003	6.4000e-004	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7328	1.7328	3.0000e-005	3.0000e-005	1.7431
Landscaping	1.0100e-003	3.6000e-004	0.0309	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0504	0.0504	5.0000e-005	0.0000	0.0517
Total	0.5063	1.8600e-003	0.0315	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	1.7832	1.7832	8.0000e-005	3.0000e-005	1.7948

Oliveira Existing Baseline - Merced County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0774					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4277					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.8000e-004	1.5000e-003	6.4000e-004	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7328	1.7328	3.0000e-005	3.0000e-005	1.7431
Landscaping	1.0100e-003	3.6000e-004	0.0309	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0504	0.0504	5.0000e-005	0.0000	0.0517
Total	0.5063	1.8600e-003	0.0315	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	1.7832	1.7832	8.0000e-005	3.0000e-005	1.7948

7.0 Water Detail

7.1 Mitigation Measures Water

Oliveira Existing Baseline - Merced County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	46.1915	0.7947	0.0191	71.7445
Unmitigated	46.1915	0.7947	0.0191	71.7445

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	24.0731 / 0	45.5313	0.7861	0.0189	70.8099
Mobile Home Park	0.195462 / 0.123226	0.4952	6.3900e-003	1.5000e-004	0.7009
Single Family Housing	0.065154 / 0.0410754	0.1651	2.1300e-003	5.0000e-005	0.2336
Total		46.1915	0.7947	0.0191	71.7445

Oliveira Existing Baseline - Merced County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	24.0731 / 0	45.5313	0.7861	0.0189	70.8099
Mobile Home Park	0.195462 / 0.123226	0.4952	6.3900e-003	1.5000e-004	0.7009
Single Family Housing	0.065154 / 0.0410754	0.1651	2.1300e-003	5.0000e-005	0.2336
Total		46.1915	0.7947	0.0191	71.7445

8.0 Waste Detail

8.1 Mitigation Measures Waste

Oliveira Existing Baseline - Merced County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.7014	1.5780	0.0000	66.1517
Unmitigated	26.7014	1.5780	0.0000	66.1517

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	129.08	26.2021	1.5485	0.0000	64.9145
Mobile Home Park	1.38	0.2801	0.0166	0.0000	0.6940
Single Family Housing	1.08	0.2192	0.0130	0.0000	0.5431
Total		26.7014	1.5780	0.0000	66.1517

Oliveira Existing Baseline - Merced County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	129.08	26.2021	1.5485	0.0000	64.9145
Mobile Home Park	1.38	0.2801	0.0166	0.0000	0.6940
Single Family Housing	1.08	0.2192	0.0130	0.0000	0.5431
Total		26.7014	1.5780	0.0000	66.1517

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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Oliveira Existing Baseline - Merced County, Annual

11.0 Vegetation

Oliveira Dairy Expansion - Merced County, Annual

Oliveira Dairy Construction
Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	215.00	1000sqft	7.00	215,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - General Light Industrial used to represent dairy project. Project site acreage

Construction Phase - For the purposes of this analysis, estimated construction is assumed to be one phase of 1.5 years

Grading - Project site acres

Demolition - Existing milking parlor and three residences would be demolished

Vehicle Trips - Construction model only.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	290.00
tblConstructionPhase	NumDays	20.00	25.00

tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	10.00	12.00
tblConstructionPhase	PhaseEndDate	6/26/2020	10/23/2020
tblConstructionPhase	PhaseEndDate	6/28/2019	7/5/2019
tblConstructionPhase	PhaseEndDate	8/9/2019	9/16/2019
tblConstructionPhase	PhaseEndDate	7/12/2019	8/13/2019
tblConstructionPhase	PhaseStartDate	8/10/2019	9/16/2019
tblConstructionPhase	PhaseStartDate	7/13/2019	8/13/2019
tblConstructionPhase	PhaseStartDate	6/29/2019	7/29/2019
tblGrading	AcresOfGrading	12.50	7.00
tblLandUse	LotAcreage	4.94	7.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	ST_TR	1.32	0.07
tblVehicleTrips	SU_TR	0.68	0.07
tblVehicleTrips	WD_TR	6.97	0.07

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										M1/yr					
2019	0.2298	2.1736	1.5415	3.2400e-003	0.2498	0.1059	0.3557	0.1182	0.0987	0.2169	0.0000	291.8377	291.8377	0.0583	0.0000	293.2939
2020	0.3009	2.5233	2.3523	5.0400e-003	0.1412	0.1221	0.2633	0.0380	0.1148	0.1529	0.0000	447.8665	447.8665	0.0736	0.0000	449.7058
Maximum	0.3009	2.5233	2.3523	5.0400e-003	0.2498	0.1221	0.3557	0.1182	0.1148	0.2169	0.0000	447.8665	447.8665	0.0736	0.0000	449.7058

