

**Appendix B:
Air Quality, Greenhouse Gas Emissions, and Energy Analysis
Supporting Information**

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix B: Air Quality Supporting Information and Modeling Results

Table of Contents

Project CalEEMod Model Output Files.....	1
Health Risk Assessment Emission Rates and Health Risk Results.....	15
AERMOD Output Files.	25
Project Energy Calculations.....	67
Typical Construction Trailer CalEEMod Output Files	73

5076.0001 Outfront Media LED Billboards Project - Langton Site - Alameda County, Annual

5076.0001 Outfront Media LED Billboards Project - Langton Site
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.01	25.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5	Operational Year	2018		
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 - Langton Site - Construction Only

Land Use - Langton Site

Construction Phase - Billboard construction would require 2 to 4 weeks to complete

Off-road Equipment - Estimated construction equipment

Off-road Equipment - Estimated construction equipment

Off-road Equipment - Estimated construction equipment

Trips and VMT - Additional worker trips added to the building construction phase and two vendor trips per day added to all phases to account for the delivery of materials.

Grading - The total transported soils would require four additional truck trips to and from the location.

Construction Off-road Equipment Mitigation - Compliance with BAAQMD best management practices threshold for fugitive dust; recommended measures from BAAQMD's Basic Construction Mitigation Measures Recommended for All Proposed Projects.

Tier III mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	100.00	19.00
tblConstructionPhase	NumDays	2.00	1.00
tblConstructionPhase	NumDays	5.00	2.00
tblGrading	MaterialExported	0.00	64.00
tblLandUse	LandUseSquareFeet	0.00	25.00
tblLandUse	LotAcreage	0.00	0.01
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	4.7800e-003	0.0514	0.0264	6.0000e-005	9.1000e-004	2.4600e-003	3.3700e-003	2.5000e-004	2.2700e-003	2.5100e-003	0.0000	5.6163	5.6163	1.3200e-003	0.0000	5.6493
Maximum	4.7800e-003	0.0514	0.0264	6.0000e-005	9.1000e-004	2.4600e-003	3.3700e-003	2.5000e-004	2.2700e-003	2.5100e-003	0.0000	5.6163	5.6163	1.3200e-003	0.0000	5.6493

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.6300e-003	0.0268	0.0301	6.0000e-005	9.1000e-004	1.1000e-003	2.0100e-003	2.5000e-004	1.0900e-003	1.3400e-003	0.0000	5.6163	5.6163	1.3200e-003	0.0000	5.6493
Maximum	1.6300e-003	0.0268	0.0301	6.0000e-005	9.1000e-004	1.1000e-003	2.0100e-003	2.5000e-004	1.0900e-003	1.3400e-003	0.0000	5.6163	5.6163	1.3200e-003	0.0000	5.6493

	ROG	NOx	CO	SO2	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	65.90	47.87	-13.97	0.00	0.00	55.28	40.36	0.00	51.98	46.61	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)
		Highest		

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	10/1/2018	10/1/2018	5	1	
2	Building Construction	Building Construction	10/2/2018	10/26/2018	5	19	
3	Paving	Paving	10/25/2018	10/26/2018	5	2	

Acres of Grading (Site Preparation Phase): 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Concrete/Industrial Saws	1	2.00	81	0.73
Grading	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Cement and Mortar Mixers	1	2.00	9	0.56

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
Grading	3	8.00	2.00	8.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	2	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2018

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	3.0800e-003	1.9500e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.5488	0.5488	1.6000e-004	0.0000	0.5526
Total	2.7000e-004	3.0800e-003	1.9500e-003	1.0000e-005	0.0000	1.3000e-004	1.3000e-004	0.0000	1.2000e-004	1.2000e-004	0.0000	0.5488	0.5488	1.6000e-004	0.0000	0.5526

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3100e-003	2.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3126	0.3126	2.0000e-005	0.0000	0.3130
Vendor	0.0000	1.3000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0268	0.0268	0.0000	0.0000	0.0269
Worker	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0299	0.0299	0.0000	0.0000	0.0299
Total	6.0000e-005	1.4500e-003	3.8000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3693	0.3693	2.0000e-005	0.0000	0.3698

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	3.0600e-003	3.4500e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.5488	0.5488	1.6000e-004	0.0000	0.5526
Total	1.7000e-004	3.0600e-003	3.4500e-003	1.0000e-005	0.0000	1.4000e-004	1.4000e-004	0.0000	1.4000e-004	1.4000e-004	0.0000	0.5488	0.5488	1.6000e-004	0.0000	0.5526

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3100e-003	2.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3126	0.3126	2.0000e-005	0.0000	0.3130
Vendor	0.0000	1.3000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0268	0.0268	0.0000	0.0000	0.0269
Worker	2.0000e-005	1.0000e-005	1.3000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0299	0.0299	0.0000	0.0000	0.0299
Total	6.0000e-005	1.4500e-003	3.8000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3693	0.3693	2.0000e-005	0.0000	0.3698

3.3 Building Construction - 2018

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	3.9800e-003	0.0436	0.0206	4.0000e-005		2.3000e-003	2.3000e-003		2.1100e-003	2.1100e-003	0.0000	3.4959	3.4959	1.0900e-003	0.0000	3.5231
Total	3.9800e-003	0.0436	0.0206	4.0000e-005		2.3000e-003	2.3000e-003		2.1100e-003	2.1100e-003	0.0000	3.4959	3.4959	1.0900e-003	0.0000	3.5231

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	9.0000e-005	2.5600e-003	5.8000e-004	1.0000e-005	1.2000e-004	2.0000e-005	1.4000e-004	4.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.5096	0.5096	3.0000e-005	0.0000	0.5104
Worker	3.2000e-004	2.5000e-004	2.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5678	0.5678	2.0000e-005	0.0000	0.5683
Total	4.1000e-004	2.8100e-003	3.0800e-003	2.0000e-005	7.2000e-004	2.0000e-005	7.5000e-004	2.0000e-004	2.0000e-005	2.1000e-004	0.0000	1.0774	1.0774	5.0000e-005	0.0000	1.0787

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	9.4000e-004	0.0192	0.0229	4.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	3.4959	3.4959	1.0900e-003	0.0000	3.5231
Total	9.4000e-004	0.0192	0.0229	4.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	3.4959	3.4959	1.0900e-003	0.0000	3.5231

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	9.0000e-005	2.5600e-003	5.8000e-004	1.0000e-005	1.2000e-004	2.0000e-005	1.4000e-004	4.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.5096	0.5096	3.0000e-005	0.0000	0.5104
Worker	3.2000e-004	2.5000e-004	2.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5678	0.5678	2.0000e-005	0.0000	0.5683
Total	4.1000e-004	2.8100e-003	3.0800e-003	2.0000e-005	7.2000e-004	2.0000e-005	7.5000e-004	2.0000e-004	2.0000e-005	2.1000e-004	0.0000	1.0774	1.0774	5.0000e-005	0.0000	1.0787

3.4 Paving - 2018

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	1.0000e-005	9.0000e-005	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0115	0.0115	0.0000	0.0000	0.0115
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.0000e-005	9.0000e-005	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0115	0.0115	0.0000	0.0000	0.0115

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	1.0000e-005	2.7000e-004	6.0000e-005	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0536	0.0536	0.0000	0.0000	0.0537
Worker	3.0000e-005	3.0000e-005	2.6000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0598	0.0598	0.0000	0.0000	0.0598
Total	4.0000e-005	3.0000e-004	3.2000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.1134	0.1134	0.0000	0.0000	0.1136

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0115	0.0115	0.0000	0.0000	0.0115
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0115	0.0115	0.0000	0.0000	0.0115

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	1.0000e-005	2.7000e-004	6.0000e-005	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0536	0.0536	0.0000	0.0000	0.0537
Worker	3.0000e-005	3.0000e-005	2.6000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0598	0.0598	0.0000	0.0000	0.0598
Total	4.0000e-005	3.0000e-004	3.2000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.1134	0.1134	0.0000	0.0000	0.1136

Outfront Media LED Billboards Project - Removal Sites - Alameda County, Annual

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

**Outfront Media LED Billboards Project - Removal Sites
Alameda County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.01	25.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2018
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 - Removal Sites - Construction Only

Land Use - Removal of existing billboards

Construction Phase - It is expected to take approximately one to two working days to remove each of the existing billboard structures, for a maximum of approximately 20 working days to remove all billboard structures.

Off-road Equipment - Estimated construction equipment

Off-road Equipment - Estimated construction equipment

Hand tools and small crane rigs would be used to remove the billboards.

Trips and VMT - Additional vendor trips and haul trips were added to account for delivery of material and transport of removed billboards.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	20.00
Appendix B tblLandUse	LandUseSquareFeet	0.00	25.00

Outfront Media LED Billboards Project - Removal Sites - Alameda County, Annual

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

tblLandUse	LotAcreage	0.00	0.01
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	9.1600e-003	0.0805	0.0649	1.2000e-004	9.3000e-004	4.8900e-003	5.8300e-003	2.5000e-004	4.7200e-003	4.9700e-003	0.0000	10.4841	10.4841	1.5400e-003	1.9000e-004	10.5793
Maximum	9.1600e-003	0.0805	0.0649	1.2000e-004	9.3000e-004	4.8900e-003	5.8300e-003	2.5000e-004	4.7200e-003	4.9700e-003	0.0000	10.4841	10.4841	1.5400e-003	1.9000e-004	10.5793

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	9.1600e-003	0.0805	0.0649	1.2000e-004	9.3000e-004	4.8900e-003	5.8300e-003	2.5000e-004	4.7200e-003	4.9700e-003	0.0000	10.4841	10.4841	1.5400e-003	1.9000e-004	10.5793
Maximum	9.16E-03	0.0805	0.0649	1.2000e-004	9.3000e-004	4.89E-03	5.8300e-003	2.5000e-004	4.72E-03	4.9700e-003	0.0000	10.4841	10.4841	1.5400e-003	1.9000e-004	10.5793

Outfront Media LED Billboards Project - Removal Sites - Alameda County, Annual

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

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)									
		Highest														

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	10/1/2018	10/26/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

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 –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Cranes	1	2.00	231	0.29
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	6.00	97	0.37

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
Demolition	3	8.00	2.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Outfront Media LED Billboards Project - Removal Sites - Alameda County, Annual

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

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2018

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	8.6200e-003	0.0759	0.0611	1.0000e-004		4.8100e-003	4.8100e-003		4.6300e-003	4.6300e-003	0.0000	8.8214	8.8214	1.4900e-003	0.0000	8.8587
Total	8.6200e-003	0.0759	0.0611	1.0000e-004		4.8100e-003	4.8100e-003		4.6300e-003	4.6300e-003	0.0000	8.8214	8.8214	1.4900e-003	0.0000	8.8587

