Appendix FEIR-2

HRA Appendix

100 E. Ocean

Health Risk Calculations

Diesel Particulate Matter Emission Rate Calculation / Scaler

Emission Rate (lbs/year)	92.67
Hours per Day	10
Seconds per Year	13140000
Average Annual Emission Rate (g/s)	0.003198596
Scaler Concentration (ug/m3)	8.1
Diesel Particulate Concentration (ug/m3)	0.025908628

Cancer Risk Calculations - DPM

	Age					
Parameter	**3rd Trimester**	**0 < 2**	**2<16**	**16-30**	**31-70**	**Total**
Breathing Rate	361	1090	745	335	290	
Exposure Frequency (EF)	350	350	350	350	350	
Exposure Duration (ED) (years)	0.25	2	0.75	0	0	**3**
AT	25550	25550	25550	25550	25550	
Age Sensitvity Factor (ASF)	10	10	3	1	1	
Fraction of Time at Home (FAH)	1	0.85	0.72	0.73	0.73	
70-Year (Lifetime) Concentration (ug/m3)	2.59E-02	2.59E-02	2.59E-02	2.59E-02	2.59E-02	
70-Year (Lifetime) Dose (mg/kg-d)	8.97E-06	2.71E-05	1.85E-05	8.32E-06	7.20E-06	
Carcinogen Potency (CPF) $(mg/kg\text{-}d)^{-1}$						
- Diesel Particulate Matter	1.1	1.1	1.1	1.1	1.1	
Cancer Risk	3.52E-07	7.23E-06	4.71E-07	0.00E+00	0.00E+00	8.06E-06
Risk per Million (DPM)	**8.06**					

100 E. Ocean

Health Risk Calculations

Diesel Particulate Matter Emission Rate Calculation / Scaler

Emission Rate (lbs/year)	65.6	**Emissions are based on final year of construction**
Hours per Day	10	
Seconds per Year	13140000	
Average Annual Emission Rate (g/s)	0.002264248	
Scaler Concentration (ug/m3)	29.15	**110 W. Ocean Receptor**
Diesel Particulate Concentration (ug/m3)	0.066002841	

Cancer Risk Calculations - DPM

	Age					
Parameter	**3rd Trimester**	**0 < 2**	**2<16**	**16-30**	**31-70**	**Total**
Breathing Rate	361	1090	745	335	290	
Exposure Frequency (EF)	350	350	350	350	350	
Exposure Duration (ED) (years)	0.25	0.25	0	0	0	**0.5**
AT	25550	25550	25550	25550	25550	
Age Sensitvity Factor (ASF)	10	10	3	1	1	
Fraction of Time at Home (FAH)	1	0.85	0.72	0.73	0.73	
70-Year (Lifetime) Concentration (ug/m3)	6.60E-02	6.60E-02	6.60E-02	6.60E-02	6.60E-02	
70-Year (Lifetime) Dose (mg/kg-d)	2.28E-05	6.90E-05	4.72E-05	2.12E-05	1.84E-05	
Carcinogen Potency (CPF) $(mg/kg\text{-}d)^{-1}$						
- Diesel Particulate Matter	1.1	1.1	1.1	1.1	1.1	
Cancer Risk	8.98E-07	2.30E-06	0.00E+00	0.00E+00	0.00E+00	3.20E-06
Risk per Million (DPM)	**3.20**					

CalEEMod Version: CalEEMod.2016.3.2

 Date: 11/19/2019 1:50 PM

100 E. Ocean Blvd - Construction (Onsite) - South Coast Air Basin, Annual

100 E. Ocean Blvd - Construction (Onsite)

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	151.00	Space	0.85	40,593.00	0
Hotel	429.00	Room	14.30	446,123.00	0
Quality Restaurant	23.51	1000sqft	0.54	23,512.00	0
Racquet Club	26.85	1000sqft	0.62	26,847.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	549	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2017 Southern California Edison Carbon Intensity

Land Use - see assumptions

Construction Phase - see assumptions

Off-road Equipment -

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Trips and VMT - see construction assumptions

