

**Appendix A:
Air Quality and Greenhouse Gas Emissions Supporting Information**

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1728.0023 Springtown Trunkline Sewer Replace Project CalEEMod Notes

Note A Construction schedule information was provided by the applicant and indicated that construction would begin no earlier than May 2024.

Note B The “land use” implemented by the proposed project would be a 24-inch sewer pipeline operated via gravity. The CalEEMod program does not include this land use. The onsite operations of the proposed project would not involve the combustion of fuels or any other sources that generate more than de minimis emissions of criteria pollutants. Therefore, the “Other Non-Asphalt Surfaces” land use type has been utilized as a placeholder for CalEEMod analysis. The land use size of 59,800 square feet reflects the 20 feet by 2,990 feet area of the City’s sewer easement, where the proposed 24-inch sewer pipeline would be installed. This land use type also reflects the maintenance access road that would be constructed within this easement.⁵

Note C The construction schedule is based on estimates from the applicant.

Site Preparation

First, one week of preparation activities may be required to install construction fencing around the perimeter of the project site and remove vegetation (if necessary).

Pipeline Installation

After this, installation of the new sewer pipeline would begin. Up to approximately 300 feet of new pipeline would be installed per workday. $2,990 \text{ feet} / 300 \text{ feet} =$ approximately 10 days of pipe installation. An additional few workdays would be required to “cut over” into the old line.

Demolition of Existing Pipeline

After the new sewer pipeline is operational, the existing pipeline would be demolished. This could take a minimum one week.

Access Road Construction

As demolition occurs, a new access road would be constructed to enable maintenance crews to access the new sewer pipeline.

Note D Construction equipment based on information from the applicant.

Note E 624 CY of imported material based on applicant information that up to 48 CY of pipeline bedding material would be imported per day. The 1.5 acres graded figure for site preparation phase assumes that approximately the entire area of the sewer easement may be disturbed for vegetation removal. The 3.0 acres graded figure for pipeline installation assumes that approximately the entire area of the sewer easement may be disturbed twice in the process of trenching then backfilling for pipeline installation. In reality, the figure is likely to be much smaller, as the pipeline is only 24 inches in diameter. Therefore, this is a conservative assumption.

Note F

A maximum five workers are anticipated per each phase, per the applicant. Site preparation assumes that one haul truck per day may be required to export removed vegetation from the project site. It is conservatively assumed that demolition of the existing pipeline may also require one haul truck per day to remove any demolished materials. However, the existing pipeline would be left in place. Concrete trucks would be required to fill-in the existing pipeline with concrete. It is conservatively assumed that haul trips may be up to 40 miles, one way, to account for a range of possible facilities.

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**17280018 Springtown Trunkline Sewer Replacement Project
Alameda County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	59.80	1000sqft	1.37	59,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Note A

Land Use - See Note B

Construction Phase - See Note C

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Grading - See Note E

Demolition -

Trips and VMT - See Note F

Construction Off-road Equipment Mitigation -

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	4.00	13.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	PhaseEndDate	4/9/2025	6/4/2024
tblConstructionPhase	PhaseEndDate	3/12/2025	6/4/2024
tblConstructionPhase	PhaseEndDate	6/5/2024	5/24/2024
tblConstructionPhase	PhaseEndDate	5/30/2024	5/7/2024
tblConstructionPhase	PhaseStartDate	3/27/2025	5/29/2024
tblConstructionPhase	PhaseStartDate	6/6/2024	5/29/2024
tblConstructionPhase	PhaseStartDate	5/31/2024	5/8/2024
tblConstructionPhase	PhaseStartDate	5/29/2024	5/1/2024
tblGrading	AcresOfGrading	6.50	3.00
tblGrading	AcresOfGrading	2.50	1.50
tblGrading	MaterialImported	0.00	624.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	3.00	10.00
tblTripsAndVMT	WorkerTripNumber	25.00	10.00

2.0 Emissions Summary

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	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	0.0286	6.0000e-005	6.1000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005	0.0000	0.0139

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	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	0.0286	6.0000e-005	6.1000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005	0.0000	0.0139

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2024	5/7/2024	5	5	
2	Pipeline Installation	Grading	5/8/2024	5/24/2024	5	13	
3	Demolition of Existing Pipeline	Demolition	5/29/2024	6/4/2024	5	5	
4	Access Road Construction	Building Construction	5/29/2024	6/4/2024	5	5	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

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
Access Road Construction	Air Compressors	0	6.00	78	0.48
Demolition of Existing Pipeline	Concrete/Industrial Saws	0	8.00	81	0.73
Access Road Construction	Cranes	0	6.00	231	0.29
Demolition of Existing Pipeline	Cranes	0	6.00	231	0.29
Demolition of Existing Pipeline	Forklifts	0	6.00	89	0.20
Demolition of Existing Pipeline	Generator Sets	0	8.00	84	0.74
Pipeline Installation	Graders	0	8.00	187	0.41

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Site Preparation	Graders	0	8.00	187	0.41
Access Road Construction	Forklifts	0	6.00	89	0.20
Access Road Construction	Generator Sets	0	8.00	84	0.74
Demolition of Existing Pipeline	Rubber Tired Dozers	0	8.00	247	0.40
Access Road Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline Installation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Demolition of Existing Pipeline	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Access Road Construction	Welders	0	8.00	46	0.45
Pipeline Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation	Excavators	1	8.00	158	0.38
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition of Existing Pipeline	Welders	0	8.00	46	0.45
Access Road Construction	Rubber Tired Dozers	1	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	10.00	0.00	10.00	10.80	7.30	40.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation	4	10.00	0.00	62.00	10.80	7.30	40.00	LD_Mix	HDT_Mix	HHDT
Demolition of Existing Pipeline	1	10.00	10.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Access Road Construction	2	10.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3402	0.0000	6.3402	3.3446	0.0000	3.3446			0.0000			0.0000
Off-Road	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566		1,128.7477	1,128.7477	0.3651		1,137.8742
Total	0.8390	8.5759	5.3667	0.0117	6.3402	0.3876	6.7279	3.3446	0.3566	3.7012		1,128.7477	1,128.7477	0.3651		1,137.8742