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	2.5400e-003	5.1000e-004	1.0000e-005	1.7000e-004	5.0000e-005	2.2000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6591	0.6591	2.0000e-005	1.0000e-004	0.6905
Vendor	1.1000e-004	1.7300e-003	4.7000e-004	0.0000	1.3000e-004	4.0000e-005	1.7000e-004	4.0000e-005	4.0000e-005	7.0000e-005	0.0000	0.4338	0.4338	1.0000e-005	7.0000e-005	0.4534
Worker	3.2000e-004	2.8000e-004	2.8300e-003	1.0000e-005	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5698	0.5698	3.0000e-005	2.0000e-005	0.5768
Total	5.5000e-004	4.5500e-003	3.8100e-003	2.0000e-005	9.3000e-004	9.0000e-005	1.0300e-003	2.6000e-004	8.0000e-005	3.3000e-004	0.0000	1.6627	1.6627	6.0000e-005	1.9000e-004	1.7207

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
--	-----	-----	----	-----	---------------	--------------	------------	----------------	---------------	-------------	----------	-----------	-----------	-----	-----	------

Outfront Media LED Billboards Project - Removal Sites - Alameda County, Annual

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

Category	tons/yr									MT/yr						
	Off-Road	8.6200e-003	0.0759	0.0611	1.0000e-004		4.8100e-003	4.8100e-003		4.6300e-003	4.6300e-003	0.0000	8.8214	8.8214	1.4900e-003	0.0000	8.8586
Total	8.6200e-003	0.0759	0.0611	1.0000e-004		4.8100e-003	4.8100e-003		4.6300e-003	4.6300e-003	0.0000	8.8214	8.8214	1.4900e-003	0.0000	8.8586

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
	Hauling	1.2000e-004	2.5400e-003	5.1000e-004	1.0000e-005	1.7000e-004	5.0000e-005	2.2000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6591	0.6591	2.0000e-005	1.0000e-004	0.6905
Vendor	1.1000e-004	1.7300e-003	4.7000e-004	0.0000	1.3000e-004	4.0000e-005	1.7000e-004	4.0000e-005	4.0000e-005	7.0000e-005	0.0000	0.4338	0.4338	1.0000e-005	7.0000e-005	0.4534
Worker	3.2000e-004	2.8000e-004	2.8300e-003	1.0000e-005	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5698	0.5698	3.0000e-005	2.0000e-005	0.5768
Total	5.5000e-004	4.5500e-003	3.8100e-003	2.0000e-005	9.3000e-004	9.0000e-005	1.0300e-003	2.6000e-004	8.0000e-005	3.3000e-004	0.0000	1.6627	1.6627	6.0000e-005	1.9000e-004	1.7207

Outfront Media LED Billboard Project

Unmitigated

Notes: emissions are for 1 billboard (construction of each billboard uses the exact same assumptions, so the emissions estimates are also the same)
CalEEMod run used 25 sq ft as the project area

Construction Annual DPM Emissions (as PM2.5 Exhaust)

Construction Scheduling

2018
8 hours/day
5 days/week
4 weeks/year **4-week construction schedule**
160 hours/year

Construction Phase	Start Date	End Date	m Days W€	Num Days
Grading	10/1/2018	10/1/2018	5	1
Building Constructic	10/2/2018	10/26/2018	5	19
Paving	10/25/2018	10/26/2018	5	2
Total				20 working days because of overlap

Onsite Construction Area Source Size (m2): 6.1 from AERMOD

Onsite Construction PM2.5 Emissions

2018	Construction Activity	Onsite	Onsite	Onsite DPM
		Annual DPM	Annual DPM	Source Exhaust
		Exhaust Emissions	Exhaust Emissions	Emissions
		(tons/year)	(g/sec)	(g/m2-sec)
	Grading	1.200E-04	1.892E-04	3.101E-05
	Building Construction	2.110E-03	3.326E-03	5.453E-04
	Paving	0.000E+00	0.000E+00	0.000E+00
	Total	2.230E-03	3.515E-03	5.763E-04

Offsite Construction Vehicle PM2.5 Emissions

2018	Construction Activity	Offsite Hauling	Offsite Vendor	Offsite Workers
		Annual DPM	Annual DPM	Annual DPM
		Exhaust Emissions	Exhaust Emissions	Exhaust Emissions
		(tons/year)	(tons/year)	(tons/year)
	Grading	0.000E+00	0.000E+00	0.000E+00
	Building Construction	0.000E+00	2.000E-05	0.000E+00
	Paving	0.000E+00	0.000E+00	0.000E+00
	Total (tons/year)	0.000E+00	2.000E-05	0.000E+00

Trip Distance assumed in CalEEMod (mi) 20.0 7.3 10.8
Offsite Project Trip Distance Along Roadway Segment 0.12 0.12 0.12

Offsite Project Emissions Along Roadway Segment 0.000E+00 3.295E-07 0.000E+00

Offsite Emissions Along Roadway Segment Analyzed	
Total Offsite Project Exhaust Emissions (tons/year)	3.295E-07
Total Offsite Project Exhaust Emissions (grams/sec)	5.194E-07

Onsite Exhaust Emissions (tons/year)	2.230E-03
Total Onsite Emissions (tons/year)	2.230E-03
Onsite Exhaust Emissions (g/m2-sec)	5.763E-04

Total PM@2.5 Exhaust (tons/year) 2.230E-03

X	Y	Onsite DPM Concentration		Offise DPM Concentration		Total DPM
		Unit Emission	Actual Emission	Unit Emission	Actual Emission	
578818.9	4171632	106.8635	6.16E-02	38.58318	2.0E-05	6.16E-02
578842.1	4171636	600.00884	3.46E-01	55.80554	2.9E-05	3.46E-01
578851.9	4171638	626.10524	3.61E-01	34.25362	1.8E-05	3.61E-01
578803	4171629	75.36354	4.34E-02	20.05246	1.0E-05	4.34E-02
578862.5	4171641	500.61786	2.88E-01	22.79302	1.2E-05	2.89E-01
578819.3	4171599	33.02414	1.90E-02	56.0478	2.9E-05	1.91E-02
578854.1	4171606	104.6097	6.03E-02	66.85735	3.5E-05	6.03E-02
578871.6	4171610	129.28558	7.45E-02	33.04969	1.7E-05	7.45E-02
578882.5	4171615	139.97595	8.07E-02	23.08715	1.2E-05	8.07E-02
578797.3	4171598	22.06304	1.27E-02	39.50811	2.1E-05	1.27E-02
578770.4	4171588	14.62139	8.43E-03	43.50407	2.3E-05	8.45E-03
578752.1	4171585	11.61255	6.69E-03	40.97536	2.1E-05	6.71E-03
578737.1	4171583	9.60999	5.54E-03	35.9872	1.9E-05	5.56E-03
578783.3	4171599	20.68456	1.19E-02	31.58365	1.6E-05	1.19E-02
578865.5	4171567	26.68102	1.54E-02	26.70872	1.4E-05	1.54E-02
578880.4	4171564	27.94937	1.61E-02	18.44363	9.6E-06	1.61E-02
578827.6	4171559	12.51883	7.21E-03	37.00476	1.9E-05	7.23E-03
578801.3	4171554	7.78343	4.49E-03	36.66443	1.9E-05	4.50E-03
578785.8	4171549	6.74922	3.89E-03	31.20704	1.6E-05	3.91E-03
578770.3	4171547	6.43769	3.71E-03	29.82672	1.5E-05	3.73E-03
578753.1	4171545	6.13617	3.54E-03	28.19372	1.5E-05	3.55E-03
578867.2	4171552	18.23056	1.05E-02	16.34847	8.5E-06	1.05E-02
578870.1	4171534	12.55839	7.24E-03	10.17035	5.3E-06	7.24E-03
578829.9	4171536	7.71876	4.45E-03	14.26498	7.4E-06	4.46E-03
578819.6	4171538	6.98417	4.02E-03	16.69621	8.7E-06	4.03E-03
578872.7	4171519	9.33282	5.38E-03	7.02414	3.6E-06	5.38E-03
578887.8	4171525	11.8404	6.82E-03	7.2796	3.8E-06	6.83E-03
578829.1	4171512	4.99687	2.88E-03	7.32904	3.8E-06	2.88E-03
578812.4	4171504	3.66026	2.11E-03	5.98799	3.1E-06	2.11E-03
578796.5	4171508	3.51557	2.03E-03	6.65947	3.5E-06	2.03E-03
578775.9	4171516	3.89514	2.24E-03	8.3958	4.4E-06	2.25E-03
578777.5	4171501	3.13937	1.81E-03	5.39823	2.8E-06	1.81E-03
578759.3	4171514	3.80919	2.20E-03	7.32192	3.8E-06	2.20E-03
CONCUNIT /m^3		0	0.00E+00			
DEPUNIT g /s		0	0.00E+00			

Cancer Potency Factor:
Averaging Period

1.1 (mg/kg-day)⁻¹
 25550 days

Year	Unit DPM Concentration (ug/m3)	Dose Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Frequency (days/year)	Exposure Duration (years)	Unit Risk Factor (ug/m3) ⁻¹
3rd Trimester	1	10	361	0.85	350	0.08	3.9
infant	1	10	1090	0.85	350	0.08	11.6

BAAQMD 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines

Construction Cancer Risk Estimation

X (m)	Y (m)	DPM Emission Concentration ug/m3	Cancer Risk 2018 /million	
578818.9	4171632	0.06	0.7	Maximum Cancer Risk
578842.1	4171636	0.35	4.0	4.2
578851.9	4171638	0.36	4.2	BAAQMD Threshold of Significance
578803	4171629	0.04	0.5	10
578862.5	4171641	0.29	3.4	Exceed Thresholds?
578819.3	4171599	0.02	0.2	No
578854.1	4171606	0.06	0.7	
578871.6	4171610	0.07	0.9	
578882.5	4171615	0.08	0.9	
578797.3	4171598	0.01	0.1	
578770.4	4171588	0.01	0.1	
578752.1	4171585	0.01	0.1	
578737.1	4171583	0.01	0.1	
578783.3	4171599	0.01	0.1	
578865.5	4171567	0.02	0.2	
578880.4	4171564	0.02	0.2	
578827.6	4171559	0.01	0.1	
578801.3	4171554	0.00	0.1	
578785.8	4171549	0.00	0.0	
578770.3	4171547	0.00	0.0	
578753.1	4171545	0.00	0.0	
578867.2	4171552	0.01	0.1	
578870.1	4171534	0.01	0.1	
578829.9	4171536	0.00	0.1	
578819.6	4171538	0.00	0.0	
578872.7	4171519	0.01	0.1	
578887.8	4171525	0.01	0.1	
578829.1	4171512	0.00	0.0	
578812.4	4171504	0.00	0.0	
578796.5	4171508	0.00	0.0	
578775.9	4171516	0.00	0.0	
578777.5	4171501	0.00	0.0	
578759.3	4171514	0.00	0.0	
CONCUNIT /m^3		0.00	0.0	