Mat Foundation truck trips calculated using spreadsheet

Demolition - see construction assumptions

Grading - see construction assumptions

Vehicle Trips - see assumptions

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - no hearths

Energy Use - see assumptions

Construction Off-road Equipment Mitigation - Tier 4 during Grading

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
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	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	109.00
tblConstructionPhase	NumDays	300.00	3.00
tblConstructionPhase	NumDays	300.00	44.00
tblConstructionPhase	NumDays	300.00	451.00
tblConstructionPhase	NumDays	300.00	211.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	20.00	66.00
tblEnergyUse	T24E	3.92	0.43
tblGrading	AcresOfGrading	0.00	0.85
tblGrading	MaterialExported	0.00	23,500.00
tblLandUse	LandUseSquareFeet	60,400.00	40,593.00
tblLandUse	LandUseSquareFeet	622,908.00	446,123.00
tblLandUse	LandUseSquareFeet	23,510.00	23,512.00
tblLandUse	LandUseSquareFeet	26,850.00	26,847.00
tblLandUse	LotAcreage	1.36	0.85
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	549
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripNumber	237.00	1,250.00
tblTripsAndVMT	HaulingTripNumber	2,938.00	2,000.00
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tblTripsAndVMT	VendorTripLength	6.90	0.10
tblTripsAndVMT	VendorTripLength	6.90	0.10
tblTripsAndVMT	VendorTripLength	6.90	0.10
tblTripsAndVMT	VendorTripLength	6.90	0.10
tblTripsAndVMT	VendorTripLength	6.90	0.10
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tblTripsAndVMT	VendorTripNumber	88.00	15.00
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tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripLength	14.70	0.10
tblTripsAndVMT	WorkerTripLength	14.70	0.10
tblTripsAndVMT	WorkerTripLength	14.70	0.10
tblTripsAndVMT	WorkerTripLength	14.70	0.10
tblTripsAndVMT	WorkerTripLength	14.70	0.10

tblTripsAndVMT	WorkerTripLength	14.70	0.10
tblTripsAndVMT	WorkerTripLength	14.70	0.10
tblTripsAndVMT	WorkerTripLength	14.70	0.10
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	226.00	248.00
tblTripsAndVMT	WorkerTripNumber	226.00	248.00
tblTripsAndVMT	WorkerTripNumber	226.00	248.00
tblTripsAndVMT	WorkerTripNumber	226.00	248.00
tblTripsAndVMT	WorkerTripNumber	45.00	50.00
tblVehicleTrips	ST_TR	8.19	8.38
tblVehicleTrips	ST_TR	94.36	117.70
tblVehicleTrips	ST_TR	21.35	0.00
tblVehicleTrips	SU_TR	5.95	6.09
tblVehicleTrips	SU_TR	72.16	90.01
tblVehicleTrips	SU_TR	17.40	0.00
tblVehicleTrips	WD_TR	8.17	8.36
tblVehicleTrips	WD_TR	89.95	112.20
tblVehicleTrips	WD_TR	14.03	0.00

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					
2020						0.0791										
2021						0.0688										
2022						0.0344										
Maximum						**0.0791**										

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					
2020						0.0513										
2021						0.0549										
2022						0.0328										
Maximum						**0.0549**										

	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	N20	CO2e
Percent Reduction						23.75										

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
7	12-8-2019	3-7-2020	0.4749	0.2229
8	3-8-2020	6-7-2020	0.6274	0.4557
9	6-8-2020	9-7-2020	0.3841	0.3147
10	9-8-2020	12-7-2020	0.3789	0.3102
11	12-8-2020	3-7-2021	0.3542	0.2918
12	3-8-2021	6-7-2021	0.3556	0.2938
13	6-8-2021	9-7-2021	0.3559	0.2942
14	9-8-2021	12-7-2021	0.5135	0.4524
15	12-8-2021	3-7-2022	0.7021	0.6556
16	3-8-2022	6-7-2022	1.7039	1.7039
17	6-8-2022	9-7-2022	0.8583	0.8583
		Highest	1.7039	1.7039

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	1/22/2020	2/25/2020	5	25	
2	Grading	Grading	2/26/2020	3/24/2020	5	20	
3	Mat Foundation	Building Construction	3/26/2020	3/30/2020	5	3	
4	Parking and Podium	Building Construction	3/31/2020	5/31/2020	5	44	
5	Building Construction (Shell)	Building Construction	6/1/2020	2/21/2022	5	451	
6	Building Construction (Finishing)	Building Construction	10/1/2021	7/22/2022	5	211	
7	Architectural Coating	Architectural Coating	2/22/2022	7/22/2022	5	109	
8	Paving	Paving	4/22/2022	7/22/2022	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.85