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.3700e-003	0.4744	0.0901	2.3000e-003	0.0700	4.5000e-003	0.0745	0.0192	4.3000e-003	0.0235		247.7177	247.7177	5.3700e-003	0.0391	259.5170
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
Worker	0.0259	0.0141	0.2228	7.0000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		70.2523	70.2523	1.7100e-003	1.6400e-003	70.7822
Total	0.0323	0.4885	0.3129	3.0000e-003	0.1522	4.8900e-003	0.1571	0.0410	4.6600e-003	0.0457		317.9699	317.9699	7.0800e-003	0.0408	330.2992

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8531	0.0000	2.8531	1.5051	0.0000	1.5051			0.0000			0.0000
Off-Road	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566	0.0000	1,128.747 7	1,128.747 7	0.3651		1,137.874 2
Total	0.8390	8.5759	5.3667	0.0117	2.8531	0.3876	3.2407	1.5051	0.3566	1.8617	0.0000	1,128.747 7	1,128.747 7	0.3651		1,137.874 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.3700e-003	0.4744	0.0901	2.3000e-003	0.0700	4.5000e-003	0.0745	0.0192	4.3000e-003	0.0235		247.7177	247.7177	5.3700e-003	0.0391	259.5170
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
Worker	0.0259	0.0141	0.2228	7.0000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		70.2523	70.2523	1.7100e-003	1.6400e-003	70.7822
Total	0.0323	0.4885	0.3129	3.0000e-003	0.1522	4.8900e-003	0.1571	0.0410	4.6600e-003	0.0457		317.9699	317.9699	7.0800e-003	0.0408	330.2992

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Pipeline Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2668	0.0000	6.2668	3.3367	0.0000	3.3367			0.0000			0.0000
Off-Road	1.1632	11.4270	10.8673	0.0199		0.5232	0.5232		0.4813	0.4813		1,930.779 9	1,930.779 9	0.6245		1,946.391 2
Total	1.1632	11.4270	10.8673	0.0199	6.2668	0.5232	6.7900	3.3367	0.4813	3.8180		1,930.779 9	1,930.779 9	0.6245		1,946.391 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0152	1.1313	0.2148	5.4700e-003	0.1670	0.0107	0.1777	0.0458	0.0103	0.0561		590.7113	590.7113	0.0128	0.0933	618.8482
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
Worker	0.0259	0.0141	0.2228	7.0000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		70.2523	70.2523	1.7100e-003	1.6400e-003	70.7822
Total	0.0411	1.1454	0.4376	6.1700e-003	0.2491	0.0111	0.2603	0.0676	0.0106	0.0782		660.9636	660.9636	0.0145	0.0950	689.6304

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Pipeline Installation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8201	0.0000	2.8201	1.5015	0.0000	1.5015			0.0000			0.0000
Off-Road	1.1632	11.4270	10.8673	0.0199		0.5232	0.5232		0.4813	0.4813	0.0000	1,930.779 9	1,930.779 9	0.6245		1,946.391 2
Total	1.1632	11.4270	10.8673	0.0199	2.8201	0.5232	3.3433	1.5015	0.4813	1.9828	0.0000	1,930.779 9	1,930.779 9	0.6245		1,946.391 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0152	1.1313	0.2148	5.4700e-003	0.1670	0.0107	0.1777	0.0458	0.0103	0.0561		590.7113	590.7113	0.0128	0.0933	618.8482
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
Worker	0.0259	0.0141	0.2228	7.0000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		70.2523	70.2523	1.7100e-003	1.6400e-003	70.7822
Total	0.0411	1.1454	0.4376	6.1700e-003	0.2491	0.0111	0.2603	0.0676	0.0106	0.0782		660.9636	660.9636	0.0145	0.0950	689.6304

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Demolition of Existing Pipeline - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1439	1.4483	2.2356	3.1200e-003		0.0665	0.0665		0.0612	0.0612		301.7667	301.7667	0.0976		304.2067
Total	0.1439	1.4483	2.2356	3.1200e-003		0.0665	0.0665		0.0612	0.0612		301.7667	301.7667	0.0976		304.2067

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2400e-003	0.2543	0.0596	1.1700e-003	0.0350	2.2600e-003	0.0373	9.6100e-003	2.1600e-003	0.0118		126.5211	126.5211	2.7500e-003	0.0200	132.5474
Vendor	0.0101	0.4233	0.1278	1.9700e-003	0.0678	2.6600e-003	0.0704	0.0195	2.5400e-003	0.0221		209.7948	209.7948	2.9100e-003	0.0314	219.2301
Worker	0.0259	0.0141	0.2228	7.0000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		70.2523	70.2523	1.7100e-003	1.6400e-003	70.7822
Total	0.0403	0.6917	0.4102	3.8400e-003	0.1850	5.3100e-003	0.1903	0.0509	5.0600e-003	0.0560		406.5682	406.5682	7.3700e-003	0.0531	422.5597

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Demolition of Existing Pipeline - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1439	1.4483	2.2356	3.1200e-003		0.0665	0.0665		0.0612	0.0612	0.0000	301.7667	301.7667	0.0976		304.2067
Total	0.1439	1.4483	2.2356	3.1200e-003		0.0665	0.0665		0.0612	0.0612	0.0000	301.7667	301.7667	0.0976		304.2067