Unmitigated

Chronic Non-Cancer Hazard Index

Reference Exposure Level (REL) for DPM: 5 ug/m3

CNCHI = DPM/REL

X	Y	DPM (ug/m3)	CNCHI
578818.9	4171632	0.061604	0.01
578842.1	4171636	0.345806	0.07
578851.9	4171638	0.360834	0.07
578803	4171629	0.043441	0.01
578862.5	4171641	0.288511	0.06
578819.3	4171599	0.01906	0.00
578854.1	4171606	0.06032	0.01
578871.6	4171610	0.074523	0.01
578882.5	4171615	0.080678	0.02
578797.3	4171598	0.012735	0.00
578770.4	4171588	0.008449	0.00
578752.1	4171585	0.006713	0.00
578737.1	4171583	0.005557	0.00
578783.3	4171599	0.011937	0.00
578865.5	4171567	0.01539	0.00
578880.4	4171564	0.016116	0.00
578827.6	4171559	0.007234	0.00
578801.3	4171554	0.004505	0.00
578785.8	4171549	0.003906	0.00
578770.3	4171547	0.003725	0.00
578753.1	4171545	0.003551	0.00
578867.2	4171552	0.010515	0.00
578870.1	4171534	0.007243	0.00
578829.9	4171536	0.004456	0.00
578819.6	4171538	0.004034	0.00
578872.7	4171519	0.005382	0.00
578887.8	4171525	0.006827	0.00
578829.1	4171512	0.002883	0.00
578812.4	4171504	0.002112	0.00
578796.5	4171508	0.002029	0.00
578775.9	4171516	0.002249	0.00
578777.5	4171501	0.001812	0.00
578759.3	4171514	0.002199	0.00
CONCUNIT /m^3		0	
0	0	0	
0	0	0	

Max Non-cancer risk 0.07 BAAQMD Threshold of Significance 1 Exceed threshold? No

Max PM2.5 Concentration 0.4 BAAQMD Threshold of Significance 0.3 Exceed threshold? YES

Outfront Media LED Billboard Project

Tier III

Notes: emissions are for 1 billboard (construction of each billboard uses the exact same assumptions, so the emissions estimates are also the same)
CalEEMod run used 25 sq ft as the project area

Construction Annual DPM Emissions (as PM2.5 Exhaust)

Construction Scheduling

2018
8 hours/day
5 days/week
4 weeks/year **4-week construction schedule**
160 hours/year

Construction Phase	Start Date	End Date	m Days W€	Num Days
Grading	10/1/2018	10/1/2018	5	1
Building Constructic	10/2/2018	10/26/2018	5	19
Paving	10/25/2018	10/26/2018	5	2
Total				20 working days because of overlap

Onsite Construction Area Source Size (m2): 6.1 from AERMOD

Onsite Construction PM2.5 Emissions

2018	Construction Activity	Onsite	Onsite	Onsite DPM
		Annual DPM	Annual DPM	Source Exhaust
		Exhaust Emissions	Exhaust Emissions	Emissions
		(tons/year)	(g/sec)	(g/m2-sec)
	Grading	1.400E-04	2.207E-04	3.618E-05
	Building Construction	9.200E-04	1.450E-03	2.378E-04
	Paving	0.000E+00	0.000E+00	0.000E+00
	Total	1.060E-03	1.671E-03	2.739E-04

Offsite Construction Vehicle PM2.5 Emissions

2018	Construction Activity	Offsite Hauling	Offsite Vendor	Offsite Workers
		Annual DPM	Annual DPM	Annual DPM
		Exhaust Emissions	Exhaust Emissions	Exhaust Emissions
		(tons/year)	(tons/year)	(tons/year)
	Grading	0.000E+00	0.000E+00	0.000E+00
	Building Construction	0.000E+00	2.000E-05	0.000E+00
	Paving	0.000E+00	0.000E+00	0.000E+00
	Total (tons/year)	0.000E+00	2.000E-05	0.000E+00

Trip Distance assumed in CalEEMod (mi) 20.0 7.3 10.8
Offsite Project Trip Distance Along Roadway Segment 0.12 0.12 0.12

Offsite Project Emissions Along Roadway Segment 0.000E+00 3.295E-07 0.000E+00

Offsite Emissions Along Roadway Segment Analyzed	
Total Offsite Project Exhaust Emissions (tons/year)	3.295E-07
Total Offsite Project Exhaust Emissions (grams/sec)	5.194E-07

Onsite Exhaust Emissions (tons/year)	1.060E-03
Total Onsite Emissions (tons/year)	1.060E-03
Onsite Exhaust Emissions (g/m2-sec)	2.739E-04

Total PM@2.5 Exhaust (tons/year) 1.060E-03

X	Y	Onsite DPM Concentration		Offise DPM Concentration		Total DPM
		Unit Emission	Actual Emission	Unit Emission	Actual Emission	
578818.9	4171632	106.8635	2.93E-02	38.58318	2.0E-05	2.93E-02
578842.1	4171636	600.00884	1.64E-01	55.80554	2.9E-05	1.64E-01
578851.9	4171638	626.10524	1.72E-01	34.25362	1.8E-05	1.72E-01
578803	4171629	75.36354	2.06E-02	20.05246	1.0E-05	2.07E-02
578862.5	4171641	500.61786	1.37E-01	22.79302	1.2E-05	1.37E-01
578819.3	4171599	33.02414	9.05E-03	56.0478	2.9E-05	9.08E-03
578854.1	4171606	104.6097	2.87E-02	66.85735	3.5E-05	2.87E-02
578871.6	4171610	129.28558	3.54E-02	33.04969	1.7E-05	3.54E-02
578882.5	4171615	139.97595	3.83E-02	23.08715	1.2E-05	3.84E-02
578797.3	4171598	22.06304	6.04E-03	39.50811	2.1E-05	6.06E-03
578770.4	4171588	14.62139	4.01E-03	43.50407	2.3E-05	4.03E-03
578752.1	4171585	11.61255	3.18E-03	40.97536	2.1E-05	3.20E-03
578737.1	4171583	9.60999	2.63E-03	35.9872	1.9E-05	2.65E-03
578783.3	4171599	20.68456	5.67E-03	31.58365	1.6E-05	5.68E-03
578865.5	4171567	26.68102	7.31E-03	26.70872	1.4E-05	7.32E-03
578880.4	4171564	27.94937	7.66E-03	18.44363	9.6E-06	7.67E-03
578827.6	4171559	12.51883	3.43E-03	37.00476	1.9E-05	3.45E-03
578801.3	4171554	7.78343	2.13E-03	36.66443	1.9E-05	2.15E-03
578785.8	4171549	6.74922	1.85E-03	31.20704	1.6E-05	1.87E-03
578770.3	4171547	6.43769	1.76E-03	29.82672	1.5E-05	1.78E-03
578753.1	4171545	6.13617	1.68E-03	28.19372	1.5E-05	1.70E-03
578867.2	4171552	18.23056	4.99E-03	16.34847	8.5E-06	5.00E-03
578870.1	4171534	12.55839	3.44E-03	10.17035	5.3E-06	3.45E-03
578829.9	4171536	7.71876	2.11E-03	14.26498	7.4E-06	2.12E-03
578819.6	4171538	6.98417	1.91E-03	16.69621	8.7E-06	1.92E-03
578872.7	4171519	9.33282	2.56E-03	7.02414	3.6E-06	2.56E-03
578887.8	4171525	11.8404	3.24E-03	7.2796	3.8E-06	3.25E-03
578829.1	4171512	4.99687	1.37E-03	7.32904	3.8E-06	1.37E-03
578812.4	4171504	3.66026	1.00E-03	5.98799	3.1E-06	1.01E-03
578796.5	4171508	3.51557	9.63E-04	6.65947	3.5E-06	9.66E-04
578775.9	4171516	3.89514	1.07E-03	8.3958	4.4E-06	1.07E-03
578777.5	4171501	3.13937	8.60E-04	5.39823	2.8E-06	8.63E-04
578759.3	4171514	3.80919	1.04E-03	7.32192	3.8E-06	1.05E-03
CONCUNIT /m^3		0	0.00E+00			
DEPUNIT g /s		0	0.00E+00			

Cancer Potency Factor:
Averaging Period

1.1 (mg/kg-day)⁻¹
 25550 days

Year	Unit DPM Concentration (ug/m3)	Daily Breathing Rate Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Frequency (days/year)	Exposure Duration (years)	Unit Risk Factor (ug/m3)⁻¹
3rd Trimester	1	10	361	0.85	350	0.08	3.9
infant	1	10	1090	0.85	350	0.08	11.6

BAAQMD 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines

Construction Cancer Risk Estimation

X (m)	Y (m)	DPM Emission Concentration ug/m3	Cancer Risk 2018 /million	
578818.9	4171632	0.03	0.3	Maximum Cancer Risk
578842.1	4171636	0.16	1.9	2.0
578851.9	4171638	0.17	2.0	BAAQMD Threshold of Significance
578803	4171629	0.02	0.2	10
578862.5	4171641	0.14	1.6	Exceed Thresholds?
578819.3	4171599	0.01	0.1	No
578854.1	4171606	0.03	0.3	
578871.6	4171610	0.04	0.4	
578882.5	4171615	0.04	0.4	
578797.3	4171598	0.01	0.1	
578770.4	4171588	0.00	0.0	
578752.1	4171585	0.00	0.0	
578737.1	4171583	0.00	0.0	
578783.3	4171599	0.01	0.1	
578865.5	4171567	0.01	0.1	
578880.4	4171564	0.01	0.1	
578827.6	4171559	0.00	0.0	
578801.3	4171554	0.00	0.0	
578785.8	4171549	0.00	0.0	
578770.3	4171547	0.00	0.0	
578753.1	4171545	0.00	0.0	
578867.2	4171552	0.01	0.1	
578870.1	4171534	0.00	0.0	
578829.9	4171536	0.00	0.0	
578819.6	4171538	0.00	0.0	
578872.7	4171519	0.00	0.0	
578887.8	4171525	0.00	0.0	
578829.1	4171512	0.00	0.0	
578812.4	4171504	0.00	0.0	
578796.5	4171508	0.00	0.0	
578775.9	4171516	0.00	0.0	
578777.5	4171501	0.00	0.0	
578759.3	4171514	0.00	0.0	
CONCUNIT /m^3		0.00	0.0	