Acres of Paving: 0.85

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 744,723; Non-Residential Outdoor: 248,241; Striped Parking Area:

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	Crushing/Proc. Equipment	1	8.00	85	0.78
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Bore/Drill Rigs	1	8.00	221	0.50
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41

Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Loaders	2	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Welders	1	8.00	46	0.45
Mat Foundation	Cement and Mortar Mixers	4	8.00	9	0.56
Mat Foundation	Cranes	0	7.00	231	0.29
Mat Foundation	Forklifts	0	8.00	89	0.20
Mat Foundation	Generator Sets	0	8.00	84	0.74
Mat Foundation	Pumps	4	8.00	84	0.74
Mat Foundation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Mat Foundation	Welders	0	8.00	46	0.45
Mat Foundation	Welders	1	8.00	46	0.45
Parking and Podium	Aerial Lifts	1	8.00	63	0.31
Parking and Podium	Cranes	0	7.00	231	0.29
Parking and Podium	Forklifts	0	8.00	89	0.20
Parking and Podium	Generator Sets	0	8.00	84	0.74
Parking and Podium	Pumps	2	8.00	84	0.74
Parking and Podium	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Parking and Podium	Welders	1	8.00	46	0.45
Building Construction (Shell)	Aerial Lifts	2	8.00	63	0.31
Building Construction (Shell)	Cranes	0	7.00	231	0.29
Building Construction (Shell)	Forklifts	2	8.00	89	0.20
Building Construction (Shell)	Generator Sets	0	8.00	84	0.74
Building Construction (Shell)	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction (Shell)	Welders	2	8.00	46	0.45
Building Construction (Finishing)	Aerial Lifts	1	8.00	63	0.31
Building Construction (Finishing)	Air Compressors	1	8.00	78	0.48
Building Construction (Finishing)	Cranes	0	7.00	231	0.29
Building Construction (Finishing)	Forklifts	1	8.00	89	0.20
Building Construction (Finishing)	Generator Sets	0	8.00	84	0.74
Building Construction (Finishing)	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction (Finishing)	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	1	6.00	132	0.36
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	8.00	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	4	10.00	0.00	1,250.00	0.10	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Grading	6	13.00	0.00	2,000.00	0.10	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Mat Foundation	9	248.00	0.00	0.00	0.10	0.10	0.10	LD_Mix	HHDT	HHDT
Parking and Podium	5	248.00	50.00	0.00	0.10	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Building Construction (Shell)	7	248.00	15.00	0.00	0.10	0.10	0.10	LD_Mix	HDT_Mix	HHDT

Building Construction (Finishing)	4	248.00	5.00	0.00	0.10	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	0.10	0.10	0.10	LD_Mix	HDT_Mix	HHDT
Paving	2	5.00	5.00	0.00	0.10	0.10	0.10	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0257	0.0000	0.0257	3.8900e-003	0.0000	3.8900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0283	0.2567	0.1806	3.1000e-004		0.0141	0.0141		0.0134	0.0134	0.0000	27.0489	27.0489	5.1200e-003	0.0000	27.1769
Total	**0.0283**	**0.2567**	**0.1806**	**3.1000e-004**	**0.0257**	**0.0141**	**0.0398**	**3.8900e-003**	**0.0134**	**0.0173**	**0.0000**	**27.0489**	**27.0489**	**5.1200e-003**	**0.0000**	**27.1769**

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	1.1000e-003	0.0593	8.4200e-003	6.0000e-005	7.0000e-005	3.0000e-005	1.0000e-004	2.0000e-005	3.0000e-005	5.0000e-005	0.0000	6.2468	6.2468	1.0700e-003	0.0000	6.2736
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	4.0000e-005	5.9000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0339	0.0339	0.0000	0.0000	0.0340
Total	**1.2300e-003**	**0.0594**	**9.0100e-003**	**6.0000e-005**	**8.0000e-005**	**3.0000e-005**	**1.1000e-004**	**2.0000e-005**	**3.0000e-005**	**5.0000e-005**	**0.0000**	**6.2807**	**6.2807**	**1.0700e-003**	**0.0000**	**6.3076**