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										M1/yr					
2019	0.2298	2.1736	1.5415	3.2400e-003	0.2498	0.1059	0.3557	0.1182	0.0987	0.2169	0.0000	291.8374	291.8374	0.0583	0.0000	293.2937
2020	0.3009	2.5233	2.3523	5.0400e-003	0.1412	0.1221	0.2633	0.0380	0.1148	0.1529	0.0000	447.8662	447.8662	0.0736	0.0000	449.7055
Maximum	0.3009	2.5233	2.3523	5.0400e-003	0.2498	0.1221	0.3557	0.1182	0.1148	0.2169	0.0000	447.8662	447.8662	0.0736	0.0000	449.7055

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2019	8-31-2019	1.0866	1.0866
2	9-1-2019	11-30-2019	0.9713	0.9713
3	12-1-2019	2-29-2020	0.8941	0.8941
4	3-1-2020	5-31-2020	0.8717	0.8717
5	6-1-2020	8-31-2020	0.8705	0.8705
6	9-1-2020	9-30-2020	0.2839	0.2839
		Highest	1.0866	1.0866

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2019	7/5/2019	5	25	
2	Site Preparation	Site Preparation	7/29/2019	8/13/2019	5	12	

3	Grading	Grading	8/13/2019	9/16/2019	5	25
4	Building Construction	Building Construction	9/16/2019	10/23/2020	5	290

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	90.00	35.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	633.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
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3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road	0.0439	0.4473	0.2758	4.9000e-004		0.0224	0.0224		0.0209	0.0209	0.0000	43.2829	43.2829	0.0120	0.0000	43.5839
Total	0.0439	0.4473	0.2758	4.9000e-004		0.0224	0.0224		0.0209	0.0209	0.0000	43.2829	43.2829	0.0120	0.0000	43.5839

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling	2.7800e-003	0.0947	0.0139	2.6000e-004	5.4100e-003	3.6000e-004	5.7700e-003	1.4900e-003	3.5000e-004	1.8400e-003	0.0000	24.4037	24.4037	1.7300e-003	0.0000	24.4469
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	1.0200e-003	0.0102	2.0000e-005	2.3300e-003	2.0000e-005	2.3400e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	2.1610	2.1610	8.0000e-005	0.0000	2.1629
Total	4.0800e-003	0.0958	0.0241	2.8000e-004	7.7400e-003	3.8000e-004	8.1100e-003	2.1100e-003	3.7000e-004	2.4700e-003	0.0000	26.5646	26.5646	1.8100e-003	0.0000	26.6097

Mitigated Construction On-Site

Off-Road	0.0260	0.2734	0.1324	2.3000e-004		0.0143	0.0143		0.0132	0.0132	0.0000	20.5012	20.5012	6.4900e-003	0.0000	20.6634
Total	0.0260	0.2734	0.1324	2.3000e-004	0.1084	0.0143	0.1227	0.0596	0.0132	0.0728	0.0000	20.5012	20.5012	6.4900e-003	0.0000	20.6634

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.9000e-004	5.8900e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2447	1.2447	4.0000e-005	0.0000	1.2458
Total	7.5000e-004	5.9000e-004	5.8900e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2447	1.2447	4.0000e-005	0.0000	1.2458

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1084	0.0000	0.1084	0.0596	0.0000	0.0596	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0260	0.2734	0.1324	2.3000e-004		0.0143	0.0143		0.0132	0.0132	0.0000	20.5012	20.5012	6.4900e-003	0.0000	20.6634
Total	0.0260	0.2734	0.1324	2.3000e-004	0.1084	0.0143	0.1227	0.0596	0.0132	0.0728	0.0000	20.5012	20.5012	6.4900e-003	0.0000	20.6634

Mitigated Construction Off-Site

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	1.0200e-003	0.0102	2.0000e-005	2.3300e-003	2.0000e-005	2.3400e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	2.1610	2.1610	8.0000e-005	0.0000	2.1629
Total	1.3000e-003	1.0200e-003	0.0102	2.0000e-005	2.3300e-003	2.0000e-005	2.3400e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	2.1610	2.1610	8.0000e-005	0.0000	2.1629