Chronic Non-Cancer Hazard Index

Reference Exposure Level (REL) for DPM: 5 ug/m3

CNCHI = DPM/REL

X	Y	DPM (ug/m3)	CNCHI
578818.9	4171632	0.029293	0.006
578842.1	4171636	0.164389	0.033
578851.9	4171638	0.171527	0.034
578803	4171629	0.020655	0.004
578862.5	4171641	0.137146	0.027
578819.3	4171599	0.009075	0.002
578854.1	4171606	0.02869	0.006
578871.6	4171610	0.035432	0.007
578882.5	4171615	0.038356	0.008
578797.3	4171598	0.006064	0.001
578770.4	4171588	0.004028	0.001
578752.1	4171585	0.003202	0.001
578737.1	4171583	0.002651	0.001
578783.3	4171599	0.005683	0.001
578865.5	4171567	0.007323	0.001
578880.4	4171564	0.007666	0.002
578827.6	4171559	0.003449	0.001
578801.3	4171554	0.002151	0.000
578785.8	4171549	0.001865	0.000
578770.3	4171547	0.001779	0.000
578753.1	4171545	0.001696	0.000
578867.2	4171552	0.005002	0.001
578870.1	4171534	0.003445	0.001
578829.9	4171536	0.002122	0.000
578819.6	4171538	0.001922	0.000
578872.7	4171519	0.00256	0.001
578887.8	4171525	0.003247	0.001
578829.1	4171512	0.001373	0.000
578812.4	4171504	0.001006	0.000
578796.5	4171508	0.000966	0.000
578775.9	4171516	0.001071	0.000
578777.5	4171501	0.000863	0.000
578759.3	4171514	0.001047	0.000
CONCUNIT /m^3		0	

Max Non-cancer risk
0.03
BAAQMD Threshold of Significance
1
Exceed threshold?
No

Max PM2.5 Concentration
0.2
BAAQMD Threshold of Significance
0.3
Exceed threshold?
No

```

**
*****
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.6.1
** Lakes Environmental Software Inc.
** Date: 7/26/2018
** File: C:\Users\xli\Desktop\Billboard\construction HRA\construction
HRA.ADI
**
*****
**
**
*****
** AERMOD Control Pathway
*****
**
**
CO STARTING
  TITLEONE C:\Users\xli\Desktop\Billboard-HRA\construction
HRA\construction HRA
  MODELOPT DFAULT CONC
  AVERTIME ANNUAL
  URBANOPT 10000
  POLLUTID DPM
  RUNORNOT RUN
  ERRORFIL "construction HRA.err"
CO FINISHED
**
*****
** AERMOD Source Pathway
*****
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
  LOCATION PAREAL      AREAPOLY    578820.223  4171653.850
18.000
** DESCRSRC on-site area source
** -----
--
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC offsite haul trucks
** PREFIX
** Length of Side = 8.50
** Configuration = Adjacent
** Emission Rate = 1.0
** Elevated
** Vertical Dimension = 6.22
** SZINIT = 1.45

```

```

** Nodes = 4
** 578717.434, 4171571.259, 17.12, 3.11, 3.95
** 578720.418, 4171562.131, 17.30, 3.11, 3.95
** 578844.739, 4171584.952, 18.00, 3.11, 3.95
** 578828.329, 4171640.137, 18.00, 3.11, 3.95
** -----
--
LOCATION L0000001      VOLUME  578718.755 4171567.220 17.25
LOCATION L0000002      VOLUME  578723.513 4171562.699 17.45
LOCATION L0000003      VOLUME  578731.873 4171564.234 17.57
LOCATION L0000004      VOLUME  578740.233 4171565.768 17.71
LOCATION L0000005      VOLUME  578748.594 4171567.303 17.89
LOCATION L0000006      VOLUME  578756.954 4171568.838 18.00
LOCATION L0000007      VOLUME  578765.314 4171570.372 18.00
LOCATION L0000008      VOLUME  578773.675 4171571.907 18.00
LOCATION L0000009      VOLUME  578782.035 4171573.441 18.00
LOCATION L0000010      VOLUME  578790.395 4171574.976 18.00
LOCATION L0000011      VOLUME  578798.756 4171576.511 18.00
LOCATION L0000012      VOLUME  578807.116 4171578.045 18.00
LOCATION L0000013      VOLUME  578815.476 4171579.580 18.00
LOCATION L0000014      VOLUME  578823.837 4171581.115 18.00
LOCATION L0000015      VOLUME  578832.197 4171582.649 18.00
LOCATION L0000016      VOLUME  578840.557 4171584.184 18.00
LOCATION L0000017      VOLUME  578843.528 4171589.024 18.00
LOCATION L0000018      VOLUME  578841.106 4171597.171 18.00
LOCATION L0000019      VOLUME  578838.683 4171605.318 18.00
LOCATION L0000020      VOLUME  578836.260 4171613.466 18.00
LOCATION L0000021      VOLUME  578833.837 4171621.613 18.00
LOCATION L0000022      VOLUME  578831.414 4171629.761 18.00
LOCATION L0000023      VOLUME  578828.992 4171637.908 18.00
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
SRCPARAM PAREAL          1.0      5.000      4
AREAVERT PAREAL          578820.223 4171653.850 578819.787 4171651.273
AREAVERT PAREAL          578821.823 4171650.843 578822.259 4171654.279
** LINE VOLUME Source ID = SLINE1
SRCPARAM L0000001      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000002      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000003      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000004      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000005      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000006      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000007      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000008      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000009      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000010      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000011      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000012      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000013      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000014      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000015      0.0434782609      3.11      3.95      1.45
SRCPARAM L0000016      0.0434782609      3.11      3.95      1.45

```

SRCPARAM	L0000017	0.0434782609	3.11	3.95	1.45
SRCPARAM	L0000018	0.0434782609	3.11	3.95	1.45
SRCPARAM	L0000019	0.0434782609	3.11	3.95	1.45
SRCPARAM	L0000020	0.0434782609	3.11	3.95	1.45
SRCPARAM	L0000021	0.0434782609	3.11	3.95	1.45
SRCPARAM	L0000022	0.0434782609	3.11	3.95	1.45
SRCPARAM	L0000023	0.0434782609	3.11	3.95	1.45

** -----

--

URBANSRC PAREA1
 URBANSRC L0000001
 URBANSRC L0000002
 URBANSRC L0000003
 URBANSRC L0000004
 URBANSRC L0000005
 URBANSRC L0000006
 URBANSRC L0000007
 URBANSRC L0000008
 URBANSRC L0000009
 URBANSRC L0000010
 URBANSRC L0000011
 URBANSRC L0000012
 URBANSRC L0000013
 URBANSRC L0000014
 URBANSRC L0000015
 URBANSRC L0000016
 URBANSRC L0000017
 URBANSRC L0000018
 URBANSRC L0000019
 URBANSRC L0000020
 URBANSRC L0000021
 URBANSRC L0000022
 URBANSRC L0000023

** Variable Emissions Type: "By Hour / Day (HRDOW)"

** Variable Emission Scenario: "Scenario 2"

** WeekDays:

EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT	PAREA1	HRDOW	0.0	1.0	1.0	1.0	1.0	1.0
EMISFACT	PAREA1	HRDOW	1.0	1.0	1.0	0.0	0.0	0.0
EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** Saturday:

EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** Sunday:

EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0
EMISFACT	PAREA1	HRDOW	0.0	0.0	0.0	0.0	0.0	0.0

** WeekDays:


```

EMISFACT L0000019      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000019      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000020      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000020      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000020      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000020      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000021      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000021      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000021      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000021      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000022      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000022      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000022      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000022      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000023      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000023      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000023      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT L0000023      HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
SRCGROUP area          PAREAL
SRCGROUP line          L0000001 L0000002 L0000003 L0000004 L0000005
L0000006
SRCGROUP line          L0000007 L0000008 L0000009 L0000010 L0000011
L0000012
SRCGROUP line          L0000013 L0000014 L0000015 L0000016 L0000017
L0000018
SRCGROUP line          L0000019 L0000020 L0000021 L0000022 L0000023
SRCGROUP ALL
SO FINISHED
**
*****
** AERMOD Receptor Pathway
*****
**
**
RE STARTING
  INCLUDED "construction HRA.rou"
RE FINISHED
**
*****
** AERMOD Meteorology Pathway
*****
**
**
ME STARTING
  SURFFILE "..\724930 (1)\724930.SFC"
  PROFFILE "..\724930 (1)\724930.PFL"
  SURFDATA 23230 2009 OAKLAND/WSO_AP
  UAIRDATA 23230 2009 OAKLAND/WSO_AP
  PROFBASE 1.8 METERS
ME FINISHED
**
*****

```

```

** AERMOD Output Pathway
*****
**
**
OU STARTING
** Auto-Generated Plotfiles
  PLOTFILE ANNUAL ALL "construction HRA.AD\AN00GALL.PLT" 31
  PLOTFILE ANNUAL area "construction HRA.AD\AN00G001.PLT" 32
  PLOTFILE ANNUAL line "construction HRA.AD\AN00G002.PLT" 33
  SUMMFILE "construction HRA.sum"
OU FINISHED

```

*** Message Summary For AERMOD Model Setup ***

----- Summary of Total Messages -----

```

A Total of          0 Fatal Error Message(s)
A Total of          1 Warning Message(s)
A Total of          0 Informational Message(s)

```

```

***** FATAL ERROR MESSAGES *****
      *** NONE ***

```

```

***** WARNING MESSAGES *****
CO W320      22      URBOPT: Input Parameter May Be Out-of-Range for
Parameter    URB-POP

```

```

*****
*** SETUP Finishes Successfully ***
*****

```

```

*** AERMOD - VERSION 18081 ***      *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA ***      07/26/18
*** AERMET - VERSION 14134 ***      ***
***      15:49:40

```

```

PAGE 1
*** MODELOPTs:      RegDFAULT  CONC  ELEV  URBAN

```

```

*** MODEL SETUP
OPTIONS SUMMARY      ***

```

```

-----
-----

```

**Model Is Setup For Calculation of Average CONCentration Values.

```

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.