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					0.0100	0.0000	0.0100	1.5200e-003	0.0000	1.5200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0139	0.0964	0.1777	3.1000e-004		5.7300e-003	5.7300e-003		5.7300e-003	5.7300e-003	0.0000	27.0489	27.0489	5.1200e-003	0.0000	27.1769
Total	**0.0139**	**0.0964**	**0.1777**	**3.1000e-004**	**0.0100**	**5.7300e-003**	**0.0157**	**1.5200e-003**	**5.7300e-003**	**7.2500e-003**	**0.0000**	**27.0489**	**27.0489**	**5.1200e-003**	**0.0000**	**27.1769**

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	1.1000e-003	0.0593	8.4200e-003	6.0000e-005	7.0000e-005	3.0000e-005	1.0000e-004	2.0000e-005	3.0000e-005	5.0000e-005	0.0000	6.2468	6.2468	1.0700e-003	0.0000	6.2736
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	4.0000e-005	5.9000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0339	0.0339	0.0000	0.0000	0.0340
Total	**1.2300e-003**	**0.0594**	**9.0100e-003**	**6.0000e-005**	**8.0000e-005**	**3.0000e-005**	**1.1000e-004**	**2.0000e-005**	**3.0000e-005**	**5.0000e-005**	**0.0000**	**6.2807**	**6.2807**	**1.0700e-003**	**0.0000**	**6.3076**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7800e-003	0.0000	1.7800e-003	2.5000e-004	0.0000	2.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.2172	0.1250	3.5000e-004		8.2000e-003	8.2000e-003		7.6200e-003	7.6200e-003	0.0000	30.7219	30.7219	9.6100e-003	0.0000	30.9621
Total	**0.0207**	**0.2172**	**0.1250**	**3.5000e-004**	**1.7800e-003**	**8.2000e-003**	**9.9800e-003**	**2.5000e-004**	**7.6200e-003**	**7.8700e-003**	**0.0000**	**30.7219**	**30.7219**	**9.6100e-003**	**0.0000**	**30.9621**

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	1.7600e-003	0.0949	0.0135	1.0000e-004	1.1000e-004	5.0000e-005	1.6000e-004	3.0000e-005	5.0000e-005	8.0000e-005	0.0000	9.9948	9.9948	1.7200e-003	0.0000	10.0378
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	4.0000e-005	6.2000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0353	0.0353	0.0000	0.0000	0.0353
Total	**1.8900e-003**	**0.0950**	**0.0141**	**1.0000e-004**	**1.2000e-004**	**5.0000e-005**	**1.7000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**	**0.0000**	**10.0301**	**10.0301**	**1.7200e-003**	**0.0000**	**10.0731**

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					6.9000e-004	0.0000	6.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.4800e-003	0.0333	0.1824	3.5000e-004		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	30.7219	30.7219	9.6100e-003	0.0000	30.9620
Total	**7.4800e-003**	**0.0333**	**0.1824**	**3.5000e-004**	**6.9000e-004**	**1.4100e-003**	**2.1000e-003**	**1.0000e-004**	**1.4100e-003**	**1.5100e-003**	**0.0000**	**30.7219**	**30.7219**	**9.6100e-003**	**0.0000**	**30.9620**

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	1.7600e-003	0.0949	0.0135	1.0000e-004	1.1000e-004	5.0000e-005	1.6000e-004	3.0000e-005	5.0000e-005	8.0000e-005	0.0000	9.9948	9.9948	1.7200e-003	0.0000	10.0378
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	4.0000e-005	6.2000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0353	0.0353	0.0000	0.0000	0.0353
Total	**1.8900e-003**	**0.0950**	**0.0141**	**1.0000e-004**	**1.2000e-004**	**5.0000e-005**	**1.7000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**	**0.0000**	**10.0301**	**10.0301**	**1.7200e-003**	**0.0000**	**10.0731**

3.4 Mat Foundation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4000e-003	0.0257	0.0271	5.0000e-005		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003	0.0000	3.9485	3.9485	2.7000e-004	0.0000	3.9554
Total	**3.4000e-003**	**0.0257**	**0.0271**	**5.0000e-005**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**	**0.0000**	**3.9485**	**3.9485**	**2.7000e-004**	**0.0000**	**3.9554**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	1.2000e-004	1.7700e-003	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1009	0.1009	1.0000e-005	0.0000	0.1011
Total	**3.7000e-004**	**1.2000e-004**	**1.7700e-003**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.1009**	**0.1009**	**1.0000e-005**	**0.0000**	**0.1011**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4000e-003	0.0257	0.0271	5.0000e-005		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003	0.0000	3.9485	3.9485	2.7000e-004	0.0000	3.9554