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.2400e-003	0.2543	0.0596	1.1700e-003	0.0350	2.2600e-003	0.0373	9.6100e-003	2.1600e-003	0.0118		126.5211	126.5211	2.7500e-003	0.0200	132.5474
Vendor	0.0101	0.4233	0.1278	1.9700e-003	0.0678	2.6600e-003	0.0704	0.0195	2.5400e-003	0.0221		209.7948	209.7948	2.9100e-003	0.0314	219.2301
Worker	0.0259	0.0141	0.2228	7.0000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		70.2523	70.2523	1.7100e-003	1.6400e-003	70.7822
Total	0.0403	0.6917	0.4102	3.8400e-003	0.1850	5.3100e-003	0.1903	0.0509	5.0600e-003	0.0560		406.5682	406.5682	7.3700e-003	0.0531	422.5597

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Access Road Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566		1,128.7477	1,128.7477	0.3651		1,137.8742
Total	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566		1,128.7477	1,128.7477	0.3651		1,137.8742

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0101	0.4233	0.1278	1.9700e-003	0.0678	2.6600e-003	0.0704	0.0195	2.5400e-003	0.0221		209.7948	209.7948	2.9100e-003	0.0314	219.2301
Worker	0.0259	0.0141	0.2228	7.0000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		70.2523	70.2523	1.7100e-003	1.6400e-003	70.7822
Total	0.0360	0.4375	0.3506	2.6700e-003	0.1499	3.0500e-003	0.1530	0.0413	2.9000e-003	0.0442		280.0471	280.0471	4.6200e-003	0.0331	290.0123

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Access Road Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566	0.0000	1,128.7477	1,128.7477	0.3651		1,137.8742
Total	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566	0.0000	1,128.7477	1,128.7477	0.3651		1,137.8742

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0101	0.4233	0.1278	1.9700e-003	0.0678	2.6600e-003	0.0704	0.0195	2.5400e-003	0.0221		209.7948	209.7948	2.9100e-003	0.0314	219.2301
Worker	0.0259	0.0141	0.2228	7.0000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		70.2523	70.2523	1.7100e-003	1.6400e-003	70.7822
Total	0.0360	0.4375	0.3506	2.6700e-003	0.1499	3.0500e-003	0.1530	0.0413	2.9000e-003	0.0442		280.0471	280.0471	4.6200e-003	0.0331	290.0123

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

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	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.569946	0.056495	0.180011	0.112201	0.020944	0.005169	0.013608	0.012941	0.000792	0.000570	0.024535	0.000337	0.002451

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Unmitigated	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.8300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0212					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.6000e-004	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Total	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.8300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0212					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.6000e-004	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Total	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139

7.0 Water Detail

7.1 Mitigation Measures Water

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

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

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**17280018 Springtown Trunkline Sewer Replacement Project
Alameda County, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	59.80	1000sqft	1.37	59,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Note A

Land Use - See Note B

Construction Phase - See Note C

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Grading - See Note E

Demolition -

Trips and VMT - See Note F

Construction Off-road Equipment Mitigation -

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	4.00	13.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	PhaseEndDate	4/9/2025	6/4/2024
tblConstructionPhase	PhaseEndDate	3/12/2025	6/4/2024
tblConstructionPhase	PhaseEndDate	6/5/2024	5/24/2024
tblConstructionPhase	PhaseEndDate	5/30/2024	5/7/2024
tblConstructionPhase	PhaseStartDate	3/27/2025	5/29/2024
tblConstructionPhase	PhaseStartDate	6/6/2024	5/29/2024
tblConstructionPhase	PhaseStartDate	5/31/2024	5/8/2024
tblConstructionPhase	PhaseStartDate	5/29/2024	5/1/2024
tblGrading	AcresOfGrading	6.50	3.00
tblGrading	AcresOfGrading	2.50	1.50
tblGrading	MaterialImported	0.00	624.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	3.00	10.00
tblTripsAndVMT	WorkerTripNumber	25.00	10.00

2.0 Emissions Summary

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	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	0.0286	6.0000e-005	6.1000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005	0.0000	0.0139

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	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	0.0286	6.0000e-005	6.1000e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005	0.0000	0.0139

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2024	5/7/2024	5	5	
2	Pipeline Installation	Grading	5/8/2024	5/24/2024	5	13	
3	Demolition of Existing Pipeline	Demolition	5/29/2024	6/4/2024	5	5	
4	Access Road Construction	Building Construction	5/29/2024	6/4/2024	5	5	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

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
Access Road Construction	Air Compressors	0	6.00	78	0.48
Demolition of Existing Pipeline	Concrete/Industrial Saws	0	8.00	81	0.73
Access Road Construction	Cranes	0	6.00	231	0.29
Demolition of Existing Pipeline	Cranes	0	6.00	231	0.29
Demolition of Existing Pipeline	Forklifts	0	6.00	89	0.20
Demolition of Existing Pipeline	Generator Sets	0	8.00	84	0.74
Pipeline Installation	Graders	0	8.00	187	0.41