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0790	0.0000	0.0790	0.0418	0.0000	0.0418	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0323	0.3544	0.2037	3.7000e-004		0.0175	0.0175		0.0161	0.0161	0.0000	33.3028	33.3028	0.0105	0.0000	33.5662
Total	0.0323	0.3544	0.2037	3.7000e-004	0.0790	0.0175	0.0965	0.0418	0.0161	0.0579	0.0000	33.3028	33.3028	0.0105	0.0000	33.5662

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	1.0200e-003	0.0102	2.0000e-005	2.3300e-003	2.0000e-005	2.3400e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	2.1610	2.1610	8.0000e-005	0.0000	2.1629
Total	1.3000e-003	1.0200e-003	0.0102	2.0000e-005	2.3300e-003	2.0000e-005	2.3400e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	2.1610	2.1610	8.0000e-005	0.0000	2.1629

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0909	0.8115	0.6608	1.0400e-003		0.0497	0.0497		0.0467	0.0467	0.0000	90.5151	90.5151	0.0221	0.0000	91.0664
Total	0.0909	0.8115	0.6608	1.0400e-003		0.0497	0.0497		0.0467	0.0467	0.0000	90.5151	90.5151	0.0221	0.0000	91.0664

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5400e-003	0.1708	0.0397	3.6000e-004	8.0700e-003	1.2000e-003	9.2700e-003	2.3300e-003	1.1500e-003	3.4800e-003	0.0000	34.3309	34.3309	3.7900e-003	0.0000	34.4257
Worker	0.0241	0.0188	0.1890	4.4000e-004	0.0430	3.4000e-004	0.0433	0.0114	3.1000e-004	0.0117	0.0000	39.9344	39.9344	1.4200e-003	0.0000	39.9699
Total	0.0306	0.1897	0.2287	8.0000e-004	0.0510	1.5400e-003	0.0526	0.0138	1.4600e-003	0.0152	0.0000	74.2653	74.2653	5.2100e-003	0.0000	74.3956

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0909	0.8115	0.6608	1.0400e-003		0.0497	0.0497		0.0467	0.0467	0.0000	90.5150	90.5150	0.0221	0.0000	91.0663
Total	0.0909	0.8115	0.6608	1.0400e-003		0.0497	0.0497		0.0467	0.0467	0.0000	90.5150	90.5150	0.0221	0.0000	91.0663

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5400e-003	0.1708	0.0397	3.6000e-004	8.0700e-003	1.2000e-003	9.2700e-003	2.3300e-003	1.1500e-003	3.4800e-003	0.0000	34.3309	34.3309	3.7900e-003	0.0000	34.4257
Worker	0.0241	0.0188	0.1890	4.4000e-004	0.0430	3.4000e-004	0.0433	0.0114	3.1000e-004	0.0117	0.0000	39.9344	39.9344	1.4200e-003	0.0000	39.9699
Total	0.0306	0.1897	0.2287	8.0000e-004	0.0510	1.5400e-003	0.0526	0.0138	1.4600e-003	0.0152	0.0000	74.2653	74.2653	5.2100e-003	0.0000	74.3956

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6646	246.6646	0.0602	0.0000	248.1691
Total	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6646	246.6646	0.0602	0.0000	248.1691

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0149	0.4342	0.0945	9.9000e-004	0.0223	2.2500e-003	0.0246	6.4500e-003	2.1500e-003	8.6000e-003	0.0000	94.1262	94.1262	9.9900e-003	0.0000	94.3760
Worker	0.0603	0.0458	0.4635	1.1900e-003	0.1189	8.9000e-004	0.1198	0.0316	8.2000e-004	0.0324	0.0000	107.0756	107.0756	3.4000e-003	0.0000	107.1607
Total	0.0752	0.4800	0.5579	2.1800e-003	0.1412	3.1400e-003	0.1443	0.0380	2.9700e-003	0.0410	0.0000	201.2018	201.2018	0.0134	0.0000	201.5367

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6643	246.6643	0.0602	0.0000	248.1688
Total	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6643	246.6643	0.0602	0.0000	248.1688

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0149	0.4342	0.0945	9.9000e-004	0.0223	2.2500e-003	0.0246	6.4500e-003	2.1500e-003	8.6000e-003	0.0000	94.1262	94.1262	9.9900e-003	0.0000	94.3760
Worker	0.0603	0.0458	0.4635	1.1900e-003	0.1189	8.9000e-004	0.1198	0.0316	8.2000e-004	0.0324	0.0000	107.0756	107.0756	3.4000e-003	0.0000	107.1607
Total	0.0752	0.4800	0.5579	2.1800e-003	0.1412	3.1400e-003	0.1443	0.0380	2.9700e-003	0.0410	0.0000	201.2018	201.2018	0.0134	0.0000	201.5367

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	312.70	1000sqft	28.68	312,700.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,800.00	3

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - See remarks

Construction Phase - Operational model only.