```

**NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION. DRYDPLT = F
 **Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 24
 Source(s),
 for Total of 1 Urban Area(s):
 Urban Population = 10000.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
 1. Stack-tip Downwash.
 2. Model Accounts for ELEVated Terrain Effects.
 3. Use Calms Processing Routine.
 4. Use Missing Data Processing Routine.
 5. No Exponential Decay.
 6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
 CCVR_Sub - Meteorological data includes CCVR substitutions
 TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates ANNUAL Averages Only

**This Run Includes: 24 Source(s); 3 Source Group(s); and
 33 Receptor(s)

with: 0 POINT(s), including
 0 POINTCAP(s) and 0 POINTHOR(s)
 and: 23 VOLUME source(s)
 and: 1 AREA type source(s)
 and: 0 LINE source(s)
 and: 0 OPENPIT source(s)
 and: 0 BUOYANT LINE source(s) with 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 14134

**Output Options Selected:
 Model Outputs Tables of ANNUAL Averages by Receptor
 Model Outputs External File(s) of High Values for Plotting
 (PLOTFILE Keyword)
 Model Outputs Separate Summary File of High Ranked Values
 (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for
 Calm Hours

Missing Hours m for
 Both Calm and Missing Hours b for

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =
 1.80 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
 Emission Units =
 GRAMS/SEC ; Emission Rate Unit Factor
 = 0.10000E+07
 Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: aermod.inp
 **Output Print File: aermod.out

**Detailed Error/Message File: construction HRA.err
 **File for Summary of Results: construction HRA.sum

*** AERMOD - VERSION 18081 *** C:\Users\xli\Desktop\Billboard-
 HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 ***
 *** 15:49:40

PAGE 2

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** VOLUME SOURCE

DATA ***

INIT.	INIT.	NUMBER	EMISSION	EMISSION	BASE	RELEASE
SOURCE	SOURCE	URBAN	RATE	RATE	ELEV.	HEIGHT
SY	SZ	PART.	(GRAMS/SEC)	X	Y	
ID	SOURCE	SCALAR	VARY	(METERS)	(METERS)	(METERS)
(METERS)	(METERS)	CATS.	BY			(METERS)
L0000001		0	0.43478E-01	578718.8	4171567.2	3.11
3.95	1.45	YES	HRDOW			
L0000002		0	0.43478E-01	578723.5	4171562.7	3.11
3.95	1.45	YES	HRDOW			
L0000003		0	0.43478E-01	578731.9	4171564.2	3.11
3.95	1.45	YES	HRDOW			
L0000004		0	0.43478E-01	578740.2	4171565.8	3.11
3.95	1.45	YES	HRDOW			
L0000005		0	0.43478E-01	578748.6	4171567.3	3.11
3.95	1.45	YES	HRDOW			

L0000006	0	0.43478E-01	578757.0	4171568.8	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000007	0	0.43478E-01	578765.3	4171570.4	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000008	0	0.43478E-01	578773.7	4171571.9	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000009	0	0.43478E-01	578782.0	4171573.4	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000010	0	0.43478E-01	578790.4	4171575.0	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000011	0	0.43478E-01	578798.8	4171576.5	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000012	0	0.43478E-01	578807.1	4171578.0	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000013	0	0.43478E-01	578815.5	4171579.6	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000014	0	0.43478E-01	578823.8	4171581.1	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000015	0	0.43478E-01	578832.2	4171582.6	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000016	0	0.43478E-01	578840.6	4171584.2	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000017	0	0.43478E-01	578843.5	4171589.0	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000018	0	0.43478E-01	578841.1	4171597.2	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000019	0	0.43478E-01	578838.7	4171605.3	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000020	0	0.43478E-01	578836.3	4171613.5	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000021	0	0.43478E-01	578833.8	4171621.6	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000022	0	0.43478E-01	578831.4	4171629.8	18.0	3.11
3.95	1.45	YES	HRDOW			
L0000023	0	0.43478E-01	578829.0	4171637.9	18.0	3.11
3.95	1.45	YES	HRDOW			

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 3
*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** AREAPOLY SOURCE

DATA ***

RELEASE	NUMBER	NUMBER	EMISSION RATE	INIT.	URBAN	EMISSION RATE	LOCATION OF AREA	BASE
---------	--------	--------	---------------	-------	-------	---------------	------------------	------

SOURCE HEIGHT OF VERTS. ID (METERS)	PART. CATS. (METERS)	(GRAMS/SEC SZ /METER**2) (METERS)	X SCALAR (METERS) BY	Y VARY (METERS)	ELEV. (METERS)
--	----------------------------	--	-------------------------------	-----------------------	-------------------

PAREA1 4	0 0.00	0.10000E+01 YES HRDOW	578820.2	4171653.8	18.0 5.00
-------------	-----------	--------------------------	----------	-----------	--------------

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 4
*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINING

SOURCE GROUPS ***

SRCGROUP ID -----	SOURCE IDs -----
AREA PAREA1	,
LINE L0000001	, L0000002
L0000005 , L0000006	, L0000007
	, L0000008
	, L0000009
L0000013 , L0000014	, L0000015
	, L0000016
	, L0000017
L0000021 , L0000022	, L0000023
	, L0000019
	, L0000020
ALL PAREA1	, L0000001
L0000004 , L0000005	, L0000006
	, L0000007
	, L0000008
L0000012 , L0000013	, L0000014
	, L0000015
	, L0000016
L0000020 , L0000021	, L0000022
	, L0000023

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 5

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** SOURCE IDs DEFINED AS

URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs			
-----	-----	-----	-----	-----	-----
L0000003	10000.	PAREAL	L0000001	L0000002	
L0000007		L0000004	L0000005	L0000006	
L0000012		L0000008	L0000009	L0000010	L0000011
		L0000013	L0000014	L0000015	
L0000020		L0000016	L0000017	L0000018	L0000019
		L0000021	L0000022	L0000023	

*** AERMOD - VERSION 18081 *** C:\Users\xli\Desktop\Billboard-HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 *** ***
 *** 15:49:40

PAGE 6

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = PAREAL ; SOURCE TYPE = AREAPOLY :

SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR		
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		
DAY OF WEEK = WEEKDAY											
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00
7	.0000E+00	8	.1000E+01	9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01
13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.0000E+00	17	.0000E+00	18	.0000E+00
19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SATURDAY											
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00
7	.0000E+00	8	.0000E+00	9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00
13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00	17	.0000E+00	18	.0000E+00
19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SUNDAY											

```

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 7

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000001 ; SOURCE TYPE = VOLUME :
  HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
- - - - -
- - - - -

```

```

DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000002 ; SOURCE TYPE = VOLUME :
 HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
 SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
 - - - - -

DAY OF WEEK = WEEKDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
 9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
 13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SATURDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
 9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
 13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SUNDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
 9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
 13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 *** ***
 *** 15:49:40

PAGE 9
 *** MODELOPTs: RegDEFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000003 ; SOURCE TYPE = VOLUME :
 HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
 SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
 - - - - -

DAY OF WEEK = WEEKDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
 9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
 13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00

```

17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 10

*** MODELOPTs: RegDFault CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000004 ; SOURCE TYPE = VOLUME :
HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
- - - - -
DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00

```

17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000005 ; SOURCE TYPE = VOLUME :
HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 12

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000006 ; SOURCE TYPE = VOLUME :
 HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
 SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

 DAY OF WEEK = WEEKDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
 9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
 13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
 DAY OF WEEK = SATURDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
 9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
 13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
 DAY OF WEEK = SUNDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
 9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
 13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
 HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 *** ***
 *** 15:49:40

PAGE 13
 *** MODELOPTs: RegDFault CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
 AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000007 ; SOURCE TYPE = VOLUME :
 HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
 SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

 DAY OF WEEK = WEEKDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
 9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
 13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
 DAY OF WEEK = SATURDAY

```

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 14

*** MODELOPTs: RegDFault CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000008 ; SOURCE TYPE = VOLUME :
  HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
-----
DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```


*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 *** ***
 *** 15:49:40

PAGE 15

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000009 ; SOURCE TYPE = VOLUME :

SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR

DAY OF WEEK = WEEKDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00
6	.0000E+00	7	.0000E+00	8	.1000E+01	9	.1000E+01	10	.1000E+01
11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01
16	.0000E+00	17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00
21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00	25	.0000E+00
DAY OF WEEK = SATURDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00
6	.0000E+00	7	.0000E+00	8	.0000E+00	9	.0000E+00	10	.0000E+00
11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00
16	.0000E+00	17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00
21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00	25	.0000E+00
DAY OF WEEK = SUNDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00
6	.0000E+00	7	.0000E+00	8	.0000E+00	9	.0000E+00	10	.0000E+00
11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00
16	.0000E+00	17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00
21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00	25	.0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 *** ***
 *** 15:49:40

PAGE 16

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000010 ; SOURCE TYPE = VOLUME :

SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR	SCALAR

```

-----
DAY OF WEEK = WEEKDAY
  1 .0000E+00  2 .0000E+00  3 .0000E+00  4 .0000E+00
5 .0000E+00  6 .0000E+00  7 .0000E+00  8 .1000E+01
  9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
  1 .0000E+00  2 .0000E+00  3 .0000E+00  4 .0000E+00
5 .0000E+00  6 .0000E+00  7 .0000E+00  8 .0000E+00
  9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
  1 .0000E+00  2 .0000E+00  3 .0000E+00  4 .0000E+00
5 .0000E+00  6 .0000E+00  7 .0000E+00  8 .0000E+00
  9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 ***   *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA ***   07/26/18
*** AERMET - VERSION 14134 ***   ***
***   15:49:40

```

PAGE 17

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000011 ; SOURCE TYPE = VOLUME :
  HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
-----

```

```

DAY OF WEEK = WEEKDAY
  1 .0000E+00  2 .0000E+00  3 .0000E+00  4 .0000E+00
5 .0000E+00  6 .0000E+00  7 .0000E+00  8 .1000E+01
  9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
  1 .0000E+00  2 .0000E+00  3 .0000E+00  4 .0000E+00
5 .0000E+00  6 .0000E+00  7 .0000E+00  8 .0000E+00
  9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00

```

```

17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
                                DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 18

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000012 ; SOURCE TYPE = VOLUME :
  HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
-----
                                DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
                                DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
                                DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 19

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000013 ; SOURCE TYPE = VOLUME :
HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

Table with 24 columns (4 groups of 6) representing emission rate scalars for Weekday, Saturday, and Sunday. Values range from .0000E+00 to .1000E+01.

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 20

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000014 ; SOURCE TYPE = VOLUME :
HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

DAY OF WEEK = WEEKDAY

```

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 21

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000015 ; SOURCE TYPE = VOLUME :
  HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
-----
DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY

```

```

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 22

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000016 ; SOURCE TYPE = VOLUME :
  HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
- - - - -
- - - - -

```

```

DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 23

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000017 ; SOURCE TYPE = VOLUME :
 HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
 SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
 - - - - -
 - - - - -

DAY OF WEEK = WEEKDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
 9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
 13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SATURDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
 9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
 13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SUNDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
 9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
 13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
 HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 *** ***
 *** 15:49:40

PAGE 24

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000018 ; SOURCE TYPE = VOLUME :
 HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
 SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
 - - - - -
 - - - - -

DAY OF WEEK = WEEKDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
 9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
 13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00

```

17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 25

*** MODELOPTs: RegDFault CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000019 ; SOURCE TYPE = VOLUME :
  HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
- - - - -
DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00

```


17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 26

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000020 ; SOURCE TYPE = VOLUME :
HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 27

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000021 ; SOURCE TYPE = VOLUME :
 HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
 SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

DAY OF WEEK = WEEKDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
 9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
 13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SATURDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
 9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
 13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SUNDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
 9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
 13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
 HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 *** ***
 *** 15:49:40

PAGE 28

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY
 AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = L0000022 ; SOURCE TYPE = VOLUME :
 HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
 SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

DAY OF WEEK = WEEKDAY
 1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
 5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
 9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
 13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
 17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
 21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SATURDAY

```

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 29

*** MODELOPTs: RegDFault CONC ELEV URBAN

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

```

SOURCE ID = L0000023 ; SOURCE TYPE = VOLUME :
HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR
SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
-----
DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01
13 .1000E+01 14 .1000E+01 15 .1000E+01 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00
5 .0000E+00 6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00
13 .0000E+00 14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00
21 .0000E+00 22 .0000E+00 23 .0000E+00 24 .0000E+00

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 30

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** DISCRETE CARTESIAN
RECEPTORS ***
(X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
(METERS)

(578818.9, 4171632.4, 18.0, 18.0, 0.0);
(578842.1, 4171635.9, 18.0, 18.0, 0.0);
(578851.9, 4171638.4, 18.0, 18.0, 0.0);
(578803.0, 4171629.3, 18.0, 18.0, 0.0);
(578862.5, 4171641.2, 18.0, 18.0, 0.0);
(578819.3, 4171598.8, 18.0, 18.0, 0.0);
(578854.1, 4171606.4, 18.0, 18.0, 0.0);
(578871.6, 4171610.2, 18.0, 18.0, 0.0);
(578882.5, 4171614.9, 18.0, 18.0, 0.0);
(578797.3, 4171597.7, 18.0, 18.0, 0.0);
(578770.4, 4171588.4, 18.0, 18.0, 0.0);
(578752.1, 4171584.8, 18.0, 18.0, 0.0);
(578737.1, 4171582.8, 17.5, 17.5, 0.0);
(578783.3, 4171598.6, 18.0, 18.0, 0.0);
(578865.5, 4171566.5, 18.0, 18.0, 0.0);
(578880.4, 4171564.2, 18.0, 18.0, 0.0);
(578827.6, 4171559.0, 18.0, 18.0, 0.0);
(578801.3, 4171554.5, 18.0, 18.0, 0.0);
(578785.8, 4171549.3, 18.0, 18.0, 0.0);
(578770.3, 4171547.0, 18.0, 18.0, 0.0);
(578753.1, 4171545.3, 18.0, 18.0, 0.0);
(578867.2, 4171551.6, 18.0, 18.0, 0.0);
(578870.1, 4171534.4, 18.0, 18.0, 0.0);
(578829.9, 4171535.6, 18.0, 18.0, 0.0);
(578819.6, 4171538.4, 18.0, 18.0, 0.0);
(578872.7, 4171518.8, 18.0, 18.0, 0.0);
(578887.8, 4171525.1, 18.0, 18.0, 0.0);
(578829.1, 4171512.4, 18.0, 18.0, 0.0);
(578812.4, 4171503.7, 18.0, 18.0, 0.0);
(578796.5, 4171507.7, 18.0, 18.0, 0.0);
(578775.9, 4171516.4, 18.0, 18.0, 0.0);
(578777.5, 4171501.3, 18.0, 18.0, 0.0);
(578759.3, 4171514.0, 18.0, 18.0, 0.0);

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN

*** METEOROLOGICAL DAYS

SELECTED FOR PROCESSING ***

(1=YES;

0=NO)

```

           1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH

FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

8.23, 10.80, 1.54, 3.09, 5.14,

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN

*** UP TO THE FIRST 24 HOURS OF

METEOROLOGICAL DATA ***

```

Surface file: ..\724930 (1)\724930.SFC
Met Version: 14134
Profile file: ..\724930 (1)\724930.PFL

```

Surface format: FREE
 Profile format: FREE
 Surface station no.: 23230 Upper air station
 no.: 23230

Name: OAKLAND/WSO_AP
 Name: OAKLAND/WSO_AP
 Year: 2009
 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN
Z0	BOWEN	ALBEDO	REF	WS	WD	HT	REF	TA	HT			
09	01	01	1	01	-17.2	0.303	-9.000	-9.000	-999.	401.		147.2
0.63	0.86	1.00		2.36	81.	10.0	282.5		2.0			
09	01	01	1	02	-21.8	0.383	-9.000	-9.000	-999.	569.		234.6
0.63	0.86	1.00		2.86	68.	10.0	282.0		2.0			
09	01	01	1	03	-26.3	0.460	-9.000	-9.000	-999.	749.		337.1
0.63	0.86	1.00		3.36	84.	10.0	280.9		2.0			
09	01	01	1	04	-15.4	0.270	-9.000	-9.000	-999.	368.		116.1
0.47	0.86	1.00		2.36	53.	10.0	280.9		2.0			
09	01	01	1	05	-26.3	0.460	-9.000	-9.000	-999.	749.		336.3
0.63	0.86	1.00		3.36	73.	10.0	280.4		2.0			
09	01	01	1	06	-21.9	0.383	-9.000	-9.000	-999.	573.		232.9
0.63	0.86	1.00		2.86	82.	10.0	280.4		2.0			
09	01	01	1	07	-22.0	0.383	-9.000	-9.000	-999.	569.		232.5
0.63	0.86	1.00		2.86	95.	10.0	279.9		2.0			
09	01	01	1	08	-11.2	0.196	-9.000	-9.000	-999.	238.		60.6
0.63	0.86	0.76		1.76	73.	10.0	279.9		2.0			
09	01	01	1	09	-2.2	-9.000	-9.000	-9.000	-999.	-999.		-99999.0
0.45	0.86	0.39		0.00	0.	10.0	280.4		2.0			
09	01	01	1	10	6.8	0.266	0.264	0.016	98.	329.		-250.8
0.63	0.86	0.27		1.76	91.	10.0	280.9		2.0			
09	01	01	1	11	15.5	-9.000	-9.000	-9.000	177.	-999.		-99999.0
0.45	0.86	0.22		0.00	0.	10.0	282.0		2.0			
09	01	01	1	12	96.1	0.393	1.019	0.014	401.	591.		-57.4
0.22	0.86	0.21		3.36	266.	10.0	281.4		2.0			
09	01	01	1	13	102.5	0.395	1.092	0.014	462.	595.		-54.4
0.22	0.86	0.20		3.36	283.	10.0	282.0		2.0			
09	01	01	1	14	89.9	0.297	1.066	0.015	489.	394.		-26.5
0.22	0.86	0.21		2.36	249.	10.0	282.0		2.0			
09	01	01	1	15	62.1	0.383	0.954	0.014	507.	569.		-82.1
0.22	0.86	0.24		3.36	242.	10.0	282.5		2.0			
09	01	01	1	16	23.1	0.665	0.690	0.006	513.	1300.		-1150.4
0.52	0.86	0.33		4.86	304.	10.0	282.5		2.0			
09	01	01	1	17	-37.0	0.486	-9.000	-9.000	-999.	846.		280.6
0.22	0.86	0.56		4.86	291.	10.0	281.4		2.0			
09	01	01	1	18	-52.2	0.480	-9.000	-9.000	-999.	799.		191.9
0.52	0.86	1.00		3.86	307.	10.0	280.9		2.0			
09	01	01	1	19	-25.6	0.224	-9.000	-9.000	-999.	327.		39.8
0.52	0.86	1.00		2.36	334.	10.0	280.4		2.0			

```

09 01 01 1 20 -11.1 0.119 -9.000 -9.000 -999. 115. 13.8
0.52 0.86 1.00 1.76 317. 10.0 280.4 2.0
09 01 01 1 21 -10.3 0.119 -9.000 -9.000 -999. 98. 14.7
0.52 0.86 1.00 1.76 320. 10.0 280.4 2.0
09 01 01 1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0
0.45 0.86 1.00 0.00 0. 10.0 280.9 2.0
09 01 01 1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0
0.45 0.86 1.00 0.00 0. 10.0 281.4 2.0
09 01 01 1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0
0.45 0.86 1.00 0.00 0. 10.0 281.4 2.0

```

First hour of profile data

```

YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV
09 01 01 01 10.0 1 81. 2.36 282.6 99.0 -99.00 -99.00

```

F indicates top of profile (=1) or below (=0)

```

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

```

PAGE 33

```

*** MODELOPTs: RegDFault CONC ELEV URBAN

```

```

*** THE ANNUAL AVERAGE CONCENTRATION VALUES
AVERAGED OVER 5 YEARS FOR SOURCE GROUP: AREA ***
INCLUDING SOURCE(S):

```

PAREAL ,

*** DISCRETE CARTESIAN

RECEPTOR POINTS ***

```

** CONC OF DPM IN
**
MICROGRAMS/M**3

```

X-COORD (M)	Y-COORD (M)	CONC	X-
578818.85	4171632.43	106.86350	
578842.07	4171635.95	600.00884	
578851.92	4171638.41	626.10524	
578803.01	4171629.26	75.36354	
578862.48	4171641.23	500.61786	
578819.30	4171598.78	33.02414	
578854.12	4171606.43	104.60970	
578871.61	4171610.18	129.28558	
578882.54	4171614.86	139.97595	
578797.28	4171597.69	22.06304	

	578770.36	4171588.40	14.62139
578752.06	4171584.84	11.61255	
	578737.05	4171582.81	9.60999
578783.33	4171598.57	20.68456	
	578865.46	4171566.50	26.68102
578880.36	4171564.21	27.94937	
	578827.64	4171559.05	12.51883
578801.28	4171554.47	7.78343	
	578785.81	4171549.31	6.74922
578770.34	4171547.02	6.43769	
	578753.14	4171545.30	6.13617
578867.18	4171551.60	18.23056	
	578870.05	4171534.41	12.55839
578829.93	4171535.56	7.71876	
	578819.62	4171538.42	6.98417
578872.68	4171518.77	9.33282	
	578887.75	4171525.12	11.84040
578829.06	4171512.43	4.99687	
	578812.40	4171503.70	3.66026
578796.54	4171507.67	3.51557	
	578775.91	4171516.39	3.89514
578777.50	4171501.32	3.13937	
	578759.26	4171514.01	3.80919

```

*** AERMOD - VERSION 18081 ***   *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA ***   07/26/18
*** AERMET - VERSION 14134 ***   ***
***   15:49:40

```

PAGE 34

```
*** MODELOPTs:   RegDFAULT  CONC  ELEV  URBAN
```

```

*** THE ANNUAL AVERAGE CONCENTRATION VALUES
AVERAGED OVER 5 YEARS FOR SOURCE GROUP: LINE ***
INCLUDING SOURCE(S):
L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
          L0000006 , L0000007 , L0000008 ,
L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
          L0000014 , L0000015 , L0000016 ,
L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
          L0000022 , L0000023 ,

```

```

*** DISCRETE CARTESIAN
RECEPTOR POINTS ***

```

```

** CONC OF DPM      IN
**
MICROGRAMS/M**3

      X-COORD (M)  Y-COORD (M)      CONC      X-
COORD (M)  Y-COORD (M)      CONC
-----