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Site Preparation	Graders	0	8.00	187	0.41
Access Road Construction	Forklifts	0	6.00	89	0.20
Access Road Construction	Generator Sets	0	8.00	84	0.74
Demolition of Existing Pipeline	Rubber Tired Dozers	0	8.00	247	0.40
Access Road Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline Installation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Demolition of Existing Pipeline	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Access Road Construction	Welders	0	8.00	46	0.45
Pipeline Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation	Excavators	1	8.00	158	0.38
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition of Existing Pipeline	Welders	0	8.00	46	0.45
Access Road Construction	Rubber Tired Dozers	1	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	10.00	0.00	10.00	10.80	7.30	40.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation	4	10.00	0.00	62.00	10.80	7.30	40.00	LD_Mix	HDT_Mix	HHDT
Demolition of Existing Pipeline	1	10.00	10.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Access Road Construction	2	10.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3402	0.0000	6.3402	3.3446	0.0000	3.3446			0.0000			0.0000
Off-Road	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566		1,128.747 7	1,128.747 7	0.3651		1,137.874 2
Total	0.8390	8.5759	5.3667	0.0117	6.3402	0.3876	6.7279	3.3446	0.3566	3.7012		1,128.747 7	1,128.747 7	0.3651		1,137.874 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.1000e-003	0.5016	0.0909	2.3000e-003	0.0700	4.5000e-003	0.0745	0.0192	4.3100e-003	0.0235		247.8569	247.8569	5.3600e-003	0.0392	259.6628
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
Worker	0.0264	0.0175	0.2149	6.5000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		65.2260	65.2260	1.9600e-003	1.8900e-003	65.8381
Total	0.0325	0.5191	0.3058	2.9500e-003	0.1522	4.8900e-003	0.1571	0.0410	4.6700e-003	0.0457		313.0829	313.0829	7.3200e-003	0.0411	325.5010

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8531	0.0000	2.8531	1.5051	0.0000	1.5051			0.0000			0.0000
Off-Road	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566	0.0000	1,128.747 7	1,128.747 7	0.3651		1,137.874 2
Total	0.8390	8.5759	5.3667	0.0117	2.8531	0.3876	3.2407	1.5051	0.3566	1.8617	0.0000	1,128.747 7	1,128.747 7	0.3651		1,137.874 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.1000e-003	0.5016	0.0909	2.3000e-003	0.0700	4.5000e-003	0.0745	0.0192	4.3100e-003	0.0235		247.8569	247.8569	5.3600e-003	0.0392	259.6628
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
Worker	0.0264	0.0175	0.2149	6.5000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		65.2260	65.2260	1.9600e-003	1.8900e-003	65.8381
Total	0.0325	0.5191	0.3058	2.9500e-003	0.1522	4.8900e-003	0.1571	0.0410	4.6700e-003	0.0457		313.0829	313.0829	7.3200e-003	0.0411	325.5010

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Pipeline Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2668	0.0000	6.2668	3.3367	0.0000	3.3367			0.0000			0.0000
Off-Road	1.1632	11.4270	10.8673	0.0199		0.5232	0.5232		0.4813	0.4813		1,930.779 9	1,930.779 9	0.6245		1,946.391 2
Total	1.1632	11.4270	10.8673	0.0199	6.2668	0.5232	6.7900	3.3367	0.4813	3.8180		1,930.779 9	1,930.779 9	0.6245		1,946.391 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0145	1.1960	0.2167	5.4800e-003	0.1670	0.0107	0.1777	0.0458	0.0103	0.0561		591.0434	591.0434	0.0128	0.0934	619.1959
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
Worker	0.0264	0.0175	0.2149	6.5000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		65.2260	65.2260	1.9600e-003	1.8900e-003	65.8381
Total	0.0410	1.2136	0.4316	6.1300e-003	0.2491	0.0111	0.2603	0.0676	0.0106	0.0782		656.2694	656.2694	0.0147	0.0953	685.0341

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Pipeline Installation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8201	0.0000	2.8201	1.5015	0.0000	1.5015			0.0000			0.0000
Off-Road	1.1632	11.4270	10.8673	0.0199		0.5232	0.5232		0.4813	0.4813	0.0000	1,930.779 9	1,930.779 9	0.6245		1,946.391 2
Total	1.1632	11.4270	10.8673	0.0199	2.8201	0.5232	3.3433	1.5015	0.4813	1.9828	0.0000	1,930.779 9	1,930.779 9	0.6245		1,946.391 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0145	1.1960	0.2167	5.4800e-003	0.1670	0.0107	0.1777	0.0458	0.0103	0.0561		591.0434	591.0434	0.0128	0.0934	619.1959
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
Worker	0.0264	0.0175	0.2149	6.5000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		65.2260	65.2260	1.9600e-003	1.8900e-003	65.8381
Total	0.0410	1.2136	0.4316	6.1300e-003	0.2491	0.0111	0.2603	0.0676	0.0106	0.0782		656.2694	656.2694	0.0147	0.0953	685.0341

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Demolition of Existing Pipeline - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1439	1.4483	2.2356	3.1200e-003		0.0665	0.0665		0.0612	0.0612		301.7667	301.7667	0.0976		304.2067
Total	0.1439	1.4483	2.2356	3.1200e-003		0.0665	0.0665		0.0612	0.0612		301.7667	301.7667	0.0976		304.2067

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.9600e-003	0.2692	0.0604	1.1700e-003	0.0350	2.2600e-003	0.0373	9.6100e-003	2.1600e-003	0.0118		126.6605	126.6605	2.7300e-003	0.0200	132.6932
Vendor	9.6300e-003	0.4485	0.1321	1.9700e-003	0.0678	2.6700e-003	0.0704	0.0195	2.5500e-003	0.0221		210.1516	210.1516	2.8800e-003	0.0315	219.6098
Worker	0.0264	0.0175	0.2149	6.5000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		65.2260	65.2260	1.9600e-003	1.8900e-003	65.8381
Total	0.0400	0.7353	0.4074	3.7900e-003	0.1850	5.3200e-003	0.1903	0.0509	5.0700e-003	0.0560		402.0381	402.0381	7.5700e-003	0.0534	418.1411