Off-road Equipment - See remarks

Vehicle Trips - See remarks

Trips and VMT - No construction

Architectural Coating - Not a construction model

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Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	156,350.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	469,050.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,215.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	3,645.00	0.00
tblConstructionPhase	NumDays	35.00	0.00
tblConstructionPhase	PhaseEndDate	7/22/2016	6/3/2016
tblLandUse	LotAcreage	7.18	28.68
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	26.00	0.00
tblVehicleTrips	ST_TR	1.32	0.12
tblVehicleTrips	ST_TR	9.91	2.00
tblVehicleTrips	SU_TR	0.68	0.12
tblVehicleTrips	SU_TR	8.62	2.00
tblVehicleTrips	WD_TR	6.97	0.12
tblVehicleTrips	WD_TR	9.52	2.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4544	1.4500e-003	0.0697	2.0000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003	1.2937	0.4509	1.7446	6.0800e-003	1.0000e-005	1.8990
Energy	0.0353	0.3211	0.2692	1.9300e-003		0.0244	0.0244		0.0244	0.0244	0.0000	1,154.5365	1,154.5365	0.0431	0.0139	1,159.7681
Mobile	0.0219	0.2669	0.2424	1.1000e-003	0.0594	1.2500e-003	0.0607	0.0160	1.1800e-003	0.0172	0.0000	102.1964	102.1964	7.8300e-003	0.0000	102.3921
Waste						0.0000	0.0000		0.0000	0.0000	78.9290	0.0000	78.9290	4.6646	0.0000	195.5432
Water						0.0000	0.0000		0.0000	0.0000	22.9619	113.9721	136.9340	2.3636	0.0568	212.9355
Total	1.5117	0.5895	0.5814	3.2300e-003	0.0594	0.0354	0.0948	0.0160	0.0353	0.0514	103.1845	1,371.1559	1,474.3405	7.0851	0.0707	1,672.5379

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4544	1.4500e-003	0.0697	2.0000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003	1.2937	0.4509	1.7446	6.0800e-003	1.0000e-005	1.8990
Energy	0.0353	0.3211	0.2692	1.9300e-003		0.0244	0.0244		0.0244	0.0244	0.0000	1,154.5365	1,154.5365	0.0431	0.0139	1,159.7681
Mobile	0.0219	0.2669	0.2424	1.1000e-003	0.0594	1.2500e-003	0.0607	0.0160	1.1800e-003	0.0172	0.0000	102.1964	102.1964	7.8300e-003	0.0000	102.3921
Waste						0.0000	0.0000		0.0000	0.0000	78.9290	0.0000	78.9290	4.6646	0.0000	195.5432
Water						0.0000	0.0000		0.0000	0.0000	22.9619	113.9721	136.9340	2.3636	0.0568	212.9355
Total	1.5117	0.5895	0.5814	3.2300e-003	0.0594	0.0354	0.0948	0.0160	0.0353	0.0514	103.1845	1,371.1559	1,474.3405	7.0851	0.0707	1,672.5379

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	6/5/2016	6/3/2016	5	0	

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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3.2 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0219	0.2669	0.2424	1.1000e-003	0.0594	1.2500e-003	0.0607	0.0160	1.1800e-003	0.0172	0.0000	102.1964	102.1964	7.8300e-003	0.0000	102.3921
Unmitigated	0.0219	0.2669	0.2424	1.1000e-003	0.0594	1.2500e-003	0.0607	0.0160	1.1800e-003	0.0172	0.0000	102.1964	102.1964	7.8300e-003	0.0000	102.3921

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	38.15	38.15	38.15	147,389	147,389
Single Family Housing	2.00	2.00	2.00	7,713	7,713
Total	40.15	40.15	40.15	155,102	155,102

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Single Family Housing	16.80	7.10	7.90	46.90	17.40	35.70	86	11	3

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.484945	0.031816	0.154973	0.120992	0.021332	0.005119	0.015709	0.151573	0.002377	0.002347	0.006486	0.001616	0.000714
Single Family Housing	0.484945	0.031816	0.154973	0.120992	0.021332	0.005119	0.015709	0.151573	0.002377	0.002347	0.006486	0.001616	0.000714