```


578842.07	578818.85	4171632.43	38.58318
	4171635.95	55.80554	
	578851.92	4171638.41	34.25362
578803.01	4171629.26	20.05246	
	578862.48	4171641.23	22.79302
578819.30	4171598.78	56.04780	
	578854.12	4171606.43	66.85735
578871.61	4171610.18	33.04969	
	578882.54	4171614.86	23.08715
578797.28	4171597.69	39.50811	
	578770.36	4171588.40	43.50407
578752.06	4171584.84	40.97536	
	578737.05	4171582.81	35.98720
578783.33	4171598.57	31.58365	
	578865.46	4171566.50	26.70872
578880.36	4171564.21	18.44363	
	578827.64	4171559.05	37.00476
578801.28	4171554.47	36.66443	
	578785.81	4171549.31	31.20704
578770.34	4171547.02	29.82672	
	578753.14	4171545.30	28.19372
578867.18	4171551.60	16.34847	
	578870.05	4171534.41	10.17035
578829.93	4171535.56	14.26498	
	578819.62	4171538.42	16.69621
578872.68	4171518.77	7.02414	
	578887.75	4171525.12	7.27960
578829.06	4171512.43	7.32904	
	578812.40	4171503.70	5.98799
578796.54	4171507.67	6.65947	
	578775.91	4171516.39	8.39580
578777.50	4171501.32	5.39823	
	578759.26	4171514.01	7.32192

*** AERMOD - VERSION 18081 *** C:\Users\xli\Desktop\Billboard-HRA\construction HRA\construction HRA *** 07/26/18
 *** AERMET - VERSION 14134 *** ***
 *** 15:49:40

PAGE 35

*** MODELOPTs: RegDFAULT CONC ELEV URBAN

*** THE ANNUAL AVERAGE CONCENTRATION VALUES
 AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S):

PAREAL	, L0000001	, L0000002	, L0000003	, L0000004	,
	L0000005	, L0000006	, L0000007	,	
L0000008	, L0000009	, L0000010	, L0000011	, L0000012	,
	L0000013	, L0000014	, L0000015	,	
L0000016	, L0000017	, L0000018	, L0000019	, L0000020	,
	L0000021	, L0000022	, L0000023	,	

*** DISCRETE CARTESIAN

RECEPTOR POINTS ***

MICROGRAMS/M**3			** CONC OF DPM	IN
X-COORD (M)	Y-COORD (M)	CONC		X-
578818.85	4171632.43	145.44667		
578842.07	4171635.95	655.81438		
578851.92	4171638.41	660.35886		
578803.01	4171629.26	95.41600		
578862.48	4171641.23	523.41087		
578819.30	4171598.78	89.07194		
578854.12	4171606.43	171.46705		
578871.61	4171610.18	162.33527		
578882.54	4171614.86	163.06310		
578797.28	4171597.69	61.57115		
578770.36	4171588.40	58.12547		
578752.06	4171584.84	52.58791		
578737.05	4171582.81	45.59718		
578783.33	4171598.57	52.26821		
578865.46	4171566.50	53.38974		
578880.36	4171564.21	46.39300		
578827.64	4171559.05	49.52359		
578801.28	4171554.47	44.44786		
578785.81	4171549.31	37.95626		
578770.34	4171547.02	36.26441		
578753.14	4171545.30	34.32989		
578867.18	4171551.60	34.57903		
578870.05	4171534.41	22.72874		
578829.93	4171535.56	21.98374		
578819.62	4171538.42	23.68038		
578872.68	4171518.77	16.35697		
578887.75	4171525.12	19.12000		
578829.06	4171512.43	12.32590		
578812.40	4171503.70	9.64824		
578796.54	4171507.67	10.17504		
578775.91	4171516.39	12.29094		
578777.50	4171501.32	8.53761		
578759.26	4171514.01	11.13111		

*** AERMOD - VERSION 18081 *** *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA *** 07/26/18
*** AERMET - VERSION 14134 *** ***
*** 15:49:40

PAGE 36

*** MODELOPTs: RegDFault CONC ELEV URBAN

*** THE SUMMARY OF MAXIMUM ANNUAL
RESULTS AVERAGED OVER 5 YEARS ***

MICROGRAMS/M**3 ** CONC OF DPM IN
 **

NETWORK
GROUP ID AVERAGE CONC RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

AREA	1ST HIGHEST VALUE IS	626.10524 AT (	578851.92,
4171638.41,	18.00, 18.00,	0.00) DC	
	2ND HIGHEST VALUE IS	600.00884 AT (	578842.07,
4171635.95,	18.00, 18.00,	0.00) DC	
	3RD HIGHEST VALUE IS	500.61786 AT (	578862.48,
4171641.23,	18.00, 18.00,	0.00) DC	
	4TH HIGHEST VALUE IS	139.97595 AT (	578882.54,
4171614.86,	18.00, 18.00,	0.00) DC	
	5TH HIGHEST VALUE IS	129.28558 AT (	578871.61,
4171610.18,	18.00, 18.00,	0.00) DC	
	6TH HIGHEST VALUE IS	106.86350 AT (	578818.85,
4171632.43,	18.00, 18.00,	0.00) DC	
	7TH HIGHEST VALUE IS	104.60970 AT (	578854.12,
4171606.43,	18.00, 18.00,	0.00) DC	
	8TH HIGHEST VALUE IS	75.36354 AT (	578803.01,
4171629.26,	18.00, 18.00,	0.00) DC	
	9TH HIGHEST VALUE IS	33.02414 AT (	578819.30,
4171598.78,	18.00, 18.00,	0.00) DC	
	10TH HIGHEST VALUE IS	27.94937 AT (	578880.36,
4171564.21,	18.00, 18.00,	0.00) DC	

LINE	1ST HIGHEST VALUE IS	66.85735 AT (	578854.12,
4171606.43,	18.00, 18.00,	0.00) DC	
	2ND HIGHEST VALUE IS	56.04780 AT (	578819.30,
4171598.78,	18.00, 18.00,	0.00) DC	
	3RD HIGHEST VALUE IS	55.80554 AT (	578842.07,
4171635.95,	18.00, 18.00,	0.00) DC	
	4TH HIGHEST VALUE IS	43.50407 AT (	578770.36,
4171588.40,	18.00, 18.00,	0.00) DC	
	5TH HIGHEST VALUE IS	40.97536 AT (	578752.06,
4171584.84,	17.96, 17.96,	0.00) DC	
	6TH HIGHEST VALUE IS	39.50811 AT (	578797.28,
4171597.69,	18.00, 18.00,	0.00) DC	
	7TH HIGHEST VALUE IS	38.58318 AT (	578818.85,
4171632.43,	18.00, 18.00,	0.00) DC	
	8TH HIGHEST VALUE IS	37.00476 AT (	578827.64,
4171559.05,	18.00, 18.00,	0.00) DC	

```

          9TH HIGHEST VALUE IS      36.66443 AT ( 578801.28,
4171554.47,    18.00,    18.00,    0.00) DC
          10TH HIGHEST VALUE IS     35.98720 AT ( 578737.05,
4171582.81,    17.46,    17.46,    0.00) DC

ALL      1ST HIGHEST VALUE IS     660.35886 AT ( 578851.92,
4171638.41,    18.00,    18.00,    0.00) DC
          2ND HIGHEST VALUE IS     655.81438 AT ( 578842.07,
4171635.95,    18.00,    18.00,    0.00) DC
          3RD HIGHEST VALUE IS     523.41087 AT ( 578862.48,
4171641.23,    18.00,    18.00,    0.00) DC
          4TH HIGHEST VALUE IS     171.46705 AT ( 578854.12,
4171606.43,    18.00,    18.00,    0.00) DC
          5TH HIGHEST VALUE IS     163.06310 AT ( 578882.54,
4171614.86,    18.00,    18.00,    0.00) DC
          6TH HIGHEST VALUE IS     162.33527 AT ( 578871.61,
4171610.18,    18.00,    18.00,    0.00) DC
          7TH HIGHEST VALUE IS     145.44667 AT ( 578818.85,
4171632.43,    18.00,    18.00,    0.00) DC
          8TH HIGHEST VALUE IS      95.41600 AT ( 578803.01,
4171629.26,    18.00,    18.00,    0.00) DC
          9TH HIGHEST VALUE IS      89.07194 AT ( 578819.30,
4171598.78,    18.00,    18.00,    0.00) DC
          10TH HIGHEST VALUE IS     61.57115 AT ( 578797.28,
4171597.69,    18.00,    18.00,    0.00) DC

```

```

*** RECEPTOR TYPES:  GC = GRIDCART
                       GP = GRIDPOLR
                       DC = DISCCART
                       DP = DISCPOLR

```

```

*** AERMOD - VERSION 18081 ***      *** C:\Users\xli\Desktop\Billboard-
HRA\construction HRA\construction HRA ***      07/26/18
*** AERMET - VERSION 14134 ***      ***
***      15:49:40

```

PAGE 37

```

*** MODELOPTs:      RegDFAULT  CONC  ELEV  URBAN

```

```

*** Message Summary : AERMOD Model Execution ***

```

```

----- Summary of Total Messages -----

```

```

A Total of          0 Fatal Error Message(s)
A Total of          2 Warning Message(s)
A Total of        7953 Informational Message(s)

A Total of        43872 Hours Were Processed

A Total of          7152 Calm Hours Identified

```

A Total of 801 Missing Hours Identified (1.83 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
CO W320 22 URBOPT: Input Parameter May Be Out-of-Range for
Parameter URB-POP
MX W481 43873 MAIN: Data Remaining After End of Year.
Number of Hours= 48

*** AERMOD Finishes Successfully ***

Construction Vehicle Fuel Calculations

California Air Resource Board (ARB). 2020. EMFAC2014 Web Database. Website: <https://www.arb.ca.gov/emfac/2014/>. Accessed May 26, 2021.

VMT = Vehicle Miles Traveled
FE = Fuel Economy

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Alameda

Calendar Year: 2018

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gallons/day)	Calculations	
										FE (mi/gallon)	VMT*FE
Alameda	2018	HHDT	Aggregated	Aggregated	GAS	71.877063	10110.24183	1438.116	2.247261	4.498918231	45485.1513
Alameda	2018	HHDT	Aggregated	Aggregated	DSL	11774.312	1686553.417	0	298.083	5.657999824	9542518.933
Alameda	2018	LDA	Aggregated	Aggregated	GAS	603765.17	22412837.21	3777600	826.2446	27.12615365	607974065.9
Alameda	2018	LDA	Aggregated	Aggregated	DSL	6001.6552	233260.3212	36581.46	6.778161	34.41351064	8027306.548
Alameda	2018	LDT1	Aggregated	Aggregated	GAS	50960.598	1780689.977	308842.7	76.78538	23.19048099	41295057.07
Alameda	2018	LDT1	Aggregated	Aggregated	DSL	85.322178	1771.04029	405.9872	0.068005	26.04271563	46122.69863
Alameda	2018	LDT2	Aggregated	Aggregated	GAS	197229.07	7892076.481	1239667	386.2726	20.43136564	161245900.3
Alameda	2018	LDT2	Aggregated	Aggregated	DSL	254.82532	12516.21895	1643.864	0.449246	27.86047145	348707.7607
Alameda	2018	LHDT1	Aggregated	Aggregated	GAS	13564.688	441904.6199	202093.6	46.10563	9.58461273	4235484.646
Alameda	2018	LHDT1	Aggregated	Aggregated	DSL	9013.902	341528.3868	113383.5	19.90353	17.1591836	5860348.295
Alameda	2018	LHDT2	Aggregated	Aggregated	GAS	2114.1303	80764.21211	31497.39	9.324535	8.661473191	699537.0579
Alameda	2018	LHDT2	Aggregated	Aggregated	DSL	3176.4797	135968.5561	39956.12	8.822267	15.41197529	2095544.027
Alameda	2018	MHDT	Aggregated	Aggregated	GAS	1529.9703	80620.26253	30611.65	12.82429	6.286530019	506821.7006
Alameda	2018	MHDT	Aggregated	Aggregated	DSL	14948.967	815782.8638	0	98.98936	8.241116724	6722961.802

Worker
 Sum of VMT*FE (Column B) **818937160.3**
 Total VMT **32333151.25**
 Weighted Average FE **25.32809605**

Vendor
 Sum of VMT*FE (Column B) **29708701.61**
 Total VMT **3593232.56**
 Weighted Average FE **8.267959593**

Haul
 Sum of VMT*FE (Column B) **9588004.085**
 Total VMT **1696663.658**
 Weighted Average FE **5.651092977**

Project Construction Assumptions

Source: AQ/GHG Appendix, CalEEMod Output

5076.0001 Outfront Media LED Billboards Project - Langton Site - Alameda County, Annual

Date: 7/17/2018 8:28 AM

Outfront Media LED Billboards Project - Removal Sites - Alameda County, Annual

Date: 12/17/2021 6:52 AM

Activity	Start Date	End Date	Days	Trips
Demolition	10/1/2018	10/26/2018	5	20
Grading	10/1/2018	10/1/2018	5	1
Building Construction	10/2/2018	10/26/2018	5	19
Paving	10/25/2018	10/26/2018	5	2

Trips and VMT	Phase Name	Trips per Day			Total Trips			Trips per Phase			VMT per Phase			Fuel Consumption (gallons)				
		Worker Trip Number	Vendor Trip	Hauling Trip	Worker Trip	Vendor	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker	Vendor	Hauling	Worker	Vendor Trips	Hauling		
	Demolition	8	2	20	10.8	7.3	20	LD_Mix	20	160	40	20	1,728	292	400	68.22	35.32	3.54
	Grading	8	2	8	10.8	7.3	20	LD_Mix	1	8	2	8	86	15	160	3.41	1.77	1.42
	Building Construction	8	2	0	10.8	7.3	20	LD_Mix	19	152	38	0	1,642	277	0	64.81	33.55	0.00
	Paving	8	2	0	10.8	7.3	20	LD_Mix	2	16	4	0	173	29	0	6.82	3.53	0.00
	On-site Total Construction VMT (miles)																	
	4,802																	
	On-Site Total Fuel Consumption (gallons)																	
	222																	

Construction Equipment Fuel Calculation

Source: AQ/GHG Appendix, CalEEMod Output

5076.0001 Outfront Media LED Billboards Project - Langton Site - Alameda County, Annual

Date: 7/17/2018 8:28 AM

Outfront Media LED Billboards Project - Removal Sites - Alameda County, Annual

Date: 12/17/2021 6:52 AM

Demolition	Demolition	10/1/2018	10/26/2018	5	20
Grading	Grading	10/1/2018	10/1/2018	5	1
Building Construction	Building Construction	10/2/2018	10/26/2018	5	19
Paving	Paving	10/25/2018	10/26/2018	5	2

Construction Equipment	Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load	Number of	HP Hours	Diesel Fuel Usage
						Factor	Days		
	Demolition	Concrete/Industrial Saws	1	8	81	0.73	20	9,460.80	473.04
	Demolition	Tractors/Loaders/Backhoes	1	6	97	0.37	20	4,306.80	215.34
	Demolition	Cranes	1	2	231	0.29	20	2,679.60	133.98
	Grading	Bore/Drill Rigs	1	8	221	0.5	1	884.00	44.20
	Grading	Concrete/Industrial Saws	1	2	81	0.73	1	118.26	5.91
	Grading	Tractors/Loaders/Backhoes	1	3	97	0.37	1	107.67	5.38
	Building Construction	Cranes	1	8	231	0.29	19	10,182.48	509.12
	Building Construction	Forklifts	1	7	89	0.2	19	2,367.40	118.37
	Paving	Cement and Mortar Mixers	1	2	9	0.56	2	20.16	1.01
Construction Equipment Fuel Consumption									1,506.36 gallons

Notes:

Equipment assumptions are provided in the CalEEMod output files.

Fuel usage estimate of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

South Coast Air Quality Management District. 1993. Air Quality Handbook, Table A9-3E.

Website: <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook>. Accessed May 3, 2021.

Construction Office Electricity Calculation

Energy Appendix: CalEEMod Typical Construction Trailer
 Typical Construction Trailer - Alameda County, Annual
 Date: 5/26/2021 7:26 PM

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	8985.6	2.6140	1.2000e-004	2.0000e-005	2.6243
Total		2.6140	1.2000e-004	2.0000e-005	2.6243

kWh/yr = kilowatt hours per year

Energy by Land Use - Electricity

Annual

8,986 kWh/yr

Total Over Construction

492 kWh

Total Construction Schedule

Start

10/1/2018

End

10/26/2018

Total Calendar Days

20

Years

0.05

Digital Billboard Energy Use in California

July 2014

Project Manager

Nathaniel Taylor
San Diego Gas & Electric Company (SDG&E)

Prepared by

Bijit Kundu
Daniel Young
Sarah Schneider
Energy Solutions
1610 Harrison Street
Oakland, CA 94612



5.2 PER UNIT ENERGY USE

As previously stated, the energy use information provided by manufacturers often lacked specificity around display image content and display brightness. Assuming that all data listed in Table 1 reflect 100% full output displays at maximum brightness (i.e. displaying an image that is 100% white in color), and that the maximum brightness of all displays is equivalent, our research identified a range of 16 to 51 W/sq ft for a current generation DBB. In order to calculate the annual energy use of a DBB, additional assumptions around typical duty cycles and operating modes are needed. For this report, we assume that a DBB will be operating for 24 hours a day (12 hours daylight, 12 hours nighttime), that the display will operate at full brightness (which is capped at 50% of achievable

maximum brightness, due to sign color and content) during the day, and that nighttime operating power will be significantly lower than daytime operating power as reported by manufacturers. Ultimately, ambient light levels as well as customer choice play a major role in how much sign brightness is dimmed at night. For calculations in this report, a value of 40% was used. Table 2 describes the basic assumptions required for calculating the energy use of DBBs.

TABLE 2. BASIC ASSUMPTIONS FOR CALCULATING THE ENERGY USE OF DBBS

Parameter	Assumed Value
Daylight hours	12 hours
Nighttime hours	12 hours
Daylight operating brightness	100%
Nighttime operating brightness	40%
Average color of message content ¹	50%

¹ As noted in Section 5.1, designs that contain heavy whites, or light colors, use more energy than those using darker colors or primarily black

The following equation describes how the assumptions presented in Table 2 are used to calculate annual energy use for a typical 14 feet by 48 feet (598 square feet) sign:

$$AEU = \frac{W}{ft^2} * \frac{598ft^2}{sign} * 50\% * \left(\frac{12hrs}{1day} * \frac{365days}{1yr} * 100\% + \frac{12hrs}{1day} * \frac{365days}{1yr} * 40\% \right) * \frac{1kW}{1000W}$$

Using these assumptions, DBBs may consume between 29,000 and 94,000 kWh per year. More manufacturer data on actual LED efficacy by color and brightness level is needed to be able to more effectively estimate the expected energy consumption of these products when installed in the field. These calculations are summarized in Table 3.

TABLE 3. SUMMARY OF RANGE OF REPORTED DBB ENERGY USAGE METRICS, CONVERTED TO ANNUAL ENERGY USE

Reported Energy Use by Metric	Energy Use per Square Foot (W)	Energy Use for 14'x48' Sign (W)	Annual Energy Use (kWh)
0.14 – 0.2 W/pixel	46 – 51	20,000 – 30,000	85,000 – 94,000
16 – 20 W/ft ²	16 – 20	10,000 – 12,000	29,000 – 37,000
15,000 W/sign	25	15,000	46,000

It should be noted that the energy use estimates presented in this section do not include the energy use of other DBB components beyond the display, such as the computer and the cooling system, because these components contribute a relatively small fraction of total DBB energy use.

Electricity Consumption Assumptions and Associated GHG Emissions

Assumed annual electricity consumption for the proposed project: **94,000 kWh (or 94 MWh)**.

Emission Intensity Factors: ¹		Annual Emissions at 94 MWh:		100-Year Global Warming Potentials: ²	
CO ₂	210 lbs./MWh	CO ₂	19,740.00 lbs.	CO ₂	1
CH ₄	0.029 lbs./MWh	CH ₄	2.73 lbs.	CH ₄	298
N ₂ O	0.00617 lbs./MWh	N ₂ O	0.58 lbs.	N ₂ O	25
Annual Metric Tons of CO₂e:					
		CO ₂	8.95 MT CO ₂ e		
		CH ₄	0.37 MT CO ₂ e		
		N ₂ O	0.01 MT CO ₂ e		
		Total:	9.33 MT CO₂e		

Notes:

Pounds to metric ton conversion rate of 2,204.62 lbs/metric ton used.

CO₂ Intensity Factor to match Pacific Gas and Electric's (PG&E) 2019 emissions rates, the latest that are publicly available.¹ The intensity factor utilized in the model is 206 pounds of CO₂ per megawatt-hour delivered. Other intensity factors (CH₄ & N₂O) are drawn from the California Emissions Estimator Model (CalEEMod) given values.

Sources:

¹ Pacific Gas & Electric. 2020. Corporate Responsibility and Sustainability Report 2020. Website: https://www.pgecorp.com/corp_responsibility/reports/2020/assets/PGE_CRSR_2020.pdf. Accessed June 3, 2021.

² Intergovernmental Panel on Climate Change (IPCC). 2014. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp. Website: https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf. Accessed June 3, 2021.

Typical Construction Trailer - Alameda County, Annual

**Typical Construction Trailer
Alameda County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	0.72	1000sqft	0.02	720.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5	Operational Year		2018	
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 - Upper range of typical single-wide mobile office trailer = 720 square feet.

Construction Phase - Operational energy only

Off-road Equipment - Zeroed out construction equipment

Off-road Equipment - Zeroed out construction equipment

Vehicle Trips - Run for energy estimation only

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Energy Use -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	8985.6	2.6140	1.2000e-004	2.0000e-005	2.6243
Total		2.6140	1.2000e-004	2.0000e-005	2.6243

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	8985.6	2.6140	1.2000e-004	2.0000e-005	2.6243
Total		2.6140	1.2000e-004	2.0000e-005	2.6243

THIS PAGE INTENTIONALLY LEFT BLANK