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Demolition of Existing Pipeline - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1439	1.4483	2.2356	3.1200e-003		0.0665	0.0665		0.0612	0.0612	0.0000	301.7667	301.7667	0.0976		304.2067
Total	0.1439	1.4483	2.2356	3.1200e-003		0.0665	0.0665		0.0612	0.0612	0.0000	301.7667	301.7667	0.0976		304.2067

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.9600e-003	0.2692	0.0604	1.1700e-003	0.0350	2.2600e-003	0.0373	9.6100e-003	2.1600e-003	0.0118		126.6605	126.6605	2.7300e-003	0.0200	132.6932
Vendor	9.6300e-003	0.4485	0.1321	1.9700e-003	0.0678	2.6700e-003	0.0704	0.0195	2.5500e-003	0.0221		210.1516	210.1516	2.8800e-003	0.0315	219.6098
Worker	0.0264	0.0175	0.2149	6.5000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		65.2260	65.2260	1.9600e-003	1.8900e-003	65.8381
Total	0.0400	0.7353	0.4074	3.7900e-003	0.1850	5.3200e-003	0.1903	0.0509	5.0700e-003	0.0560		402.0381	402.0381	7.5700e-003	0.0534	418.1411

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Access Road Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566		1,128.7477	1,128.7477	0.3651		1,137.8742
Total	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566		1,128.7477	1,128.7477	0.3651		1,137.8742

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6300e-003	0.4485	0.1321	1.9700e-003	0.0678	2.6700e-003	0.0704	0.0195	2.5500e-003	0.0221		210.1516	210.1516	2.8800e-003	0.0315	219.6098
Worker	0.0264	0.0175	0.2149	6.5000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		65.2260	65.2260	1.9600e-003	1.8900e-003	65.8381
Total	0.0361	0.4660	0.3470	2.6200e-003	0.1499	3.0600e-003	0.1530	0.0413	2.9100e-003	0.0442		275.3776	275.3776	4.8400e-003	0.0334	285.4479

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Access Road Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566	0.0000	1,128.7477	1,128.7477	0.3651		1,137.8742
Total	0.8390	8.5759	5.3667	0.0117		0.3876	0.3876		0.3566	0.3566	0.0000	1,128.7477	1,128.7477	0.3651		1,137.8742

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6300e-003	0.4485	0.1321	1.9700e-003	0.0678	2.6700e-003	0.0704	0.0195	2.5500e-003	0.0221		210.1516	210.1516	2.8800e-003	0.0315	219.6098
Worker	0.0264	0.0175	0.2149	6.5000e-004	0.0822	3.9000e-004	0.0825	0.0218	3.6000e-004	0.0222		65.2260	65.2260	1.9600e-003	1.8900e-003	65.8381
Total	0.0361	0.4660	0.3470	2.6200e-003	0.1499	3.0600e-003	0.1530	0.0413	2.9100e-003	0.0442		275.3776	275.3776	4.8400e-003	0.0334	285.4479

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

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	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.569946	0.056495	0.180011	0.112201	0.020944	0.005169	0.013608	0.012941	0.000792	0.000570	0.024535	0.000337	0.002451

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Unmitigated	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.8300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0212					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.6000e-004	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Total	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139

17280018 Springtown Trunkline Sewer Replacement Project - Alameda County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.8300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0212					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.6000e-004	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139
Total	0.0286	6.0000e-005	6.1000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0131	0.0131	3.0000e-005		0.0139

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

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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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	59.80	1000sqft	1.37	59,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Note A

Land Use - See Note B

Construction Phase - See Note C

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Off-road Equipment - See Note D

Grading - See Note E

Demolition -

Trips and VMT - See Note F

Construction Off-road Equipment Mitigation -

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	4.00	13.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	PhaseEndDate	4/9/2025	6/4/2024
tblConstructionPhase	PhaseEndDate	3/12/2025	6/4/2024
tblConstructionPhase	PhaseEndDate	6/5/2024	5/24/2024
tblConstructionPhase	PhaseEndDate	5/30/2024	5/7/2024
tblConstructionPhase	PhaseStartDate	3/27/2025	5/29/2024
tblConstructionPhase	PhaseStartDate	6/6/2024	5/29/2024
tblConstructionPhase	PhaseStartDate	5/31/2024	5/8/2024
tblConstructionPhase	PhaseStartDate	5/29/2024	5/1/2024
tblGrading	AcresOfGrading	6.50	3.00
tblGrading	AcresOfGrading	2.50	1.50
tblGrading	MaterialImported	0.00	624.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	3.00	10.00
tblTripsAndVMT	WorkerTripNumber	25.00	10.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2024	7-31-2024	0.1390	0.1390
		Highest	0.1390	0.1390

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	5.1600e-003	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.1600e-003	0.0000	5.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	5.1600e-003	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.1600e-003	0.0000	5.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2024	5/7/2024	5	5	
2	Pipeline Installation	Grading	5/8/2024	5/24/2024	5	13	
3	Demolition of Existing Pipeline	Demolition	5/29/2024	6/4/2024	5	5	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Access Road Construction	Building Construction	5/29/2024	6/4/2024	5	5
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Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