Total	**3.4000e-003**	**0.0257**	**0.0271**	**5.0000e-005**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**	**0.0000**	**3.9485**	**3.9485**	**2.7000e-004**	**0.0000**	**3.9554**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	1.2000e-004	1.7700e-003	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1009	0.1009	1.0000e-005	0.0000	0.1011
Total	**3.7000e-004**	**1.2000e-004**	**1.7700e-003**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.1009**	**0.1009**	**1.0000e-005**	**0.0000**	**0.1011**

3.5 Parking and Podium - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0143										
Total						**0.0143**										

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										
Vendor						4.0000e-005										
Worker						4.0000e-005										
Total						**8.0000e-005**										

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						0.0115										
Total						**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										
Vendor						4.0000e-005										
Worker						4.0000e-005										
Total						**8.0000e-005**										

3.6 Building Construction (Shell) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0407										
Total						**0.0407**										

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										
Vendor						5.0000e-005										
Worker						1.3000e-004										
Total						**1.8000e-004**										

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						0.0309										
Total						**0.0309**										

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										
Vendor						5.0000e-005										
Worker						1.3000e-004										
Total						**1.8000e-004**										

3.6 Building Construction (Shell) - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0588										
Total						**0.0588**										

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										
Vendor						5.0000e-005										
Worker						2.2000e-004										
Total						**2.7000e-004**										

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						0.0448										
Total						**0.0448**										

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										
Vendor						5.0000e-005										
Worker						2.2000e-004										
Total						**2.7000e-004**										

3.6 Building Construction (Shell) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						6.8100e-003										
Total						**6.8100e-003**										

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										
Vendor						1.0000e-005										

Worker						3.0000e-005										
Total						**4.0000e-005**										

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						5.2800e-003										
Total						**5.2800e-003**										

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										
Vendor						1.0000e-005										
Worker						3.0000e-005										
Total						**4.0000e-005**										

3.7 Building Construction (Finishing) - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						9.7300e-003										
Total						**9.7300e-003**										

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										
Vendor						0.0000										
Worker						6.0000e-005										
Total						**6.0000e-005**										

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						9.7300e-003										
Total						**9.7300e-003**										

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										
Vendor						0.0000										
Worker						6.0000e-005										
Total						**6.0000e-005**										

3.7 Building Construction (Finishing) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0184										
Total						**0.0184**										

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										
Vendor						1.0000e-005										
Worker						1.2000e-004										
Total						**1.3000e-004**										

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						0.0184										
Total						**0.0184**										

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										
Vendor						1.0000e-005										
Worker						1.2000e-004										
Total						**1.3000e-004**										

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating						0.0000										
Off-Road						4.4500e-003										
Total						**4.4500e-003**										

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										
Vendor						0.0000										
Worker						2.0000e-005										
Total						**2.0000e-005**										

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating						0.0000										
Off-Road						4.4500e-003										
Total						**4.4500e-003**										

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										
Vendor						0.0000										
Worker						2.0000e-005										
Total						**2.0000e-005**										

3.9 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						4.5600e-003										
Paving						0.0000										

Total						**4.5600e-003**										

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										
Vendor						0.0000										
Worker						0.0000										
Total						**0.0000**										

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						4.5600e-003										
Paving						0.0000										
Total						**4.5600e-003**										