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	804.8865	804.8865	0.0364	7.5300e-003	808.0403
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	804.8865	804.8865	0.0364	7.5300e-003	808.0403
NaturalGas Mitigated	0.0353	0.3211	0.2692	1.9300e-003		0.0244	0.0244		0.0244	0.0244	0.0000	349.6500	349.6500	6.7000e-003	6.4100e-003	351.7278
NaturalGas Unmitigated	0.0353	0.3211	0.2692	1.9300e-003		0.0244	0.0244		0.0244	0.0244	0.0000	349.6500	349.6500	6.7000e-003	6.4100e-003	351.7278

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	6.52605e+006	0.0352	0.3199	0.2687	1.9200e-003		0.0243	0.0243		0.0243	0.0243	0.0000	348.2548	348.2548	6.6700e-003	6.3800e-003	350.3243
Single Family Housing	26145.2	1.4000e-004	1.2000e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3952	1.3952	3.0000e-005	3.0000e-005	1.4035
Total		0.0353	0.3211	0.2692	1.9300e-003		0.0244	0.0244		0.0244	0.0244	0.0000	349.6500	349.6500	6.7000e-003	6.4100e-003	351.7278

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	6.52605e+006	0.0352	0.3199	0.2687	1.9200e-003		0.0243	0.0243		0.0243	0.0243	0.0000	348.2548	348.2548	6.6700e-003	6.3800e-003	350.3243
Single Family Housing	26145.2	1.4000e-004	1.2000e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3952	1.3952	3.0000e-005	3.0000e-005	1.4035
Total		0.0353	0.3211	0.2692	1.9300e-003		0.0244	0.0244		0.0244	0.0244	0.0000	349.6500	349.6500	6.7000e-003	6.4100e-003	351.7278

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	2.75801e+006	802.3379	0.0363	7.5100e-003	805.4817
Single Family Housing	8760.74	2.5486	1.2000e-004	2.0000e-005	2.5586
Total		804.8865	0.0364	7.5300e-003	808.0403

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	2.75801e+006	802.3379	0.0363	7.5100e-003	805.4817
Single Family Housing	8760.74	2.5486	1.2000e-004	2.0000e-005	2.5586
Total		804.8865	0.0364	7.5300e-003	808.0403

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4544	1.4500e-003	0.0697	2.0000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003	1.2937	0.4509	1.7446	6.0800e-003	1.0000e-005	1.8990
Unmitigated	1.4544	1.4500e-003	0.0697	2.0000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003	1.2937	0.4509	1.7446	6.0800e-003	1.0000e-005	1.8990

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2191					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.5700e-003	1.3400e-003	0.0594	2.0000e-004		9.6900e-003	9.6900e-003		9.6900e-003	9.6900e-003	1.2937	0.4332	1.7269	6.0600e-003	1.0000e-005	1.8806
Landscaping	5.0000e-004	1.1000e-004	0.0103	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0177	0.0177	3.0000e-005	0.0000	0.0184
Total	1.4544	1.4500e-003	0.0697	2.0000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003	1.2937	0.4509	1.7446	6.0900e-003	1.0000e-005	1.8990

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2191					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.5700e-003	1.3400e-003	0.0594	2.0000e-004		9.6900e-003	9.6900e-003		9.6900e-003	9.6900e-003	1.2937	0.4332	1.7269	6.0600e-003	1.0000e-005	1.8806
Landscaping	5.0000e-004	1.1000e-004	0.0103	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0177	0.0177	3.0000e-005	0.0000	0.0184
Total	1.4544	1.4500e-003	0.0697	2.0000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003	1.2937	0.4509	1.7446	6.0900e-003	1.0000e-005	1.8990

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	136.9340	2.3636	0.0568	212.9355
Unmitigated	136.9340	2.3636	0.0568	212.9355

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	72.3119 / 0	136.7689	2.3614	0.0567	212.7018
Single Family Housing	0.065154 / 0.0410754	0.1651	2.1300e-003	5.0000e-005	0.2336
Total		136.9340	2.3636	0.0568	212.9355

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	72.3119 / 0	136.7689	2.3614	0.0567	212.7018
Single Family Housing	0.065154 / 0.0410754	0.1651	2.1300e-003	5.0000e-005	0.2336
Total		136.9340	2.3636	0.0568	212.9355

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	78.9290	4.6646	0.0000	195.5432
Unmitigated	78.9290	4.6646	0.0000	195.5432

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	387.75	78.7098	4.6516	0.0000	195.0001
Single Family Housing	1.08	0.2192	0.0130	0.0000	0.5431
Total		78.9290	4.6646	0.0000	195.5432

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	387.75	78.7098	4.6516	0.0000	195.0001
Single Family Housing	1.08	0.2192	0.0130	0.0000	0.5431
Total		78.9290	4.6646	0.0000	195.5432

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Oliveira Proposed - Merced County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

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