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
Access Road Construction	Air Compressors	0	6.00	78	0.48
Demolition of Existing Pipeline	Concrete/Industrial Saws	0	8.00	81	0.73
Access Road Construction	Cranes	0	6.00	231	0.29
Demolition of Existing Pipeline	Cranes	0	6.00	231	0.29
Demolition of Existing Pipeline	Forklifts	0	6.00	89	0.20
Demolition of Existing Pipeline	Generator Sets	0	8.00	84	0.74
Pipeline Installation	Graders	0	8.00	187	0.41
Site Preparation	Graders	0	8.00	187	0.41
Access Road Construction	Forklifts	0	6.00	89	0.20
Access Road Construction	Generator Sets	0	8.00	84	0.74
Demolition of Existing Pipeline	Rubber Tired Dozers	0	8.00	247	0.40
Access Road Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline Installation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Demolition of Existing Pipeline	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Access Road Construction	Welders	0	8.00	46	0.45
Pipeline Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pipeline Installation	Excavators	1	8.00	158	0.38
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Demolition of Existing Pipeline	Welders	0	8.00	46	0.45
Access Road Construction	Rubber Tired Dozers	1	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	10.00	0.00	10.00	10.80	7.30	40.00	LD_Mix	HDT_Mix	HHDT
Pipeline Installation	4	10.00	0.00	62.00	10.80	7.30	40.00	LD_Mix	HDT_Mix	HHDT
Demolition of Existing Pipeline	1	10.00	10.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Access Road Construction	2	10.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0159	0.0000	0.0159	8.3600e-003	0.0000	8.3600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1000e-003	0.0214	0.0134	3.0000e-005		9.7000e-004	9.7000e-004		8.9000e-004	8.9000e-004	0.0000	2.5600	2.5600	8.3000e-004	0.0000	2.5807
Total	2.1000e-003	0.0214	0.0134	3.0000e-005	0.0159	9.7000e-004	0.0168	8.3600e-003	8.9000e-004	9.2500e-003	0.0000	2.5600	2.5600	8.3000e-004	0.0000	2.5807

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

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	2.0000e-005	1.2300e-003	2.3000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5620	0.5620	1.0000e-005	9.0000e-005	0.5887
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.2000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1489	0.1489	0.0000	0.0000	0.1502
Total	8.0000e-005	1.2700e-003	7.5000e-004	1.0000e-005	3.7000e-004	1.0000e-005	3.8000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.7109	0.7109	1.0000e-005	9.0000e-005	0.7390

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					7.1300e-003	0.0000	7.1300e-003	3.7600e-003	0.0000	3.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1000e-003	0.0214	0.0134	3.0000e-005		9.7000e-004	9.7000e-004		8.9000e-004	8.9000e-004	0.0000	2.5600	2.5600	8.3000e-004	0.0000	2.5807
Total	2.1000e-003	0.0214	0.0134	3.0000e-005	7.1300e-003	9.7000e-004	8.1000e-003	3.7600e-003	8.9000e-004	4.6500e-003	0.0000	2.5600	2.5600	8.3000e-004	0.0000	2.5807

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

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	2.0000e-005	1.2300e-003	2.3000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5620	0.5620	1.0000e-005	9.0000e-005	0.5887
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.2000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1489	0.1489	0.0000	0.0000	0.1502
Total	8.0000e-005	1.2700e-003	7.5000e-004	1.0000e-005	3.7000e-004	1.0000e-005	3.8000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.7109	0.7109	1.0000e-005	9.0000e-005	0.7390

3.3 Pipeline Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0217	0.0000	0.0217	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5600e-003	0.0743	0.0706	1.3000e-004		3.4000e-003	3.4000e-003		3.1300e-003	3.1300e-003	0.0000	11.3852	11.3852	3.6800e-003	0.0000	11.4773
Total	7.5600e-003	0.0743	0.0706	1.3000e-004	0.0407	3.4000e-003	0.0441	0.0217	3.1300e-003	0.0248	0.0000	11.3852	11.3852	3.6800e-003	0.0000	11.4773

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Pipeline Installation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	7.6400e-003	1.4000e-003	4.0000e-005	1.0500e-003	7.0000e-005	1.1200e-003	2.9000e-004	7.0000e-005	3.6000e-004	0.0000	3.4841	3.4841	8.0000e-005	5.5000e-004	3.6500
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	1.6000e-004	1.0000e-004	1.3500e-003	0.0000	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.3872	0.3872	1.0000e-005	1.0000e-005	0.3906
Total	2.6000e-004	7.7400e-003	2.7500e-003	4.0000e-005	1.5600e-003	7.0000e-005	1.6400e-003	4.3000e-004	7.0000e-005	5.0000e-004	0.0000	3.8713	3.8713	9.0000e-005	5.6000e-004	4.0406

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					0.0183	0.0000	0.0183	9.7600e-003	0.0000	9.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5600e-003	0.0743	0.0706	1.3000e-004		3.4000e-003	3.4000e-003		3.1300e-003	3.1300e-003	0.0000	11.3852	11.3852	3.6800e-003	0.0000	11.4773
Total	7.5600e-003	0.0743	0.0706	1.3000e-004	0.0183	3.4000e-003	0.0217	9.7600e-003	3.1300e-003	0.0129	0.0000	11.3852	11.3852	3.6800e-003	0.0000	11.4773

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Pipeline Installation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	7.6400e-003	1.4000e-003	4.0000e-005	1.0500e-003	7.0000e-005	1.1200e-003	2.9000e-004	7.0000e-005	3.6000e-004	0.0000	3.4841	3.4841	8.0000e-005	5.5000e-004	3.6500
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	1.6000e-004	1.0000e-004	1.3500e-003	0.0000	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.3872	0.3872	1.0000e-005	1.0000e-005	0.3906
Total	2.6000e-004	7.7400e-003	2.7500e-003	4.0000e-005	1.5600e-003	7.0000e-005	1.6400e-003	4.3000e-004	7.0000e-005	5.0000e-004	0.0000	3.8713	3.8713	9.0000e-005	5.6000e-004	4.0406

3.4 Demolition of Existing Pipeline - 2024

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	3.6000e-004	3.6200e-003	5.5900e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.6844	0.6844	2.2000e-004	0.0000	0.6899
Total	3.6000e-004	3.6200e-003	5.5900e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.6844	0.6844	2.2000e-004	0.0000	0.6899