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										
Vendor						0.0000										
Worker						0.0000										
Total						**0.0000**										

```
*** AERMOD - VERSION  18081 ***   *** C:\AERMOD\100EOcean\100EOcean.isc                    ***       03/25/20
*** AERMET - VERSION  16216 ***   ***                                                ***       10:30:26
                                                                                    PAGE   1
*** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                              ***     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   178 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =   9818605.0 ;  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. Half-life of 4 hrs for URBAN SO2.
       6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
       ADJ_U*   - Use ADJ_U* option for SBL in AERMET
       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:  SO2

**Note that special processing requirements apply for the 1-hour SO2 NAAQS - check available guidance.
  Model will process user-specified ranks of daily maximum 1-hour values averaged across the number of years modeled.

**Model Calculates  1 Short Term Average(s) of:   1-HR
    and Calculates PERIOD Averages

**This Run Includes:    178 Source(s);       1 Source Group(s); and     224 Receptor(s)

            with:      0 POINT(s), including
                     0 POINTCAP(s) and      0 POINTHOR(s)
             and:    178 VOLUME source(s)
             and:      0 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: 16216

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
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
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 10.00 ; 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 = 3.6 MB of RAM.

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

**Detailed Error/Message File: 100EOcean.err
**File for Summary of Results: 100EOcean.sum
*** AERMOD - VERSION 18081 *** *** C:\AERMOD\100EOcean\100EOcean.isc *** 03/25/20
*** AERMET - VERSION 16216 *** *** *** 10:30:26
PAGE 2
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** 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 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)

1.54, 3.09, 5.14, 8.23, 10.80,
*** AERMOD - VERSION 18081 *** *** C:\AERMOD\100EOcean\100EOcean.isc *** 03/25/20
*** AERMET - VERSION 16216 *** *** *** 10:30:26
PAGE 3
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Met\KLGB_v9.SFC Met Version: 16216
Profile file: Met\KLGB_v9.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23129 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2012 Year: 2012

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
12	01	01	1	01	-5.3	0.094	-9.000	-9.000	-999.	70.	14.3	0.10	2.68	1.00	1.13	322.	7.9	282.0	2.0
12	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.10	2.68	1.00	0.00	0.	7.9	281.4	2.0
12	01	01	1	03	-2.5	0.068	-9.000	-9.000	-999.	43.	11.4	0.10	2.68	1.00	0.74	79.	7.9	280.9	2.0
12	01	01	1	04	-3.2	0.075	-9.000	-9.000	-999.	49.	11.7	0.10	2.68	1.00	0.86	137.	7.9	280.9	2.0
12	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.10	2.68	1.00	0.00	0.	7.9	280.4	2.0
12	01	01	1	06	-5.2	0.093	-9.000	-9.000	-999.	68.	14.0	0.10	2.68	1.00	1.11	92.	7.9	279.9	2.0
12	01	01	1	07	-2.3	0.066	-9.000	-9.000	-999.	41.	11.5	0.10	2.68	1.00	0.69	67.	7.9	278.8	2.0
12	01	01	1	08	-1.7	0.060	-9.000	-9.000	-999.	36.	11.4	0.10	2.68	0.54	0.65	91.	7.9	279.9	2.0
12	01	01	1	09	36.2	-9.000	-9.000	-9.000	37.	-999.	-99999.0	0.10	2.68	0.31	0.00	0.	7.9	283.8	2.0
12	01	01	1	10	108.4	0.139	0.707	0.009	119.	124.	-2.3	0.10	2.68	0.24	0.92	319.	7.9	287.5	2.0
12	01	01	1	11	160.5	0.114	1.137	0.005	334.	93.	-1.0	0.10	2.68	0.21	0.62	23.	7.9	292.5	2.0
12	01	01	1	12	186.7	0.125	1.473	0.005	623.	105.	-1.0	0.10	2.68	0.20	0.69	18.	7.9	295.4	2.0
12	01	01	1	13	186.8	0.130	1.761	0.005	1065.	112.	-1.1	0.10	2.68	0.20	0.74	250.	7.9	297.5	2.0