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Demolition of Existing Pipeline - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	6.6000e-004	1.5000e-004	0.0000	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2871	0.2871	1.0000e-005	5.0000e-005	0.3008
Vendor	2.0000e-005	1.1000e-003	3.2000e-004	0.0000	1.6000e-004	1.0000e-005	1.7000e-004	5.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4762	0.4762	1.0000e-005	7.0000e-005	0.4976
Worker	6.0000e-005	4.0000e-005	5.2000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1489	0.1489	0.0000	0.0000	0.1502
Total	9.0000e-005	1.8000e-003	9.9000e-004	0.0000	4.4000e-004	2.0000e-005	4.6000e-004	1.2000e-004	2.0000e-005	1.3000e-004	0.0000	0.9122	0.9122	2.0000e-005	1.2000e-004	0.9486

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6000e-004	3.6200e-003	5.5900e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.6844	0.6844	2.2000e-004	0.0000	0.6899
Total	3.6000e-004	3.6200e-003	5.5900e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.6844	0.6844	2.2000e-004	0.0000	0.6899

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Demolition of Existing Pipeline - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	6.6000e-004	1.5000e-004	0.0000	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2871	0.2871	1.0000e-005	5.0000e-005	0.3008
Vendor	2.0000e-005	1.1000e-003	3.2000e-004	0.0000	1.6000e-004	1.0000e-005	1.7000e-004	5.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4762	0.4762	1.0000e-005	7.0000e-005	0.4976
Worker	6.0000e-005	4.0000e-005	5.2000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1489	0.1489	0.0000	0.0000	0.1502
Total	9.0000e-005	1.8000e-003	9.9000e-004	0.0000	4.4000e-004	2.0000e-005	4.6000e-004	1.2000e-004	2.0000e-005	1.3000e-004	0.0000	0.9122	0.9122	2.0000e-005	1.2000e-004	0.9486

3.5 Access Road Construction - 2024

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	2.1000e-003	0.0214	0.0134	3.0000e-005		9.7000e-004	9.7000e-004		8.9000e-004	8.9000e-004	0.0000	2.5600	2.5600	8.3000e-004	0.0000	2.5807
Total	2.1000e-003	0.0214	0.0134	3.0000e-005		9.7000e-004	9.7000e-004		8.9000e-004	8.9000e-004	0.0000	2.5600	2.5600	8.3000e-004	0.0000	2.5807

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Access Road Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	1.1000e-003	3.2000e-004	0.0000	1.6000e-004	1.0000e-005	1.7000e-004	5.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4762	0.4762	1.0000e-005	7.0000e-005	0.4976
Worker	6.0000e-005	4.0000e-005	5.2000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1489	0.1489	0.0000	0.0000	0.1502
Total	8.0000e-005	1.1400e-003	8.4000e-004	0.0000	3.6000e-004	1.0000e-005	3.7000e-004	1.0000e-004	1.0000e-005	1.0000e-004	0.0000	0.6251	0.6251	1.0000e-005	7.0000e-005	0.6478

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	2.1000e-003	0.0214	0.0134	3.0000e-005		9.7000e-004	9.7000e-004		8.9000e-004	8.9000e-004	0.0000	2.5600	2.5600	8.3000e-004	0.0000	2.5807
Total	2.1000e-003	0.0214	0.0134	3.0000e-005		9.7000e-004	9.7000e-004		8.9000e-004	8.9000e-004	0.0000	2.5600	2.5600	8.3000e-004	0.0000	2.5807

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Access Road Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	1.1000e-003	3.2000e-004	0.0000	1.6000e-004	1.0000e-005	1.7000e-004	5.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4762	0.4762	1.0000e-005	7.0000e-005	0.4976
Worker	6.0000e-005	4.0000e-005	5.2000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1489	0.1489	0.0000	0.0000	0.1502
Total	8.0000e-005	1.1400e-003	8.4000e-004	0.0000	3.6000e-004	1.0000e-005	3.7000e-004	1.0000e-004	1.0000e-005	1.0000e-004	0.0000	0.6251	0.6251	1.0000e-005	7.0000e-005	0.6478

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.569946	0.056495	0.180011	0.112201	0.020944	0.005169	0.013608	0.012941	0.000792	0.000570	0.024535	0.000337	0.002451

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	5.1600e-003	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Unmitigated	5.1600e-003	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003

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	1.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.8700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Total	5.1700e-003	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.8700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003
Total	5.1700e-003	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0700e-003	1.0700e-003	0.0000	0.0000	1.1400e-003

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

Construction Equipment Fuel Calculation

Source: AQ/GHG Appendix, CalEEMod Output

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Date: 11/4/2022 9:47 AM

Construction Schedule

CalEEMod Run	Phase Type	Start Date	End Date	Num Days	
				Week	Num Days
Main Site Construction					
Site Preparation	Site Preparation	5/1/2024	5/7/2024	5	5
Pipeline Installation	Grading	5/8/2024	5/24/2024	5	13
Demolition of Existing Pipeline	Demolition	5/29/2024	6/4/2024	5	5
Access Road Construction	Building Construction	5/29/2024	6/4/2024	5	5

Construction Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of Days	HP Hours	Diesel Fuel Usage
Site Preparation	Graders	0	8	187	0.41	5	0	0
Site Preparation	Rubber Tired Dozers	1	8	247	0.4	5	3952	197.60
Site Preparation	Tractors/Loaders/Backhoes	1	8	97	0.37	5	1435.6	71.78
Pipeline Installation	Excavators	1	8	158	0.38	13	6244.16	312.21
Pipeline Installation	Graders	0	8	187	0.41	13	0	0
Pipeline Installation	Rubber Tired Dozers	1	8	247	0.4	13	10275.2	513.76
Pipeline Installation	Tractors/Loaders/Backhoes	2	8	97	0.37	13	7465.12	373.26
Demolition of Existing Pipeline	Concrete/Industrial Saws	0	8	81	0.73	5	0	0
Demolition of Existing Pipeline	Cranes	0	6	231	0.29	5	0	0
Demolition of Existing Pipeline	Forklifts	0	6	89	0.2	5	0	0
Demolition of Existing Pipeline	Generator Sets	0	8	84	0.74	5	0	0
Demolition of Existing Pipeline	Rubber Tired Dozers	0	8	247	0.4	5	0	0
Demolition of Existing Pipeline	Tractors/Loaders/Backhoes	1	8	97	0.37	5	1435.6	71.78
Demolition of Existing Pipeline	Welders	0	8	46	0.45	5	0	0
Access Road Construction	Air Compressors	0	6	78	0.48	5	0	0
Access Road Construction	Cranes	0	6	231	0.29	5	0	0
Access Road Construction	Forklifts	0	6	89	0.2	5	0	0
Access Road Construction	Generator Sets	0	8	84	0.74	5	0	0
Access Road Construction	Rubber Tired Dozers	1	8	247	0.4	5	3952	197.60
Access Road Construction	Tractors/Loaders/Backhoes	1	8	97	0.37	5	1435.6	71.78
Access Road Construction	Welders	0	8	46	0.45	5	0	0

Total Construction Equipment Fuel Consumption (gallons) 1,809.76

Construction Vehicle Fuel Calculations

California Air Resource Board (ARB). EMFAC2021 Web Database. Website: <https://arb.ca.gov/emfac/emissions-inventory/>.

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: County

Region: Alameda

Calendar Year: 2024

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

VMT = Vehicle Miles Traveled

FE = Fuel Economy

Calculations

VehClass	MdYr	Speed	Fuel	Population	Consumption		FE	
					VMT (mi/day)	(1000 gallons/day)	(mi/gallon)	VMT*FE
HHDT	Aggregated	Aggregated	GAS	6.512104597	898.919933	0.238807262	3.76420686	3383.72057
HHDT	Aggregated	Aggregated	DSL	14019.35976	1801241.05	301.5126077	5.9740157	10760642.3
LDA	Aggregated	Aggregated	GAS	550051.9063	19996646.2	665.3099768	30.0561346	601021890
LDA	Aggregated	Aggregated	DSL	2215.138833	61148.1952	1.433471985	42.6574051	2608423.34
LDT1	Aggregated	Aggregated	GAS	51647.46173	1731568.48	68.55514321	25.258039	43736024.2
LDT1	Aggregated	Aggregated	DSL	28.93594781	345.631016	0.014338951	24.1043449	8331.20924
LDT2	Aggregated	Aggregated	GAS	250144.8178	9685168.66	396.0221228	24.4561303	236861747
LDT2	Aggregated	Aggregated	DSL	877.4560623	35171.5151	1.081943418	32.5077213	1143345.81
LHDT1	Aggregated	Aggregated	GAS	18902.95342	716627.075	74.1467641	9.66498112	6926187.15
LHDT1	Aggregated	Aggregated	DSL	9144.826182	365640.028	22.91149684	15.9588014	5835176.59
LHDT2	Aggregated	Aggregated	GAS	2669.253287	97703.8855	11.40931526	8.56351878	836689.058
LHDT2	Aggregated	Aggregated	DSL	3917.354251	159736.199	11.96367227	13.3517699	2132760.97
MHDT	Aggregated	Aggregated	GAS	1646.77726	85631.5095	18.18377586	4.70922597	403258.128
MHDT	Aggregated	Aggregated	DSL	14077.45799	598407.516	70.87480725	8.44316252	5052451.92
Worker								
Sum of VMT*FE (Column BI)								885379762
Total VMT								31510048.7
Weighted Average FE								28.0983305
Vendor								
Sum of VMT*FE (Column BI)								31950549.9
Total VMT								3825886.19
Weighted Average FE								8.35115012
Haul								
Sum of VMT*FE (Column BI)								10764026.1
Total VMT								1802139.97
Weighted Average FE								5.97291344

Construction Parameters

Source: AQ/GHG Appendix, CalEEMod Output

Springtown Trunkline Sewer Replacement Project - Alameda County, Annual

Date: 11/4/2022 9:47 AM

Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Num Days	
				Week	Num Days
Site Preparation	Site Preparation	5/1/2024	5/7/2024	5	5
Pipeline Installation	Grading	5/8/2024	5/24/2024	5	13
Demolition of Existing Pipeline	Demolition	5/29/2024	6/4/2024	5	5
Access Road Construction	Building Construction	5/29/2024	6/4/2024	5	5

Construction Trips and VMT

Phase Name	Trips per Day			Construction Trip Length in Miles			Number of Days per Phase	Trips per Phase			VMT per Phase			Fuel Consumption (gallons)		
	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length		Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trips	Vendor Trips	Hauling Trips	Worker Trips	Vendor Trips	Hauling Trips
Site Preparation	10	0	10	10.8	7.3	40	5	50	0	10	540	0	400	19.22	0.00	66.97
Pipeline Installation	10	0	62	10.8	7.3	40	13	130	0	62	1,404	0	2,480	49.97	0.00	415.21
Demolition of Existing Pipeline	10	10	10	10.8	7.3	20	5	50	50	10	540	365	200	19.22	43.71	33.48
Access Road Construction	10	10	0	10.8	7.3	20	5	50	50	0	540	365	0	19.22	43.71	0.00

Total Project Construction VMT (miles)
6,834

Total Project Fuel Consumption (gallons)
711

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