12	01	01	1	14	161.7	0.150	1.834	0.005	1387.	139.	-1.9	0.10	2.68	0.21	0.96	347.	7.9	300.4	2.0
12	01	01	1	15	105.5	0.243	1.633	0.005	1499.	288.	-12.4	0.10	2.68	0.24	2.11	194.	7.9	295.9	2.0
12	01	01	1	16	32.4	0.211	1.109	0.005	1530.	233.	-26.3	0.10	2.68	0.33	1.98	186.	7.9	295.4	2.0
12	01	01	1	17	-20.5	0.250	-9.000	-9.000	-999.	300.	69.2	0.10	2.68	0.60	2.81	293.	7.9	291.4	2.0
12	01	01	1	18	-25.4	0.257	-9.000	-9.000	-999.	313.	72.8	0.10	2.68	1.00	2.90	301.	7.9	288.1	2.0
12	01	01	1	19	-21.0	0.211	-9.000	-9.000	-999.	233.	49.0	0.10	2.68	1.00	2.40	313.	7.9	286.4	2.0
12	01	01	1	20	-25.7	0.258	-9.000	-9.000	-999.	315.	73.3	0.10	2.68	1.00	2.91	302.	7.9	286.4	2.0
12	01	01	1	21	-22.5	0.225	-9.000	-9.000	-999.	256.	55.7	0.10	2.68	1.00	2.55	306.	7.9	285.4	2.0
12	01	01	1	22	-9.3	0.126	-9.000	-9.000	-999.	111.	19.5	0.10	2.68	1.00	1.48	284.	7.9	285.9	2.0
12	01	01	1	23	-21.4	0.214	-9.000	-9.000	-999.	237.	50.3	0.10	2.68	1.00	2.43	282.	7.9	285.4	2.0
12	01	01	1	24	-30.1	0.300	-9.000	-9.000	-999.	394.	98.9	0.10	2.68	1.00	3.36	300.	7.9	284.2	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	7.9	1	322.	1.13	282.1	99.0	-99.00	-99.00

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

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF SO2 IN MICROGRAMS/M**3 **

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

ALL 1ST HIGHEST VALUE IS 29.14653 AT (389570.00, 3736890.00, 3.68, 9.48, 0.00) DC
2ND HIGHEST VALUE IS 28.93287 AT (389570.00, 3736900.00, 4.47, 9.48, 0.00) DC
3RD HIGHEST VALUE IS 28.54801 AT (389570.00, 3736880.00, 2.90, 9.48, 0.00) DC
4TH HIGHEST VALUE IS 27.93509 AT (389570.00, 3736910.00, 5.51, 9.48, 0.00) DC
5TH HIGHEST VALUE IS 27.15782 AT (389570.00, 3736870.00, 2.37, 9.48, 0.00) DC
6TH HIGHEST VALUE IS 25.75743 AT (389570.00, 3736920.00, 7.33, 9.48, 0.00) DC
7TH HIGHEST VALUE IS 25.47222 AT (389570.00, 3736860.00, 2.26, 9.48, 0.00) DC
8TH HIGHEST VALUE IS 23.15132 AT (389570.00, 3736850.00, 2.21, 2.21, 0.00) DC
9TH HIGHEST VALUE IS 20.81538 AT (389560.00, 3736890.00, 3.26, 9.48, 0.00) DC
10TH HIGHEST VALUE IS 20.70097 AT (389560.00, 3736900.00, 3.87, 9.48, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
*** AERMOD - VERSION 18081 *** *** C:\AERMOD\100EOcean\100EOcean.isc *** 03/25/20
*** AERMET - VERSION 16216 *** *** *** 10:30:26
PAGE 5
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF SO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	499.21834 AT (389570.00, 3736890.00, 3.68, 9.48, 0.00) DC	
	2ND HIGHEST VALUE IS	497.90577 AT (389570.00, 3736880.00, 2.90, 9.48, 0.00) DC	
	3RD HIGHEST VALUE IS	491.90847 AT (389570.00, 3736900.00, 4.47, 9.48, 0.00) DC	
	4TH HIGHEST VALUE IS	487.13657 AT (389570.00, 3736870.00, 2.37, 9.48, 0.00) DC	
	5TH HIGHEST VALUE IS	478.74296 AT (389570.00, 3736910.00, 5.51, 9.48, 0.00) DC	
	6TH HIGHEST VALUE IS	473.61047 AT (389570.00, 3736860.00, 2.26, 9.48, 0.00) DC	
	7TH HIGHEST VALUE IS	453.46163 AT (389570.00, 3736850.00, 2.21, 2.21, 0.00) DC	
	8TH HIGHEST VALUE IS	452.63361 AT (389570.00, 3736920.00, 7.33, 9.48, 0.00) DC	
	9TH HIGHEST VALUE IS	422.71290 AT (389560.00, 3736880.00, 2.71, 9.48, 0.00) DC	
	10TH HIGHEST VALUE IS	422.02972 AT (389560.00, 3736890.00, 3.26, 9.48, 0.00) DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
*** AERMOD - VERSION 18081 *** *** C:\AERMOD\100EOcean\100EOcean.isc *** 03/25/20
*** AERMET - VERSION 16216 *** *** *** 10:30:26
PAGE 6
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

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

A Total of 0 Fatal Error Message(s)
A Total of 3 Warning Message(s)
A Total of 1017 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 747 Calm Hours Identified

A Total of 270 Missing Hours Identified (0.62 Percent)

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

******** WARNING MESSAGES ********
CO W361 26 COCARD: Multiyear PERIOD/ANNUAL values for NO2/SO2 require MULTYEAR Opt
ME W186 1164 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50
ME W187 1164 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET