CALICO SOLAR

Supplemental Analysis for Application for Certification (08-AFC-13)

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Submitted to:
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Tessera Solar
power from stirling energy systems

January 27, 2010

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California Energy Commission
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Bureau of Land Management
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RE: Calico Solar Project
Applicant's Submittal of Supplemental Information

Dear Mr. Meyer and Mr. Stobaugh,

Tessera Solar hereby submits Supplemental Information for Calico Solar (formerly Solar One). The information is supplemental to the Application For Certification (AFC) filed in December 2008, and it provides proposed changes to the Project Description and associated environmental impacts of use of the Cadiz Well as the Project water supply. I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge.

Sincerely,

Felicia Bellows
Vice President of Development

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AFC	Application for Certification
afy	acre feet per year
BLM	Bureau of Land Management
BNSF	Burlington Northern Santa Fe
CCAR	California Climate Action Registry
CEC	California Energy Commission
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DWR	Department of Water Resources
EPA	Environmental Protection Agency
GHG	greenhouse gas
I-40	Interstate 40
LORS	Laws, Ordinances, Regulations, and Standards
LOS	Level of Service
MDAQMD	Mojave Desert Air Quality Management District
MWA	Mojave Water Agency
N_2O	nitrous oxide
NO_x	nitrogen oxides
O&M	Operation and Maintenance
PCE	Passenger Car Equivalent
PM	Particulate Matter
ROC	Reactive Organic Compounds
ROW	Right of Way
SIP	State Implementation Plan
SO_x	sulfur oxides
TDS	Total Dissolved Solids
tpy	tons per year
VOC	Volatile Organic Compounds
ZOI	Zone of Influence

SECTION 1 SUPPLEMENTAL PROJECT DESCRIPTION

1.1 INTRODUCTION

Calico Solar, LLC (Applicant), formerly SES Solar Six, LLC and SES Solar Three, LLC filed an Application for Certification (AFC) with the California Energy Commission (CEC) and Bureau of Land Management (BLM) for its proposed Calico Solar (formerly Solar One) Project (Project) on December 1, 2008. The Application was deemed adequate on May 6, 2009. Since then, the Applicant has continued to work with agencies and the public to assess potential Project improvements.

The preferred primary Project water supply is now the Cadiz Burlington Northern Santa Fe (BNSF) well, located approximately 64 miles from the Calico Solar Site. Calico Solar is currently negotiating with BNSF for use of the Cadiz BNSF Well, BNSF Right of Way (ROW), and rail for transport of the water. Details of these agreements will be forwarded to the CEC and BLM once they are finalized.

This Supplement to the Project AFC includes the associated proposed changes to the Project and its ancillary systems, which were originally described in Section 3.0, Project Description and Location, of the Project AFC. This Supplement to the Project AFC also provides an environmental assessment of the environmental impacts resulting from the proposed Project changes.

1.2 CADIZ WELL WATER SUPPLY

1.2.1 Background

According to the original filing of the AFC, potential water sources evaluated for the Project included reclaimed water, surface water, groundwater, and obtaining water from a service provider. Operational water use is only required for SunCatcher equipment washing, potable water, dust control water, and fire protection water. Construction water uses include dust control, road development and others described in Section 3.0 of the AFC. In the AFC, the preferred water source was to use onsite ground water through production well or wells. The AFC stated that additional water wells would be drilled to augment the primary water well as needed to meet peak construction water demands.

The water use estimates have been refined since the AFC filing and as the Project has advanced in design. Water demand estimates are approximately 20 acre-feet per year (afy) for operations and 136 afy will be required during the construction phase. For the purposes of this analysis, the water demand during the operations phase was assumed to be approximately 40 afy in order to calculate worst-case scenario impacts and provide a buffer for analysis.

The analysis within this supplement provides additional information on the reliability of the Calico Solar water supply from the Cadiz BNSF well. An in-depth evaluation of the various Calico Solar water supply options in terms of reliability, cost, and environmental impact was performed. After extensive research, the Applicant provides this additional information to present findings and to report to the CEC and BLM the Applicant's research for potential sources of water for the Project.

1.2.2 Overview of Research Performed

For this evaluation, the Applicant considered four supply options:

1. Mojave Water Agency (ground water)
2. BNSF (reclaimed water)
3. Lavic Valley Ground Water Wells
4. Cadiz Valley Ground Water from the BNSF Cadiz Well

These options are described below and summarized in Table 1-1.

Mojave Water Agency – After filing the AFC, the Mojave Water Agency (MWA) district expressed possible interest in providing water for the project. The source of the water would be from a groundwater well through purchase of water rights from water purveyors and delivered to the project site via truck. The Project, however, is outside of the District's boundaries and therefore provides service complications for the MWA.

This option was explored for approximately nine months (February 2009 to October 2009), with the Applicant attending several MWA board meetings to present the proposed export of water from the District to the Project site. This option raised several concerns with the watermaster and sub-advisory committees. The watermaster suggested that the Applicant pursue alternative sources for water. As such, export via MWA is no longer a viable option.

Barstow Wastewater Treatment Facility – The Barstow Wastewater Treatment Plant is located at 2200 East Riverside Drive in Barstow California. It is operated by the Public Works Department of the City of Barstow and is approximately 15 miles west of the Project site. During the time that the Applicant was exploring alternatives with MWA, MWA staff suggested that the Applicant enter into discussion with BNSF.

BNSF holds export rights from MWA and could supply recycled (grey) water utilizing BNSF facilities at the City of Barstow Waste Water Treatment Facility. All of the water used by the Project would have been fully offset. The water would be placed on BNSF rail cars and transported to the Project site. Use and transport of the recycled water would require approval from MWA for a change in purpose (use), and agreements with the appropriate water districts.

The recycled water (grey water) would be transported outside of the District's boundaries. The Applicant pursued discussions with BNSF and MWA. After several meetings with both entities, as mentioned above, and another MWA board meeting, the export requirement from the District resulted in the same service complications as experienced with the MWA option. As a result of the watermaster's decision, this option is no longer viable.

Lavic Groundwater Basin – As discussed in Section 5.5 of the AFC, the Project site lies within the Lavic Groundwater Basin. The basin is approximately 159 square miles and is bounded by non-water-bearing rocks of the Cady Mountains on the southwest. This water would require treatment of total dissolved solids and is considered unsuitable for domestic or irrigation use without treatment.

The AFC showed several potential locations for the development of wells. Because of permitting challenges, the test water wells were located on private land within the Project area. The reliability of test wells is currently being evaluated.

The ground water source could serve as an emergency back-up supply if required in the future, or to supply water to the Project, pending the results of test well development.

Cadiz Valley Groundwater Basin – Burlington Northern Santa Fe (BNSF) owns and operates several water wells within the Cadiz Valley Groundwater Basin approximately 64 miles southeast of the Project site. The water would be transported via rail or truck to the Project site. Both transport options are evaluated herein.

The basin underlies Cadiz Valley which drains internally toward Cadiz Lake. Average precipitation ranges from 4 to 6 inches. An existing well has been in production for many years, currently using 1 afy. Wells in the Cadiz Valley Groundwater Basin yield as much as 167 gallons per minute (gpm) (DWR 1975). Natural recharge is dominantly from percolation of surface runoff through stream beds and washes. Studies done on the groundwater in the Cadiz Valley show a recharge in the area at 2,550 to 11,200 afy. These studies have been confirmed by an aquifer testing report provided as Appendix A.

Table 1.2-1
Project Water Supply Options

Option	Description	Type and Amount Available	Reliability of Supply	Environ. Concerns	Comment
Mojave Water Agency		Ground water		Would be fully mitigated	No longer available because project is located outside district boundaries.
City of Barstow Treatment Facility	Use of existing BNSF facilities. Requires trucking or rail to the site	Reclaimed water	Reliable supply but would require transport through facilities owned by other water districts		Option eliminated because of challenges associated with transport through facilities owned by multiple water districts; also located outside district boundaries.
Lavic Ground-Water Basin	Four test wells located on project site	Gallon per minute flow is unknown.	Unknown supply amounts to meet construction needs; sufficient flow to serve as back-up during operation; further assessment required	Potential impacts from evaporation pond; mitigate with pond design and screening	Is currently being investigated as a possible supply during operation, pending the results of test wells.
Cadiz Valley Ground Water	Requires rail or trucking to site	Ground water	Reliable	Consistent with CEC water policy; Air emissions associated with trucking water to the site	Preferred primary water supply source.

1.2.3 BNSF Cadiz Well Overview

After evaluating the currently available water supply options, Calico Solar has concluded that the primary source of water for the Project will be furnished by the BNSF well within the Cadiz Valley Groundwater Basin. The existing BNSF well is located within 50 feet of the south side of a railroad line. It is located within a pump house and groundwater is extracted using a turbine-type pump. Photographs of the pump and the BNSF well site are included in Appendix B. The BNSF well is located approximately 64 miles from the Calico Solar site (Figure 1-1).

Historical information on water quality of the BNSF wells indicate that groundwater is of good quality and Total Dissolved Solids (TDS) concentrations have ranged from approximately 250 to 350 mg/l (DWR, 1967). Aquifer testing of the BNSF well has demonstrated that it can support water demands for the Calico site during construction and the lifespan of its operations. Pumping of the well at the prescribed rates will have no significant impact to water levels in the area, as the Zone of Influence (ZOI) is considerably less than the distance to the closest well, which is approximately one mile away. Appendices A and B provide detailed well characteristics and the results of groundwater pumping tests used to determine potential well production.

Transport of Water to the Calico Solar Site

This supplemental filing analyzes two alternative methods of transporting water from the BNSF Cadiz well to the Calico Solar site. The water will either be transported via rail from the BNSF well to the Project site or it will be transported via truck.

Water demand estimates are approximately 20 afy for operations and 136 afy will be required during the construction phase. The water use estimates have been refined since the AFC filing and as the Project has advanced in design. For the purposes of this analysis, the water demand during the operations phase was assumed to be 40 afy in order to calculate worst-case scenario impacts and provide a buffer for analysis.

Based on these estimated demands, the Project would require one daily train delivery during construction and rail delivery every other day during the operations phase. A pipeline would be built to transport water from the BNSF rail spur onsite to the Project's Main Services Complex. Prior to completion of the pipeline, the water would be transported by trucks to the Main Services Complex from the rail spur as shown in Figure 1-1.

Under the truck transport alternative, approximately 12 and 39 truckloads per day would be required during operations and construction phases, respectively. Trucks would access the site from Interstate 40 (I-40) using an existing railroad crossing and BNSF ROW as shown in Figure 1-1. When using the existing railroad crossing, flagged guards will be employed by the Applicant, prior to construction of the Project bridge.

1.2.4 References

California Department of Water Resources (DWR), 1967, Bulletin No. 91-14, "Water Wells and Springs in Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys and Vicinity, San Bernardino and Riverside Counties, California," August.

SECTION 2 ENVIRONMENTAL INFORMATION

2.1 INTRODUCTION

This section presents a discussion of the affected environment and potential environmental consequences that are associated with the changes identified in this Supplement to the Calico Solar Application for Certification (AFC), along with measures to mitigate or avoid adverse impacts as appropriate. Supporting information to determine compliance with applicable laws, ordinances, regulations, and standards (LORS) is included within the discussion in each applicable section.

The analyses presented in this section are based on the following:

- Details of the proposed Project changes as presented in Section 1.0, Supplemental Project Description, of this document;
- Details of the proposed Project as presented in Section 3.0, Project Description and Location, of the Project AFC;
- Consideration of Bureau of Land Management (BLM) and California Energy Commission (CEC) including regulations applicable to the expedited processing of projects; and
- Consideration of CEC, BLM Staff and public input.

The environmental assessments presented in this section are meant to comply with BLM and CEC requirements, including those of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). In general, each section follows the same format of presenting the affected environment and existing site conditions, followed by the environmental consequences of the proposed Project, cumulative impacts, measures proposed to mitigate significant adverse impacts, and LORS compliance.

The Cadiz well is an existing well located approximately 64 miles from the Calico Solar site. It is located within 50 feet of the south side of the BNSF railroad line, within BNSF ROW. Water from the Cadiz well will be transported by rail or truck to the Calico Solar Site exclusively on existing roads and railways. The proposed Project changes will not cause any additional ground disturbance, and the resource areas affected by the proposed Project changes will be Air Quality, Water Resources, Traffic and Transportation, and Noise.

2.2 AIR QUALITY

2.2.1 Affected Environment

This supplement addresses the use of the Cadiz well as the primary water supply source for the Project. A revised affected environment analysis for Air Quality was presented in the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2, docketed August 31, 2009, which addressed onsite production wells as the primary water source for the Project and included emissions from trucking water from Newberry Springs as an additional potential Project water supply, as a precaution, along with other modification from the AFC.

The Cadiz well is an existing well located approximately 64 miles from the Calico Solar site. It is located within 50 feet of the south side of the BNSF railroad line, within BNSF ROW. Water from the Cadiz well will be transported by rail or truck to the Calico Solar site. Both options for transport are considered in this air quality analysis to ensure that impacts from either delivery option are examined.

2.2.2 Environmental Consequences

2.2.2.1 Project Construction Emissions

The construction emission sources presented in the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2 remain unchanged except that water delivery to the Project site would travel 64 miles either by train or truck. All emissions are estimated using the same techniques presented in the subsequent filing referenced above. Emissions from the train delivery of water were estimated using Environmental Protection Agency (EPA) Emission Factors for Locomotives and Southeastern States Air Resource Managers Development of Railroad Emissions Methodology.

For the purposes of calculating Project construction emissions under the rail transport option, it was assumed that one locomotive would deliver water 6 days per week. In the worst case scenario for the rail option, 39 trucks per day would be required to transport the water from the onsite rail spur to the Main Services Complex until construction of the pipeline is complete. Under the truck transport option, 39 truck trips would be made per day, six days per week, from the Cadiz Well to the Calico Solar site.

Peak daily and annual emission from all construction activities with water delivery via train are presented in Tables 2.2-1a and 2.2-2a, and emission estimates with water delivery via truck are presented in Tables 2.2-1b and 2.2-2b. Table 2.2-10 provides a summary of rail and truck transport emissions of non-attainment pollutants. The detailed emission calculations, emission factors and associated assumptions used in estimating the construction emissions are provided in Appendix C.

Table 2.2-1a
Water Delivery via Train Estimated Daily Maximum Construction Emissions of Criteria Pollutants (lbs/day) (Month 6)

Activity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x
Onsite Construction Emissions						
Onsite Combustion Emissions						
Construction Equipment	17.34	15.98	267.06	49.34	294.17	0.29
Worker Vehicles	0.68	0.52	47.85	3.29	4.46	0.07
Security Vehicles	0.01	0.01	1.33	0.03	0.02	0.01
Train for Water Delivery	0.13	0.12	0.95	0.55	4.04	0.02
Water Delivery Trucks	0.30	0.27	2.69	0.23	4.80	0.01
Bridge Construction Delivery Trucks	0.03	0.03	0.22	0.10	0.49	0.00
Other Delivery Trucks	1.80	1.61	14.60	5.36	29.38	0.04
Subtotal of Onsite Combustion Emissions	20.30	18.53	334.70	58.92	337.35	0.43
Onsite Fugitive Emissions						
Construction Equipment	33.54	7.54				
Storage piles	17.95	3.98				
Worker Vehicles	84.50	11.45				
Security Vehicles	6.76	0.93				
Water Delivery Trucks	66.32	9.88				
Bridge Construction Delivery Trucks	5.18	0.74				
Other Delivery Trucks	325.68	44.77				
Subtotal of Onsite Fugitive Emissions	539.93	79.30				
Subtotal of Onsite Emissions	560.23	97.84	334.70	58.92	337.35	0.43
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	5.62	4.27	393.42	27.09	36.70	0.55
Train for Water Delivery	0.42	0.39	2.54	1.07	13.85	0.02
Water Delivery Trucks	0.00	0.00	0.00	0.00	0.00	0.00
Bridge Construction Delivery Trucks	1.38	1.24	10.18	4.81	22.71	0.02
Other Delivery Trucks	24.22	21.74	178.62	84.41	398.35	0.43
Subtotal of Offsite Combustion Emissions	31.64	27.64	584.76	117.39	471.61	1.02
Offsite Paved Road Fugitive Dust Emissions						
Worker Vehicles	15.23	2.28				
Water Delivery Trucks	0.00	0.00				
Bridge Construction Delivery Trucks	4.86	0.62				
Other Delivery Trucks	85.17	10.93				
Subtotal of Offsite Fugitive Emissions	105.25	13.83				
Subtotal of Offsite Emissions	136.89	41.47	584.76	117.39	471.61	1.02
Total Maximum Daily Emissions	697.12	139.30	919.46	176.31	808.96	1.45

Table 2.2-1b
Water Delivery via Truck Estimated Daily Maximum Construction Emissions of Criteria Pollutants (lbs/day) (Month 6)

Activity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x
Onsite Construction Emissions						
Onsite Combustion Emissions						
Construction Equipment	17.34	15.98	267.06	49.34	294.17	0.29
Worker Vehicles	0.68	0.52	47.85	3.29	4.46	0.07
Security Vehicles	0.01	0.01	1.33	0.03	0.02	0.01
Water Delivery Trucks	0.35	0.31	3.14	0.27	5.60	0.01
Bridge Construction Delivery Trucks	0.03	0.03	0.22	0.10	0.49	0.00
Other Delivery Trucks	1.80	1.61	14.60	5.36	29.38	0.04
Subtotal of Onsite Combustion Emissions	20.21	18.46	334.20	58.41	334.11	0.41
Onsite Fugitive Emissions						
Construction Equipment	33.54	7.54				
Storage piles	17.95	3.98				
Worker Vehicles	84.50	11.45				
Security Vehicles	6.76	0.93				
Water Delivery Trucks	77.38	11.53				
Bridge Construction Delivery Trucks	5.18	0.74				
Other Delivery Trucks	325.68	44.77				
Subtotal of Onsite Fugitive Emissions	550.99	80.95				
Subtotal of Onsite Emissions	571.20	99.41	334.20	58.41	334.11	0.41
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	5.62	4.27	393.42	27.09	36.70	0.55
Water Delivery Trucks	6.38	5.71	57.41	4.98	102.34	0.15
Bridge Construction Delivery Trucks	1.38	1.24	10.18	4.81	22.71	0.02
Other Delivery Trucks	24.22	21.74	178.62	84.41	398.35	0.43
Subtotal of Offsite Combustion Emissions	37.60	32.96	639.63	121.30	560.09	1.15
Offsite Paved Road Fugitive Dust Emissions						
Worker Vehicles	15.23	2.28				
Water Delivery Trucks	28.04	2.78				
Bridge Construction Delivery Trucks	4.86	0.62				
Other Delivery Trucks	85.17	10.93				
Subtotal of Offsite Fugitive Emissions	133.29	16.62				
Subtotal of Offsite Emissions	170.89	49.57	639.63	121.30	560.09	1.15
Total Maximum Daily Emissions	742.09	148.98	973.83	179.71	894.20	1.56

Table 2.2-2a
Water Delivery via Train Estimated Maximum Annual Construction Emissions of Criteria Pollutants (tons/year) (Month 2 to 13)

Activity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x
Onsite Construction Emissions						
Onsite Combustion Emissions						
Construction Equipment	1.989	1.832	28.854	5.669	31.700	0.032
Worker Vehicles	0.071	0.054	4.966	0.342	0.463	0.007
Security Vehicles	0.001	0.001	0.208	0.005	0.003	0.001
Train for Water Delivery	0.020	0.019	0.149	0.087	0.631	0.003
Water Delivery Trucks	0.047	0.042	0.420	0.036	0.748	0.001
Bridge Construction Delivery Trucks	0.003	0.002	0.019	0.009	0.041	0.000
Other Delivery Trucks	0.254	0.228	2.078	0.741	4.139	0.005
Subtotal of Onsite Combustion Emissions	2.38	2.18	36.69	6.89	37.73	0.05
Onsite Fugitive Dust Emissions						
Construction Equipment	3.57	0.75				
Storage piles	1.64	0.36				
Worker Vehicles	8.77	1.19				
Security Vehicles	1.05	0.15				
Water Delivery Trucks	10.35	1.54				
Bridge Construction Delivery Trucks	0.43	0.06				
Other Delivery Trucks	45.91	6.34				
Subtotal of Onsite Fugitive Emissions	71.72	10.39				
Subtotal of Onsite Emissions	74.10	12.57	36.69	6.89	37.73	0.05
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.58	0.44	40.83	2.81	3.81	0.06
Train for Water Delivery	0.07	0.06	0.40	0.17	2.16	0.00
Water Delivery Trucks	0.00	0.00	0.00	0.00	0.00	0.00
Bridge Construction Delivery Trucks	0.11	0.10	0.85	0.40	1.89	0.00
Other Delivery Trucks	3.04	2.73	22.41	10.59	49.97	0.05
Subtotal of Offsite Combustion Emissions	3.80	3.33	64.48	13.97	57.83	0.12
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	1.58	0.24				
Water Delivery Trucks	0.00	0.00				
Bridge Construction Delivery Trucks	0.40	0.05				
Other Delivery Trucks	10.68	1.37				
Subtotal of Offsite Fugitive Emissions	12.67	1.66				
Subtotal of Offsite Emissions	16.47	4.99	64.48	13.97	57.83	0.12
Total Maximum Annual Emissions	90.57	17.56	101.17	20.86	95.55	0.16

Table 2.2-2b
Water Delivery via Truck Estimated Maximum Annual Construction Emissions of Criteria Pollutants (tons/year) (Month 2 to 13)

Activity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x
Onsite Construction Emissions						
Onsite Combustion Emissions						
Construction Equipment	1.989	1.832	28.854	5.669	31.700	0.032
Worker Vehicles	0.071	0.054	4.966	0.342	0.463	0.007
Security Vehicles	0.001	0.001	0.208	0.005	0.003	0.001
Water Delivery Trucks	0.054	0.049	0.490	0.042	0.873	0.001
Bridge Construction Delivery Trucks	0.003	0.002	0.019	0.009	0.041	0.000
Other Delivery Trucks	0.254	0.228	2.078	0.741	4.139	0.005
Subtotal of Onsite Combustion Emissions	2.37	2.17	36.61	6.81	37.22	0.05
Onsite Fugitive Dust Emissions						
Construction Equipment	3.57	0.75				
Storage piles	1.64	0.36				
Worker Vehicles	8.77	1.19				
Security Vehicles	1.05	0.15				
Water Delivery Trucks	12.07	1.80				
Bridge Construction Delivery Trucks	0.43	0.06				
Other Delivery Trucks	45.91	6.34				
Subtotal of Onsite Fugitive Emissions	73.44	10.65				
Subtotal of Onsite Emissions	75.81	12.82	36.61	6.81	37.22	0.05
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.58	0.44	40.83	2.81	3.81	0.06
Water Delivery Trucks	0.99	0.89	8.96	0.78	15.96	0.02
Bridge Construction Delivery Trucks	0.11	0.10	0.85	0.40	1.89	0.00
Other Delivery Trucks	3.04	2.73	22.41	10.59	49.97	0.05
Subtotal of Offsite Combustion Emissions	4.73	4.16	73.04	14.58	71.63	0.14
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	1.58	0.24				
Water Delivery Trucks	4.37	0.43				
Bridge Construction Delivery Trucks	0.40	0.05				
Other Delivery Trucks	10.68	1.37				
Subtotal of Offsite Fugitive Emissions	17.04	2.09				
Subtotal of Offsite Emissions	21.77	6.26	73.04	14.58	71.63	0.14
Total Maximum Annual Emissions	97.59	19.07	109.65	21.39	108.85	0.18

2.2.2.2 Operational Emissions

The operational emission sources presented in the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2 remain unchanged except that water delivery to the Project site would travel 64 miles either by train or truck. All emissions are estimated using the same techniques presented in the AFC and

the subsequent filing referenced above. Emissions from the train delivery of water were estimated in the same manner as discussed in the construction emissions.

For the purposes of calculating Project operational emissions under the rail transport option, it was assumed that one locomotive would deliver water every other day (3.5 days per week). In the worst case scenario for the rail option, 20 trucks would be required to transport the water from the onsite rail spur to the Main Services Complex every other day (3.5 days per week) until construction of the pipeline is complete. Under the truck transport option, 10 truck trips would be made per day, seven days per week from the Cadiz Well to the Calico Solar Site.

Total Project operational daily and annual emission estimates with water delivery via trucks are presented in Tables 2.2-3a and 2.2-4a, and emission estimates with water delivery via train are presented in Tables 2.2-3b and 2.2-4b. Table 2.2-10 provides a summary of rail and truck transport emissions of non-attainment pollutants. The detailed emission calculations, emission factors and associated assumptions used in estimating the operational emissions are provided in Appendix C.

Table 2.2-3a
Water Delivery via Train Estimated Daily Maximum Operational Emissions of Criteria Pollutants (lbs/day)

Activity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x
Onsite Operational Emissions						
Onsite Combustion Emissions						
Diesel Generator	0.01	0.01	0.10	0.04	1.14	0.03
Maintenance & Security Vehicles and Equipment	0.25	0.23	146.54	18.99	12.43	0.06
Worker Vehicles	0.14	0.10	5.85	0.36	0.53	0.01
Train for Water Delivery	0.13	0.12	0.95	0.55	4.04	0.02
Visitor Cars and Delivery Trucks	0.20	0.17	2.27	0.37	2.79	0.01
Subtotal of Onsite Combustion Emissions	0.73	0.64	155.70	20.32	20.93	0.13
Onsite Fugitive Emissions						
Maintenance & Security Vehicles and Equipment	156.69	23.21				
Worker Vehicles	17.72	2.41				
Visitor Cars and Delivery Trucks	51.19	7.68				
Gasoline Tank				5.56		
Subtotal of Onsite Fugitive Emissions	225.60	33.30	0.00	5.56	0.00	0.00
Subtotal of Onsite Emissions	226.33	33.95	155.70	25.87	20.93	0.13
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.65	0.36	31.83	0.85	3.67	0.06
Train for Water Delivery	0.05	0.05	0.52	0.41	1.37	0.02
Visitor Cars and Delivery Trucks	0.54	0.42	5.53	0.65	12.25	0.03
Subtotal of Offsite Combustion Emissions	1.24	0.83	37.88	1.91	17.29	0.11
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	21.58	0.60				
Visitor Cars and Delivery Trucks	49.49	7.02				
Subtotal of Offsite Fugitive Emissions	71.07	7.62				
Subtotal of Offsite Emissions	72.30	8.44	37.88	1.91	17.29	0.11
Total Maximum Emissions	298.63	42.39	193.58	27.79	38.22	0.23

Table 2.2-3b
Water Delivery via Truck Estimated Daily Maximum Operational Emissions of Criteria Pollutants (lbs/day)

Activity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x
Onsite Operational Emissions						
Onsite Combustion Emissions						
Diesel Generator	0.01	0.01	0.10	0.04	1.14	0.03
Maintenance & Security Vehicles and Equipment	0.25	0.23	146.54	18.99	12.43	0.06
Worker Vehicles	0.14	0.10	5.85	0.36	0.53	0.01
Visitor Cars and Delivery Trucks	0.14	0.13	1.74	0.33	2.12	0.01
Subtotal of Onsite Combustion Emissions	0.55	0.48	154.22	19.72	16.22	0.11
Onsite Fugitive Emissions						
Maintenance & Security Vehicles and Equipment	156.69	23.21				
Worker Vehicles	17.72	2.41				
Visitor Cars and Delivery Trucks	37.55	5.65				
Gasoline Tank				5.56		
Subtotal of Onsite Fugitive Emissions	211.96	31.27	0.00	5.56	0.00	0.00
Subtotal of Onsite Emissions	212.50	31.75	154.22	25.28	16.22	0.11
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.65	0.36	31.83	0.85	3.67	0.06
Visitor Cars and Delivery Trucks	1.01	0.82	9.04	0.99	26.04	0.07
Subtotal of Offsite Combustion Emissions	1.66	1.18	40.87	1.84	29.71	0.13
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	21.58	0.60				
Visitor Cars and Delivery Trucks	96.07	13.64				
Subtotal of Offsite Fugitive Emissions	117.65	14.24				
Subtotal of Offsite Emissions	119.31	15.42	40.87	1.84	29.71	0.13
Total Maximum Emissions	331.82	47.17	195.09	27.12	45.94	0.24

Table 2.2-4a
Water Delivery via Train Estimated Annual Maximum Operational Emissions of Criteria Pollutants (tons/year)

Activity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x
Onsite Operational Emissions						
Onsite Combustion Emissions						
Diesel Generator	0.0001	0.0001	0.0006	0.0002	0.0068	0.0002
Maintenance & Security Vehicles and Equipment	0.05	0.04	26.38	3.42	2.24	0.01
Worker Vehicles	0.02	0.02	1.05	0.06	0.10	0.00
Train for Water Delivery	0.01	0.01	0.09	0.05	0.36	0.00
Visitor Cars and Delivery Trucks	0.01	0.01	0.19	0.02	0.18	0.00
Subtotal of Onsite Combustion Emissions	0.10	0.08	27.71	3.55	2.89	0.02
Onsite Fugitive Emissions						
Maintenance & Security Vehicles and Equipment	28.20	4.18				
Worker Vehicles	3.19	0.43				
Visitor Cars and Delivery Trucks	3.72	0.53				
Gasoline Tank				1.01		
Subtotal of Onsite Fugitive Emissions	35.11	5.14	0.00	1.01	0.00	0.00
Subtotal of Onsite Emissions	35.21	5.23	27.71	4.57	2.89	0.02
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.12	0.06	5.73	0.15	0.66	0.01
Train for Water Delivery	0.00	0.00	0.05	0.04	0.12	0.00
Visitor Cars and Delivery Trucks	0.02	0.01	0.42	0.02	0.36	0.00
Subtotal of Offsite Combustion Emissions	0.14	0.08	6.20	0.21	1.14	0.01
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	3.88	0.11				
Visitor Cars and Delivery Trucks	1.49	0.19				
Subtotal of Offsite Fugitive Emissions	5.37	0.30				
Subtotal of Offsite Emissions	5.51	0.38	6.20	0.21	1.14	0.01
Total Maximum Emissions	40.72	5.61	33.91	4.78	4.03	0.03

Table 2.2-4b
Water Delivery via Truck Estimated Annual Maximum Operational Emissions of Criteria Pollutants (tons/year)

Activity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x
Onsite Operational Emissions						
Onsite Combustion Emissions						
Diesel Generator	0.0001	0.0001	0.0006	0.0002	0.0068	0.0002
Maintenance & Security Vehicles and Equipment	0.05	0.04	26.38	3.42	2.24	0.01
Worker Vehicles	0.02	0.02	1.05	0.06	0.10	0.00
Visitor Cars and Delivery Trucks	0.01	0.01	0.13	0.02	0.11	0.00
Subtotal of Onsite Combustion Emissions	0.08	0.07	27.56	3.50	2.45	0.01
Onsite Fugitive Emissions						
Maintenance & Security Vehicles and Equipment	28.20	4.18				
Worker Vehicles	3.19	0.43				
Visitor Cars and Delivery Trucks	2.27	0.32				
Gasoline Tank				1.01		
Subtotal of Onsite Fugitive Emissions	33.66	4.93	0.00	1.01	0.00	0.00
Subtotal of Onsite Emissions	33.74	5.00	27.56	4.51	2.45	0.01
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.12	0.06	5.73	0.15	0.66	0.01
Visitor Cars and Delivery Trucks	0.06	0.05	0.70	0.05	1.44	0.00
Subtotal of Offsite Combustion Emissions	0.17	0.11	6.43	0.20	2.10	0.02
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	3.88	0.11				
Visitor Cars and Delivery Trucks	5.12	0.71				
Subtotal of Offsite Fugitive Emissions	9.01	0.81				
Subtotal of Offsite Emissions	9.18	0.92	6.43	0.20	2.10	0.02
Total Maximum Emissions	42.92	5.92	33.99	4.72	4.55	0.03

2.2.2.3 Overlapping Construction and Operations Emissions

As discussed in the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2, the first installed SunCatchers will be ready to come online and produce electricity while construction is still progressing. The revised overlapping daily and annual emissions estimates that incorporate the additional water delivery by train are presented in Tables 2.2-5a and 2.2-6a and emissions with truck delivery are presented in Tables 2.2-5b and 2.2-6b. Table 2.2-10 provides a summary of rail and truck transport emissions of non-attainment pollutants. The detailed emission calculations, emission factors and associated assumptions used in estimating the overlapping emissions are provided in Appendix C.

Table 2.2-5a
Water Delivery by Train Estimated Maximum Daily Construction and Operations Overlapping Emissions for Month 7 (lbs/day)

Activity	PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_x
CONSTRUCTION						
Onsite Construction Emissions						
Onsite Combustion Emissions						
Construction Equipment	16.26	14.98	248.65	46.55	271.74	0.27
Worker Vehicles	0.70	0.53	48.65	3.35	4.54	0.07
Security Vehicles	0.01	0.01	1.33	0.03	0.02	0.01
Train for Water Delivery	0.13	0.12	0.95	0.55	4.04	0.02
Water Delivery Trucks	0.30	0.27	2.69	0.23	4.80	0.01
Bridge Construction Delivery Trucks	0.01	0.01	0.04	0.02	0.10	0.00
Other Delivery Trucks	1.64	1.47	13.41	4.79	26.72	0.03
Subtotal of Onsite Combustion Emissions	19.04	17.37	315.73	55.54	311.96	0.40
Onsite Fugitive Emissions						
Construction Equipment	29.59	6.32				
Storage piles	17.95	3.98				
Worker Vehicles	85.91	11.64				
Security Vehicles	6.76	0.93				
Water Delivery Trucks	66.32	9.88				
Bridge Construction Delivery Trucks	1.04	0.15				
Other Delivery Trucks	295.42	41.03				
Subtotal of Onsite Fugitive Emissions	503.00	73.94				
Subtotal of Onsite Emissions	522.03	91.31	315.73	55.54	311.96	0.40
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	5.72	4.34	399.99	27.54	37.31	0.56
Train for Water Delivery	0.42	0.39	2.54	1.07	13.85	0.02
Water Delivery Trucks	0.00	0.00	0.00	0.00	0.00	0.00
Bridge Construction Delivery Trucks	0.28	0.25	2.04	0.96	4.54	0.00
Other Delivery Trucks	21.45	19.26	158.25	74.79	352.93	0.38
Subtotal of Offsite Combustion Emissions	27.87	24.24	562.81	104.37	408.63	0.96
Offsite Paved Road Fugitive Dust Emissions						
Worker Vehicles	15.48	2.32				
Water Delivery Trucks	0.00	0.00				
Bridge Construction Delivery Trucks	0.97	0.12				
Other Delivery Trucks	75.46	9.68				
Subtotal of Offsite Fugitive Emissions	91.91	12.13				
Subtotal of Offsite Emissions	119.78	36.36	562.81	104.37	408.63	0.96
Total Maximum Daily Emissions	641.81	127.68	878.54	159.91	720.59	1.36

Table 2.2-5a
Water Delivery by Train Estimated Maximum Daily Construction and Operations Overlapping Emissions for Month 7 (lbs/day)
(Continued)

Activity	PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_x
OPERATION						
Onsite Operational Emissions						
Onsite Combustion Emissions						
Diesel Generator	0.01	0.01	0.10	0.04	1.14	0.03
Maintenance & Security Vehicles and Equipment	0.01	0.00	3.10	0.40	0.26	0.00
Worker Vehicles	0.00	0.00	0.12	0.01	0.01	0.00
Train for Water Delivery	0.00	0.00	0.02	0.01	0.09	0.00
Visitor Cars and Delivery Trucks	0.00	0.00	0.05	0.01	0.06	0.00
Subtotal of Onsite Combustion Emissions	0.03	0.03	3.39	0.47	1.56	0.03
Onsite Fugitive Emissions						
Maintenance & Security Vehicles and Equipment	3.32	0.49				
Worker Vehicles	0.38	0.05				
Visitor Cars and Delivery Trucks	1.08	0.16				
Gasoline Tank				5.56		
Subtotal of Onsite Fugitive Emissions	4.78	0.71	0.00	5.56	0.00	0.00
Subtotal of Onsite Emissions	4.81	0.73	3.39	6.02	1.56	0.03
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.01	0.01	0.67	0.02	0.08	0.00
Train for Water Delivery	0.00	0.00	0.01	0.01	0.03	0.00
Visitor Cars and Delivery Trucks	0.01	0.01	0.12	0.01	0.26	0.00
Subtotal of Offsite Combustion Emissions	0.03	0.02	0.80	0.04	0.37	0.00
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	0.46	0.01				
Visitor Cars and Delivery Trucks	1.05	0.15				
Subtotal of Offsite Fugitive Emissions	1.50	0.16				
Subtotal of Offsite Emissions	1.53	0.18	0.80	0.04	0.37	0.00
Total Maximum Emissions	6.34	0.91	4.19	6.07	1.92	0.03
CONSTRUCTION AND OPERATIONS OVERLAPPING EMISSIONS						
Total of Onsite Emissions Construction & Operations	526.84	92.05	319.12	61.57	313.52	0.43
Total of Offsite Emissions Construction & Operations	121.31	36.54	563.62	104.41	409.00	0.97
Construction & Operations Overlap Total	648.15	128.59	882.73	165.97	722.51	1.40

Table 2.2-5b
Water Delivery by Truck Estimated Maximum Daily Construction and Operations Overlapping Emissions for Month 7 (lbs/day)

Activity	PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_x
CONSTRUCTION						
Onsite Construction Emissions						
Onsite Combustion Emissions						
Construction Equipment	16.26	14.98	248.65	46.55	271.74	0.27
Worker Vehicles	0.70	0.53	48.65	3.35	4.54	0.07
Security Vehicles	0.01	0.01	1.33	0.03	0.02	0.01
Water Delivery Trucks	0.35	0.31	3.14	0.27	5.60	0.01
Bridge Construction Delivery Trucks	0.01	0.01	0.04	0.02	0.10	0.00
Other Delivery Trucks	1.64	1.47	13.41	4.79	26.72	0.03
Subtotal of Onsite Combustion Emissions	18.95	17.30	315.22	55.02	308.72	0.38
Onsite Fugitive Emissions						
Construction Equipment	29.59	6.32				
Storage piles	17.95	3.98				
Worker Vehicles	85.91	11.64				
Security Vehicles	6.76	0.93				
Water Delivery Trucks	77.38	11.53				
Bridge Construction Delivery Trucks	1.04	0.15				
Other Delivery Trucks	295.42	41.03				
Subtotal of Onsite Fugitive Emissions	514.05	75.59				
Subtotal of Onsite Emissions	533.00	92.89	315.22	55.02	308.72	0.38
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	5.72	4.34	399.99	27.54	37.31	0.56
Water Delivery Trucks	6.38	5.71	57.41	4.98	102.34	0.15
Bridge Construction Delivery Trucks	0.28	0.25	2.04	0.96	4.54	0.00
Other Delivery Trucks	21.45	19.26	158.25	74.79	352.93	0.38
Subtotal of Offsite Combustion Emissions	33.82	29.56	617.69	108.28	497.11	1.09
Offsite Paved Road Fugitive Dust Emissions						
Worker Vehicles	15.48	2.32				
Water Delivery Trucks	28.04	2.78				
Bridge Construction Delivery Trucks	0.97	0.12				
Other Delivery Trucks	75.46	9.68				
Subtotal of Offsite Fugitive Emissions	119.95	14.91				
Subtotal of Offsite Emissions	153.77	44.47	617.69	108.28	497.11	1.09
Total Maximum Daily Emissions	686.78	137.35	932.91	163.30	805.83	1.48

Table 2.2-5b
Water Delivery by Truck Estimated Maximum Daily Construction and Operations Overlapping Emissions for Month 7 (lbs/day)
(Continued)

Activity	PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_x
OPERATION						
Onsite Operational Emissions						
Onsite Combustion Emissions						
Diesel Generator	0.01	0.01	0.10	0.04	1.14	0.03
Maintenance & Security Vehicles and Equipment	0.01	0.00	3.10	0.40	0.26	0.00
Worker Vehicles	0.00	0.00	0.12	0.01	0.01	0.00
Visitor Cars and Delivery Trucks	0.00	0.00	0.04	0.01	0.04	0.00
Subtotal of Onsite Combustion Emissions	0.03	0.02	3.36	0.45	1.46	0.03
Onsite Fugitive Emissions						
Maintenance & Security Vehicles and Equipment	3.32	0.49	0.00	0.00	0.00	0.00
Worker Vehicles	0.38	0.05	0.00	0.00	0.00	0.00
Visitor Cars and Delivery Trucks	0.80	0.12	0.00	0.00	0.00	0.00
Gasoline Tank				5.56		
Subtotal of Onsite Fugitive Emissions	4.49	0.66	0.00	5.56	0.00	0.00
Subtotal of Onsite Emissions	4.51	0.69	3.36	6.01	1.46	0.03
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.01	0.01	0.67	0.02	0.08	0.00
Visitor Cars and Delivery Trucks	0.02	0.02	0.19	0.02	0.55	0.00
Subtotal of Offsite Combustion Emissions	0.04	0.02	0.87	0.04	0.63	0.00
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	0.46	0.01				
Visitor Cars and Delivery Trucks	2.03	0.29				
Subtotal of Offsite Fugitive Emissions	2.49	0.30				
Subtotal of Offsite Emissions	2.53	0.33	0.87	0.04	0.63	0.00
Total Maximum Emissions	7.04	1.01	4.23	6.05	2.08	0.03
CONSTRUCTION AND OPERATIONS OVERLAPPING EMISSIONS						
Total of Onsite Emissions Construction & Operations	537.52	93.57	318.58	61.04	310.17	0.42
Total of Offsite Emissions Construction & Operations	156.30	44.79	618.55	108.31	497.74	1.10
Construction & Operations Overlap Total	693.82	138.37	937.13	169.35	807.92	1.51

Table 2.2-6a
Water Delivery via Train Estimated Maximum Annual Construction and Operations Overlapping Emissions for Months 7 - 18 (tons/year)

Activity	PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_x
CONSTRUCTION						
Onsite Construction Emissions						
Onsite Combustion Emissions						
Construction Equipment	1.741	1.604	28.838	5.273	26.269	0.026
Worker Vehicles	0.076	0.058	5.328	0.367	0.497	0.007
Security Vehicles	0.001	0.001	0.208	0.005	0.003	0.001
Train for Water Delivery	0.020	0.019	0.149	0.087	0.631	0.003
Water Delivery Trucks	0.047	0.042	0.420	0.036	0.748	0.001
Bridge Construction Delivery Trucks	0.000	0.000	0.002	0.001	0.004	0.000
Other Delivery Trucks	0.221	0.198	1.832	0.625	3.591	0.004
Subtotal of Onsite Combustion Emissions	2.11	1.92	36.78	6.39	31.74	0.04
Onsite Fugitive Dust Emissions						
Construction Equipment	3.397	0.828				
Storage piles	1.637	0.364				
Worker Vehicles	9.410	1.275				
Security Vehicles	1.055	0.145				
Water Delivery Trucks	10.346	1.542				
Bridge Construction Delivery Trucks	0.041	0.006				
Other Delivery Trucks	39.661	5.564				
Subtotal of Onsite Fugitive Emissions	65.55	9.72				
Subtotal of Onsite Emissions	67.65	11.64	36.78	6.39	31.74	0.04
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.626	0.476	43.809	3.017	4.086	0.061
Train for Water Delivery	0.066	0.061	0.396	0.167	2.161	0.004
Water Delivery Trucks	0.000	0.000	0.000	0.000	0.000	0.000
Bridge Construction Delivery Trucks	0.011	0.010	0.079	0.038	0.177	0.000
Other Delivery Trucks	2.853	2.561	21.047	9.947	46.939	0.051
Subtotal of Offsite Combustion Emissions	3.56	3.11	65.33	13.17	53.36	0.12
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	1.696	0.254				
Water Delivery Trucks	0.000	0.000				
Bridge Construction Delivery Trucks	0.038	0.005				
Other Delivery Trucks	10.036	1.287				
Subtotal of Offsite Fugitive Emissions	11.77	1.55				
Subtotal of Offsite Emissions	15.33	4.65	65.33	13.17	53.36	0.12
Total Maximum Annual Emissions	82.98	16.30	102.11	19.56	85.11	0.16

Table 2.2-6a
Water Delivery via Train Estimated Maximum Annual Construction and Operations Overlapping Emissions for Months 7 - 18 (tons/year)
(Continued)

Activity	PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_x
OPERATION						
Onsite Operational Emissions						
Onsite Combustion Emissions						
Diesel Generator	0.0001	0.0001	0.0006	0.0002	0.0068	0.0002
Maintenance & Security Vehicles and Equipment	0.0065	0.0060	3.7703	0.4887	0.3199	0.0015
Worker Vehicles	0.0035	0.0027	0.1504	0.0092	0.0137	0.0004
Train for Water Delivery	0.0017	0.0015	0.0123	0.0071	0.0520	0.0002
Visitor Cars and Delivery Trucks	0.0021	0.0018	0.0272	0.0028	0.0259	0.0001
Subtotal of Onsite Combustion Emissions	0.01	0.01	3.96	0.51	0.42	0.00
Onsite Fugitive Emissions						
Maintenance & Security Vehicles and Equipment	4.0314	0.5972				
Worker Vehicles	0.4560	0.0620				
Visitor Cars and Delivery Trucks	0.5319	0.0763				
Gasoline Tank				1.0144		
Subtotal of Onsite Fugitive Emissions	5.02	0.74	0.00	1.01	0.00	0.00
Subtotal of Onsite Emissions	5.03	0.75	3.96	1.52	0.42	0.00
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.0166	0.0092	0.8190	0.0218	0.0944	0.0016
Train for Water Delivery	0.0007	0.0006	0.0067	0.0053	0.0176	0.0002
Visitor Cars and Delivery Trucks	0.0028	0.0021	0.0606	0.0035	0.0516	0.0002
Subtotal of Offsite Combustion Emissions	0.02	0.01	0.89	0.03	0.16	0.00
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	0.5552	0.0155				
Visitor Cars and Delivery Trucks	0.2129	0.0272				
Subtotal of Offsite Fugitive Emissions	0.77	0.04				
Subtotal of Offsite Emissions	0.79	0.05	0.89	0.03	0.16	0.00
Total Maximum Emissions	5.82	0.80	4.85	1.55	0.58	0.00
CONSTRUCTION AND OPERATIONS OVERLAPPING EMISSIONS						
Total of Onsite Emissions Construction & Operations	72.69	12.39	40.74	7.92	32.16	0.04
Total of Offsite Emissions Construction & Operations	16.11	4.71	66.22	13.20	53.53	0.12
Construction & Operations Overlap Total	88.80	17.10	106.96	21.12	85.69	0.16

Table 2.2-6b
Water Delivery via Truck Estimated Maximum Annual Construction and Operations Overlapping Emissions for Months 7 - 18 (tons/year)

Activity	PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_x
CONSTRUCTION						
Onsite Construction Emissions						
Onsite Combustion Emissions						
Construction Equipment	1.741	1.604	28.838	5.273	26.269	0.026
Worker Vehicles	0.076	0.058	5.328	0.367	0.497	0.007
Security Vehicles	0.001	0.001	0.208	0.005	0.003	0.001
Water Delivery Trucks	0.054	0.049	0.490	0.042	0.873	0.001
Bridge Construction Delivery Trucks	0.000	0.000	0.002	0.001	0.004	0.000
Other Delivery Trucks	0.221	0.198	1.832	0.625	3.591	0.004
Subtotal of Onsite Combustion Emissions	2.09	1.91	36.70	6.31	31.24	0.04
Onsite Fugitive Dust Emissions						
Construction Equipment	3.40	0.83				
Storage piles	1.64	0.36				
Worker Vehicles	9.41	1.27				
Security Vehicles	1.05	0.15				
Water Delivery Trucks	12.07	1.80				
Bridge Construction Delivery Trucks	0.04	0.01				
Other Delivery Trucks	39.66	5.56				
Subtotal of Onsite Fugitive Emissions	67.27	9.98				
Subtotal of Onsite Emissions	69.37	11.89	36.70	6.31	31.24	0.04
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.63	0.48	43.81	3.02	4.09	0.06
Water Delivery Trucks	0.99	0.89	8.96	0.78	15.96	0.02
Bridge Construction Delivery Trucks	0.01	0.01	0.08	0.04	0.18	0.00
Other Delivery Trucks	2.85	2.56	21.05	9.95	46.94	0.05
Subtotal of Offsite Combustion Emissions	4.49	3.94	73.89	13.78	67.17	0.14
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	1.70	0.25				
Water Delivery Trucks	4.37	0.43				
Bridge Construction Delivery Trucks	0.04	0.00				
Other Delivery Trucks	10.04	1.29				
Subtotal of Offsite Fugitive Emissions	16.14	1.98				
Subtotal of Offsite Emissions	20.63	5.92	73.89	13.78	67.17	0.14
Total Maximum Annual Emissions	89.99	17.81	110.59	20.09	98.40	0.18

Table 2.2-6b
Water Delivery via Truck Estimated Maximum Annual Construction and Operations Overlapping Emissions for Months 7 - 18 (tons/year)
(Continued)

Activity	PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_x
OPERATION						
Onsite Operational Emissions						
Onsite Combustion Emissions						
Diesel Generator	0.0001	0.0001	0.0006	0.0002	0.0068	0.0002
Maintenance & Security Vehicles and Equipment	0.0065	0.0060	3.7703	0.4887	0.3199	0.0015
Worker Vehicles	0.0035	0.0027	0.1504	0.0092	0.0137	0.0004
Visitor Cars and Delivery Trucks	0.0023	0.0020	0.0299	0.0030	0.0293	0.0001
Subtotal of Onsite Combustion Emissions	0.01	0.01	3.95	0.50	0.37	0.00
Onsite Fugitive Emissions						
Maintenance & Security Vehicles and Equipment	4.0314	0.5972				
Worker Vehicles	0.4560	0.0620				
Visitor Cars and Delivery Trucks	0.6021	0.0867				
Gasoline Tank				1.01		
Subtotal of Onsite Fugitive Emissions	5.09	0.75	0.00	1.01	0.00	0.00
Subtotal of Onsite Emissions	5.10	0.76	3.95	1.52	0.37	0.00
Offsite On-Road Emissions						
Offsite Combustion Emissions						
Worker Vehicles	0.0166	0.0092	0.8190	0.0218	0.0944	0.0016
Visitor Cars and Delivery Trucks	0.0151	0.0123	0.1509	0.0123	0.4064	0.0012
Subtotal of Offsite Combustion Emissions	0.03	0.02	0.97	0.03	0.50	0.00
Offsite Paved Road Fugitive Emissions						
Worker Vehicles	0.5552	0.0155				
Visitor Cars and Delivery Trucks	1.4114	0.1976				
Subtotal of Offsite Fugitive Emissions	1.97	0.21				
Subtotal of Offsite Emissions	2.00	0.23	0.97	0.03	0.50	0.00
Total Maximum Emissions	7.10	0.99	4.92	1.55	0.87	0.00
CONSTRUCTION AND OPERATIONS OVERLAPPING EMISSIONS						
Total of Onsite Emissions Construction & Operations	74.47	12.65	40.65	7.83	31.61	0.04
Total of Offsite Emissions Construction & Operations	22.63	6.15	74.86	13.81	67.67	0.14
Construction & Operations Overlap Total	97.09	18.80	115.51	21.64	99.27	0.18

2.2.2.4 Greenhouse Gas Emissions

The greenhouse gas (GHG) emissions include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and carbon dioxide equivalents (CO_2e). The GHG emissions associated with the onsite and offsite mobile sources during construction were estimated using the same emission factors and techniques presented in the AFC and the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2. GHG emissions from the trains were estimated using Tables C.3 and C.6 for locomotives in the California Climate Action Registry (CCAR) General Reporting Protocol. Total construction GHG emissions with train delivery and truck delivery are presented in Tables 2.2-7a and 2.2-7b, respectively. Total annual Project operational GHG emissions with water delivery via train and via truck are presented in Tables 2.2-8a and 2.2-8b, respectively. The detailed emission calculations, emission factors and associated assumptions used in estimating the GHG emissions are provided in Appendix C.

Table 2.2-7a
Water Delivery via Train Estimated Entire Construction Period Greenhouse Gases Emissions
(metric tonnes)

Activity	CO_2	CH_4	N_2O	CO_2e
Onsite Construction Emissions				
Onsite Combustion Emissions				
Construction Equipment	4,949.78	1.83	-	4,988.20
Worker Vehicles	1,648.06	0.16	0.15	1,697.21
Security Vehicles	100.09	0.03	0.02	108.48
Train for Water Delivery	901.90	0.07	0.02	910.56
All Delivery Trucks	1,675.93	0.01	0.01	1,678.36
Subtotal of Onsite Combustion Emissions	9,275.75	2.10	0.20	9,382.80
Onsite Fugitive Dust Emissions				
Construction Equipment				
Worker Vehicles				
Security Vehicles				
All Delivery Trucks				
Subtotal of Onsite Fugitive Emissions				
Subtotal of Onsite Emissions	9,275.75	2.10	0.20	9,382.80
Offsite On-Road Emissions				
Offsite Combustion Emissions				
Worker Vehicles	13,550.71	1.32	1.21	13,954.82
Train for Water Delivery	1,193.69	0.09	0.03	1,205.15
All Delivery Trucks	17,019.66	0.03	0.03	17,028.23
Subtotal of Offsite Combustion Emissions	31,764.06	1.44	1.27	32,188.21
Offsite Paved Road Fugitive Emissions				
Worker Vehicles				
All Delivery Trucks				
Subtotal of Offsite Fugitive Emissions				
Subtotal of Offsite Emissions	31,764.06	1.44	1.27	32,188.21
Total Entire Construction Period Emissions	41,039.81	3.54	1.47	41,571.01

Table 2.2-7b
Water Delivery via Truck Estimated Entire Construction Period Greenhouse Gases Emissions (metric tonnes)

Activity	CO_2	CH_4	N_2O	CO_2e
Onsite Construction Emissions				
Onsite Combustion Emissions				
Construction Equipment	4,949.78	1.83	-	4,988.20
Worker Vehicles	1,648.06	0.16	0.15	1,697.21
Security Vehicles	100.09	0.03	0.02	108.48
All Delivery Trucks	1,738.44	0.01	0.01	1,740.89
Subtotal of Onsite Combustion Emissions	8,436.36	2.03	0.18	8,534.78
Onsite Fugitive Dust Emissions				
Construction Equipment				
Worker Vehicles				
Security Vehicles				
All Delivery Trucks				
Subtotal of Onsite Fugitive Emissions				
Subtotal of Onsite Emissions	8,436.36	2.03	0.18	8,534.78
Offsite On-Road Emissions				
Offsite Combustion Emissions				
Worker Vehicles	13,550.71	1.32	1.21	13,954.82
All Delivery Trucks	25,021.28	0.03	0.03	25,032.78
Subtotal of Offsite Combustion Emissions	38,571.99	1.35	1.25	38,987.61
Offsite Paved Road Fugitive Emissions				
Worker Vehicles				
All Delivery Trucks				
Subtotal of Offsite Fugitive Emissions				
Subtotal of Offsite Emissions	38,571.99	1.35	1.25	38,987.61
Total Entire Construction Period Emissions	47,008.35	3.38	1.43	47,522.39

Table 2.2-8a
Water Delivery via Train Estimated Annual Maximum Operational Greenhouse Gases Emissions (metric tonnes/year)

Activity	CO_2	CH_4	N_2O	SF_6	CO_2e
Onsite Operational Emissions					
Onsite Combustion Emissions					
Diesel Generator	0.81	0.00	0.00	0.00	0.82
Maintenance & Security Vehicles and Equipment	1,276.90	0.42	0.08	0.00	1,310.36
Worker Vehicles	230.70	0.02	0.02	0.00	237.25
Train for Water Delivery	1,741.16	0.14	0.04	1.00	1,757.86
Visitor Cars and Delivery Trucks	50.64	0.00	0.00	0.00	86.90
Potential sulfur hexafluoride (SF_6) emissions leakage emissions from proposed circuit breakers and other transmissions system equipment				0.02	384.42
Subtotal of Onsite Emissions	3,300.20	0.58	0.15	1.02	3,777.60
Offsite On-Road Emissions					
Offsite Combustion Emissions					
Worker Vehicles	990.04	0.23	0.21	0.00	1,059.28
Train for Water Delivery	1,730.00	0.14	0.04	1.00	1,746.60
Visitor Cars and Delivery Trucks	111.00	0.01	0.01	0.00	115.26
Subtotal of Offsite Emissions	2,831.03	0.38	0.27	0.00	2,921.14
Total Maximum Emissions	6,131.23	0.95	0.41	1.02	6,698.74

Table 2.2-8b
Water Delivery via Truck Estimated Annual Maximum Operational Greenhouse Gases Emissions (metric tonnes/year)

Activity	CO_2	CH_4	N_2O	SF_6	CO_2e
Onsite Operational Emissions					
Onsite Combustion Emissions					
Diesel Generator	0.81	0.00	0.00	0.00	0.82
Maintenance & Security Vehicles and Equipment	1,276.90	0.42	0.08	0.00	1,310.36
Worker Vehicles	230.70	0.02	0.02	0.00	237.25
Visitor Cars and Delivery Trucks	34.58	0.00	0.00	0.00	53.11
Potential sulfur hexafluoride (SF6) emissions leakage emissions from proposed circuit breakers and other transmissions system equipment				0.02	384.42
Subtotal of Onsite Emissions	1,542.99	0.44	0.10	0.02	1,985.94
Offsite On-Road Emissions					
Offsite Combustion Emissions					
Worker Vehicles	990.04	0.23	0.21	0.00	1,059.28
Visitor Cars and Delivery Trucks	411.25	0.01	0.01	0.00	448.88
Subtotal of Offsite Emissions	1,401.29	0.24	0.22	0.00	1,508.16
Total Maximum Emissions	2,944.27	0.68	0.32	0.02	3,494.11

2.2.2.5 Air Quality Impacts Analysis

The results of air quality dispersion modeling performed for onsite emissions were discussed in the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2. New dispersion modeling was not performed for this supplement for either construction or operational activities since the previous modeling addressed the onsite portion of water delivery via truck. For both the train and truck water deliver options, water will be transported across the site to the water tank via water trucks, thus these emissions were incorporated in the previous modeling.

2.2.3 Cumulative Impacts

Cumulative impacts are unchanged from the discussion presented in the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2, docketed August 31, 2009. Any additional emissions sources resulting from the use of the Cadiz well as the Project water supply would be mobile sources and would not change the results of the cumulative analysis previously presented.

2.2.4 Mitigation Measures

Mitigation measures proposed are unchanged from the discussion presented in the Applicant's Response to CEC and BLM Data Requests Set 1, Parts 1 and 2, docketed August 31, 2009.

2.2.5 LORS Compliance

The applicable laws, ordinances, regulations, and standards (LORS) related to the potential air quality effects from the Project are presented in the AFC in Section 5.2.5. These LORS are administered (either independently or cooperatively) by the Mojave Desert Air Quality Management District, EPA Region IX, the CEC, and the California Air Resources Board. The Project, including the changes discussed herein, will comply with all LORS. With the use of the Cadiz well as the primary water supply source for the Project, a federal conformity analysis is potentially required as discussed below.

2.2.5.1.1 Conformity with Applicable Air Quality Plan

Regulations promulgated pursuant to the federal Clean Air Act provisions on General Conformity require that projects in federal non-attainment areas that will be permitted by a federal agency such as the BLM must demonstrate conformity with the applicable state or local attainment plan. Affected projects for which the total of direct and indirect annual emissions of non-attainment pollutants and precursors exceed certain thresholds must demonstrate that these emissions are consistent with the applicable attainment plan. The western portion in Mojave Desert is classified as a "(moderate) non-attainment" area for ozone (NOx and VOC) and PM_{10}. Based on the current attainment designations, the applicable thresholds (per 40 CFR §51.853) are included in Table 2.2-9. If the emissions of any pollutant are equal to or above its threshold, a Federal General Conformity Analysis is required.

Table 2.2-9
Applicable Thresholds for Non-Attainment Pollutants

NO_x	100 tpy
VOC (or ROC)	100 tpy
PM_{10}	100 tpy

Pursuant to the "General Conformity Rule (40 CFR Part 93 Subpart B, and 40 CFR Part 51, Subpart W)", order for the project to conform it must demonstrate that:

- project emissions are specifically identified and accounted for in the State Implementation Plan (SIP's) attainment demonstration;
- project emissions will be completely offset through a revision in the SIP or similar mitigation measures so that there is no net emission increases in this area; or
- project emissions do not cause any new violation of any standard or increase the frequency or severity of any existing violation of standard in the area through an area-wide and/or local air quality modeling analysis.

MDAQMD Rule 2002, General Federal Actions Conformity sets forth policy, criteria, and procedures for demonstrating and assuring conformity of such actions to the applicable implementation plan. Table 2.2-10 presents each of the federal conformity criterion for both the rail and truck transport options for Project construction and operation, and construction and operational overlap. The table summarizes whether the Project would exceed the 100 tpy attainment threshold for each non-attainment pollutant.

Table 2.2-10
Rail and Truck Transport Emissions of Non-Attainment Pollutant Thresholds (tpy)

		Construction	Operations	Construction and Operations Overlap
NO_x	Rail	95.55 (below threshold)	4.03 (below threshold)	85.69 (below threshold)
	Truck	108.85 (above threshold)	4.55 (below threshold)	99.27 (below threshold)
VOC (or ROC)	Rail	20.86 (below threshold)	4.78 (below threshold)	21.12 (below threshold)
	Truck	21.39 (below threshold)	4.72 (below threshold)	21.64 (below threshold)
PM_{10}	Rail	90.57 (below threshold)	40.72 (below threshold)	88.80 (below threshold)
	Truck	97.59 (below threshold)	42.92 (below threshold)	97.09 (below threshold)

Because using the truck transport option would result in greater than 100 tpy of NOx during construction, the project must demonstrate conformity with the applicable state or local attainment plan for NOx. The project will be reviewed by project lead agency (CEC), associated federal agencies, and the local air

district (MDAQMD) on a case-by-case basis to make the conformity determination. Based on MDAQMD's SIPs, the total on-road and off-road emissions in the Project area are 12,970 tpy for NOx. Maximum construction related annual NOx emissions are estimated to be approximately 110 tpy, which is less than one percent of the area emissions.

Should water from the Cadiz well be transported by truck, a conformity analysis will be submitted to the MDAQMD and the CEC for the agencies to review and make the conformity determination. The Applicant is currently in negotiations with BNSF to secure the option to transport water onsite via rail, and updates on the progress associated with pursuing this option will be provided to the agencies as they are available.

2.2.6 References

California Climate Action Registry (CCAR), General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009

Southeastern States Air Resource Managers, Inc. and Sierra Research Inc., Development of Railroad Emissions Methodology, Report No. SR2004-06-02, June 2004

U.S. EPA, Office of Transportation and Air Quality, Emission Factors for Locomotives, EPA-420-F-09-025, April 2009

2.3 GEOLOGIC HAZARDS AND RESOURCES

2.3.1 Affected Environment

The affected environment for Geologic Hazards and Resources was originally discussed in Section 5.3.2 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.3.2 Environmental Consequences

The environmental consequences for Geologic Hazards and Resources during Project construction and operation remain unchanged from the AFC section 5.3.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Geologic Hazard and Resource considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Geologic Hazards and Resources beyond those presented in Section 5.3 of the Project AFC.

2.3.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.3.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Geologic Hazards and Resources have been identified as part of this supplemental analysis.

2.3.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.3.4 of the Project AFC are recommended based on the Project modifications.

2.3.5 LORS Compliance

The LORS presented in Section 5.3.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.3.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.3.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.3.6 References

No additional references beyond those presented in Section 5.3.6 of the Project AFC were used for this supplemental analysis.

2.4 SOIL RESOURCES

2.4.1 Affected Environment

The affected environment for Soil Resources was originally discussed in Section 5.4.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.4.2 Environmental Consequences

The environmental consequences for Soil Resources during Project construction and operation remain unchanged from the AFC section 5.4.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Soil Resource considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Soil Resources beyond those presented in Section 5.4 of the Project AFC.

2.4.3 Cumulative Impacts

No additional cumulative impacts to Soil Resources have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.4.3 of the Project AFC are applicable to the proposed Project changes.

2.4.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.4.4 of the Project AFC are recommended based on the Project modifications.

2.4.5 LORS Compliance

The LORS presented in Section 5.4.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.4.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.4.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.4.6 References

No additional references beyond those presented in Section 5.4.6 of the Project AFC were used for this supplemental analysis.

2.5 WATER RESOURCES

2.5.1 Affected Environment

The affected environment for Water Resources was originally discussed in Section 5.2.1 of the AFC. The affected environment has not changed from the AFC beyond the discussion provided below.

The Cadiz well is an existing well located approximately 64 miles from the Calico Solar site. It is located within 50 feet of the south side of the BNSF railroad line, within the BNSF ROW. The BNSF well is located within the Colorado River Hydrologic Basin, similar to groundwater at the Calico Solar site. The well is located in the Cadiz Hydrologic Unit of the Lucerne Planning Area. The planning area is characterized by basins of internal drainage, with portions of the valley floors covered by dry lakes. Appendix B provides additional information regarding the BNSF Cadiz well and other wells in the area.

Beneficial Groundwater Uses

The Colorado River Regional Water Quality Control Board (RWQCB) Basin Plan (2006) indicates that groundwater in the Cadiz Hydrologic Unit has municipal, domestic and industrial beneficial uses. It should be noted that Cadiz, Inc. located immediately south of the BNSF well extracts groundwater for agricultural uses to irrigate at least a 1,000 acres of citrus, grapes and other crops (DWR, 2003). According to DWR, agricultural activities were initiated in the 1980s to show that groundwater is available and sustainable to serve as irrigation water to meet agricultural uses in the valley.

Geology and Hydrogeology

The principal aquifer systems identified are an upper alluvial aquifer, a lower alluvial aquifer and a bedrock aquifer. It is expected that water that will be used to supply the Project is from either the upper or lower aquifer. The upper alluvial aquifer consists of Quaternary and late-Tertiary Age stream-deposited sand and gravel with a thickness of approximately 100 to 800 feet (DWR Bulletin 91-14). The lower alluvial aquifer consists of older sediments of mid- to late-Tertiary age that are interbedded sand, gravel, silt and clay that are generally less permeable than the sediments in the upper alluvial aquifer. A lower bedrock aquifer has been identified by Metropolitan in carbonate bedrock. There are numerous faults in these desert groundwater basins and these faults may serve as barriers that restrict groundwater movement and isolate groundwater of different quality.

2.5.2 Environmental Consequences

2.5.2.1 Water Supply Reliability

Aquifer testing was performed to confirm that the Cadiz BNSF well could meet water demands for the construction and operations of the Project without significant impact to the aquifer and other wells in the Cadiz area. The objective of the testing was to determine if the well could sustain a long-term production rate of approximately 36.2 afy which correlates to a continuous rate of approximately 25 gpm for use at the facility. The expected water demand during operations is expected to be 20 afy; however, the aquifer testing assumed an increased demand of approximately 36.2 afy to allow a buffer for analysis.

During the construction phase, peak water demand is anticipated to be approximately 150,000 gallons per day with an average continuous yield of approximately 100 gpm. This volume of water will be needed during the initial few months of construction and will decrease to less than half for the remainder of construction.

The results of the pumping test indicate that the aquifer can support water demands for the Calico Solar site during construction and the lifespan of its operations. Detailed results of the pumping test and its analysis are provided in Appendix A.

2.5.2.2 Water Supply and Use

Aquifer testing of the BNSF Cadiz well indicates that the well can support water demands for the Calico Solar site during construction and the lifespan of its operations. The expected water demand during operations is expected to be 20 afy; however, the aquifer testing assumed an increased demand of approximately 36.2 afy to allow a buffer for analysis.

Pumping of the well at the prescribed rates will have no significant impact to water levels or wells in the area, as the zone of influence (ZOI) is estimated to be approximately 540 feet after 20 years of continuous pumping. This ZOI is considerably less than the distance to the closest well, which is approximately one mile away. Detailed information regarding the results of aquifer testing of the BNSF Cadiz well is provided in Appendix A.

2.5.2.3 Water Quality

Historical information on water quality of the BNSF wells, indicate that groundwater is of good quality and Total Dissolved Solids (TDS) concentrations have ranged from approximately 250 to 350 mg/l (DWR, 1967). Use of the Cadiz well as the Project's water supply is not anticipated to affect water quality of the basin because pumping at the rates needed will result in limited drawdown over the duration of operations and the ZOI is relatively small. Therefore, pumping at the Cadiz well would not cause movement of water that could be of poorer quality to replenish the ZOI. The water used from the Cadiz well at the Calico Solar site during operations will not adversely affect groundwater on site, because water that may infiltrate the subsurface will not reach groundwater which is at least 300 feet below the ground surface. Additionally it is expected that water applied to the mirrors for cleaning will evaporate before reaching the ground.

2.5.2.4 Storm Water Runoff and Flooding Hazards

The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to storm water runoff and flooding hazards. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to storm water runoff and flooding hazards beyond those presented in Section 5.5 of the Project AFC.

2.5.3 Cumulative Impacts

There are no anticipated projects within the estimated ZOI for the BNSF well at the rate and duration of pumping needed for the project. Combined with the existing one afy pumped by BNSF, it is not

anticipated that the Project would contribute to cumulative impacts beyond those analyzed in Section 5.5.3 of the Project AFC and subsequent filings.

2.5.4 Mitigation Measures

The mitigation measures for temporary impacts related to construction presented in Section 5.5.4 of the Project AFC are applicable to the proposed Project changes. No additional mitigation measures are recommended based on the Project modifications.

2.5.5 LORS Compliance

The LORS presented in Section 5.5.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.5.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.5.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.5.6 References

California Department of Water Resources (DWR), 2004, California's Groundwater Bulletin 118, Colorado River Hyrdrologic Region, Cadiz Valley Groundwater Basin, updated February 27.

California Department of Water Resources (DWR), 1967, Bulletin No. 91-14, "Water Wells and Springs in Bristol, Broadwell, Cadiz, Danby, and Lavic Valleys and Vicinity, San Bernardino and Riverside Counties, California," August.

California Regional Water Quality Control Board (RWQCB), Colorado River Region, 2006, Water Quality Control Plan for the Colorado River Basin, December.

2.6 BIOLOGICAL RESOURCES

2.6.1 Affected Environment

The affected environment for Biological Resources was originally discussed in Section 5.6.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.6.2 Environmental Consequences

With the exception of the aforementioned change in water supply, the environmental consequences during Project construction and operation remain unchanged from the AFC section 5.6.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Biological Resource considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Biological Resources beyond those presented in Section 5.6 of the Project AFC.

2.6.3 Cumulative Impacts

No additional cumulative impacts to Biological Resources have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.6.3 of the Project AFC are applicable to the proposed Project changes.

2.6.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.6.4 of the Project AFC are recommended based on the Project modifications.

2.6.5 LORS Compliance

The LORS presented in Section 5.6.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.6.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.6.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.6.6 References

No additional references beyond those presented in Section 5.6.6 of the Project AFC were used for this supplemental analysis.

2.7 CULTURAL RESOURCES

2.7.1 Affected Environment

The affected environment for Cultural Resources was originally discussed in Section 5.7.1 of the AFC. The only change to the affected environment is the use of the Cadiz Well as the primary water supply source for the Project.

The Cadiz well is an existing well located approximately 64 miles from the Solar One site. It is located within 50 feet of the south side of the BNSF railroad line, within BNSF ROW. The well was first constructed in the 1920s, but has been consistently improved and heavily altered over the past 35 years (e.g., changes in depth, diameter) as part of regular maintenance and to sustain the well's use. Further, the well is not visible from any public vantage point, since it is located within a non-historic period shed, clad with metal and wooden siding. The well no longer resembles a water system from the 1920s, and is a non-distinctive common mundane utilitarian feature located along most railroad lines and rural areas of California. The well is located on private property owned and maintained by the BNSF. Water from the Cadiz well will be transported by rail or truck to the Calico Solar site, and both options for transport are considered in the analysis of Cultural Resources.

2.7.2 Environmental Consequences

The environmental consequences for Cultural Resources during Project construction and operation remain unchanged from the AFC Section 5.7.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to cultural resource considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Cultural Resources beyond those presented in Section 5.7 of the Project AFC.

2.7.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.7.9 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to the Cultural Resources have been identified as part of this supplemental analysis.

2.7.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.7.4 of the Project AFC are recommended based on the Project modifications.

2.7.5 LORS Compliance

The LORS presented in Section 5.7.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.7.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.7.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.7.6 References

No additional references beyond those presented in Section 5.7.6 of the Project AFC were used for this supplemental analysis.

2.8 PALEONTOLOGICAL RESOURCES

2.8.1 Affected Environment

The affected environment for Paleontological Resources was originally discussed in Section 5.8.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.8.2 Environmental Consequences

The environmental consequences for Paleontological Resources during Project construction and operation remain unchanged from the AFC Section 5.8.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Paleontological Resource considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Paleontological Resources beyond those presented in Section 5.8 of the Project AFC.

2.8.3 Cumulative Impacts

No additional cumulative impacts to Paleontological Resources have been identified as part of this supplemental analysis. Cumulative impacts discussed in Section 5.8.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Paleontological Resources have been identified as part of this supplemental analysis.

2.8.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.8.4 of the Project AFC are recommended based on the Project modifications.

2.8.5 LORS Compliance

The LORS presented in Section 5.8.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.8.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.8.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.8.6 References

No additional references beyond those presented in Section 5.8.6 of the Project AFC were used for this supplemental analysis.

2.9 LAND USE

2.9.1 Affected Environment

The affected environment for Land Use was originally discussed in Section 5.9.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.9.2 Environmental Consequences

The environmental consequences for Land Use during Project construction and operation remain unchanged from the AFC Section 5.9.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Land Use considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Land Use beyond those presented in Section 5.9 of the Project AFC.

2.9.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.9.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Land Use have been identified as part of this supplemental analysis.

2.9.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.9.4 of the Project AFC are recommended based on the Project modifications.

2.9.5 LORS Compliance

The LORS presented in Section 5.9.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.9.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.9.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.9.6 References

No additional references beyond those presented in Section 5.9.6 of the Project AFC were used for this supplemental analysis.

2.10 SOCIOECONOMICS

2.10.1 Affected Environment

The affected environment for Socioeconomics was originally discussed in Section 5.10.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.10.2 Environmental Consequences

The environmental consequences for Socioeconomics during Project construction and operation remain unchanged from the AFC section 5.10.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to socioeconomic considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Socioeconomics beyond those presented in Section 5.10 of the Project AFC.

2.10.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.10.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Socioeconomics have been identified as part of this supplemental analysis.

2.10.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.10.4 of the Project AFC are recommended based on the Project modifications.

2.10.5 LORS Compliance

The LORS presented in Section 5.10.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.10.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.10.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.10.6 References

No additional references beyond those presented in Section 5.10.6 of the Project AFC were used for this supplemental analysis.

2.11 TRAFFIC AND TRANSPORTATION

2.11.1 Affected Environment

The affected environment for Traffic and Transportation was originally discussed in Section 5.11.1 of the AFC. The only change to the affected environment is the use of the Cadiz well as the primary water supply source for the Project.

The Cadiz well is an existing well located approximately 64 miles from the Calico Solar site. It is located within 50 feet of the south side of the BNSF railroad line, within BNSF ROW. The traffic condition within the project study area is anticipated to be not substantially different than the conditions previously considered. Water from the Cadiz well will be transported by rail or truck to the Calico Solar site, and both options for transport are considered in the analysis of Traffic and Transportation below.

2.11.2 Environmental Consequences

2.11.2.1 Truck Transport of Cadiz Well Water

The potential change of the water source from a remote site (Cadiz Well) is anticipated to not drastically change construction or operation related impacts to traffic and transportation and will be consistent with the findings presented in Section 5.11.2 of the Project AFC.

Project Construction Trip Generation

During the Project construction schedule, the Project study area will experience short-term increases in traffic associated primarily with construction worker commute and material and equipment delivery trips. The traffic analysis evaluated the worst-case Project construction scenario by analyzing the peak month where the combined trip total between worker commute and material and equipment delivery trips is highest.

Construction Workers

The construction trade projections estimate that, during the peak construction month, there will be 731 workers onsite working on a daily basis. To evaluate the worst-case scenario, the traffic analysis assumed no workers would carpool and all workers would arrive during the morning peak period (0700 to 0900) and depart during the evening peak period (1600 to 1800). This assumption was used throughout this supplemental analysis.

Construction Equipment and Material Deliveries

The construction equipment and material delivery projections estimate that during the peak construction month, there will be 1,099 truck trips per month. These trips were subsequently converted into passenger car equivalent (PCE) trips at 3 PCE per truck. No acutely hazardous materials would be delivered to or used by the Project. Most deliveries will occur between 0700 and 1700 on weekdays. Because truck deliveries will likely arrive and depart throughout the day, 30 percent of the total daily truck trips were

conservatively assumed to occur during the morning and evening peak hours. This assumption was updated with the addition of offsite water supply deliveries and was analyzed in this supplement.

The Project construction trip generation data in Table 2.11-1, show the resulting trips that would be generated by construction personnel and delivery trucks including offsite water supply.

Table 2.11-1
Project Construction Trip Generation

Vehicle Type	Peak Daily Round Trips	Morning Peak Trips			Evening Peak Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Construction worker vehicles[1]	1,462	731	0	731	0	731	731
Truck deliveries[2]	274	41	0	41	0	41	41
Offsite Water Supply delivery[3]	234	35	0	35	0	35	35

Sources: SES Solar One, LLC, 2008, Revised Plan of Development, Figures and Tables Volume, October 6, 2008.

Tessera Solar, 2010.

Notes:

1 Peak workforce was conservatively analyzed at 731 worker trips conservatively assumed to drive alone during both the morning (0700 to 0900) and evening (1600 to 1800) peak hours. (Table 13-1 Construction Trade Projections)

2 Trucks deliveries shown in the table were adjusted into PCE vehicles (3 PCE per truck). 1,099 truck trips per month = 3,297 PCEs divided by 24 working days = 137 PCE one-way trips or 274 round trips per day on average. It was also assumed that 30 percent of the truck delivery trips arrive during the morning peak hour and leave during the evening peak hour while the remaining deliveries (70 percent) would arrive and leave during off-peak hours.

3 Offsite water supply deliveries shown in the table were adjusted into PCE vehicles (3 PCE per truck). 39 truck trips day = 117 PCE one-way trips or 234 round trips per day during peak construction. It was also assumed that 30 percent of the water supply truck delivery trips arrive during the morning peak hour and leave during the evening peak hour while the remaining deliveries (70 percent) would arrive and leave during off-peak hours.

PCE = passenger car equivalent

Project Operations Trip Generation

During Project operations, the Project study area will experience minor increases in traffic associated primarily with operation worker commute and operation and maintenance (O&M) trips and some minimal visitor trips. The traffic analysis evaluated the worst-case Project operations scenario by accounting for both planned (operations and delivery) and future visitor trips within the Project study area.

Operations

The operational workforce projections show that project operations by Year 2014 would require up to 164 workers working onsite on a daily basis. The estimated vehicle requirements for operational workers include up to120 cars and four van pool vehicles. The operational projections also included 10 daily visitor trips for sales, deliveries, and other services. To evaluate the worst-case scenario, these vehicle trips were assumed to arrive during the morning peak period (0700 to 0900) and depart during the evening peak period (1600 to 1800). This assumption was used throughout this supplement.

Deliveries

To sustain and support Project operations, five weekly delivery trips of hydrogen, O&M supplies, waste management, and hazardous waste handling are anticipated at the Project site. In addition, one weekly tractor trailer trip is anticipated for spare parts, building supplies, and temporary rental equipments. It is estimated that there will be an average of 12 truck round trips or 36 PCE operational delivery round trips on a daily basis accessing the Project site during operations. Delivery trips will likely arrive and depart throughout the day. The analysis assumed the worst-case scenario: that these trips occur on the same day. This assumption was updated with the addition of offsite water supply deliveries and was analyzed in this supplement.

The Project trip generation data in Table 2.11-2, show the resultant trips that would be generated by operations, deliveries, and Project site trips.

Table 2.11-2
Project Operations Trip Generation

Vehicle Type	Peak Daily Round Trips[1]	Morning Peak Trips			Evening Peak Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Operations	248	124	0	124	0	124	124
Deliveries[2]	36	9	6	15	0	6	6
Offsite Water Supply delivery[3]	60	9	0	9	0	9	9
Visitors	20	5	5	10	5	5	10

Sources: SES Solar One, LLC, 2008, Revised Plan of Development, Figures and Tables Volume, October 6, 2008

URS Corporation, 2008; Tessera Solar, 2010.

Notes:

[1] Peak workforce was conservatively analyzed at 124 worker trips . Conservatively assumed to drive alone during both a.m. (7:00 to 9:00) and p.m. (4:00 to 6:00) peak hours. Note that, this includes 120 workers (drive alone) plus 4 van pooling. (Table 10-1 Operations and Maintenance Vehicles)

[2] Heavy trucks shown in the table were adjusted into Passenger Car Equivalent (3 PCE) vehicle (6 Delivery vehicles x 3 PCE = 18 one-way or 36 round trips).

[3] Offsite water supply deliveries shown in the table were adjusted into PCE vehicles (3 PCE per truck). 10 truck trips day = 30 PCE one-way trips or 60 round trips per day during project operation. It was also assumed that 30 percent of the water supply truck delivery trips arrive during the morning peak hour and leave during the evening peak hour while the remaining deliveries (70 percent) would arrive and leave during off-peak hours.

PCE = passenger car equivalent

Project Trip Distribution

Trip Distribution and Assignment

It is assumed that workers will come from San Bernardino County and adjoining counties. Solar equipment components will also be transported and assembled onsite. As shown in Table 2.11-3, it is anticipated that the construction and operation workforces will be originating from both east and west I-40. Water delivery from the Cadiz well will be coming from westbound I-40.

Table 2.11-3
Workforce/Delivery Trips Distribution

Origin of Workforce Vehicle Travel to Project Site	Construction Workforce	Operation Workforce	Truck Delivery	Offsite Water Supply Delivery
I-40 westbound	20.0%	20.0%	40.0%	100.00%
I-40 eastbound	80.0%	80.0%	60.0%	_
Totals	100.0%	100.0%	100.0%	100.0%

Sources: SES Solar One, LLC, 2008; URS Corporation, 2008; Tessera Solar, 2010

Notes:

% = Percent

I-40 = Interstate 40

Project Construction Effects

Construction of the Project will occur with varying levels of manpower, construction delivery, and equipment use. The majority of Project construction activities are anticipated to occur during normal daytime work hours. Possible exceptions may include limited night construction activities which are considered time critical or continuous in nature (such as concrete pours), and that may require extension of work hours based on inherent process requirements or material driven characteristics. These nighttime construction activities are considered nonrecurring events that would generate a minimal number of trips, retain a small number of workers onsite, and would likely have minimal effect on evening peak hour traffic. Therefore, nighttime work is anticipated to be a non-critical trip generation factor in the Project construction phase, with no significant effects. The updated project construction effects include the assessment of the proposed offsite water supply. All applicable LORS will be observed during the course of Project construction.

Roadway Level of Service During Project Construction

Table 2.11-4 shows the roadway Level of Service (LOS) for Year 2011 No Project conditions.

Table 2.11-4
Roadway Level of Service – Year 2011 No Project Conditions

Roadway	Location	Classification	Traffic Volumes	Truck Percent of ADT	LOS
I-40	West of Hector Road	Freeway	15,660[1]	43[3]	B[4]
I-40	East of Hector Road	Freeway	16,850[1]	43[3]	B[4]
Hector Road	North of I-40	Local	10/10[2]	--	A/A[5]
Hector Road	South of I-40	Collector	10/15[2]	--	A/A[5]
National Trails Highway	West of Hector Road	Collector	10/10[2]	--	A/A[5]
National Trails Highway	East of Hector Road	Collector	10/15[2]	--	A/A[5]

Table 2.11-4
Roadway Level of Service – Year 2011 No Project Conditions
(Continued)

Roadway	Location	Classification	Traffic Volumes	Truck Percent of ADT	LOS
BLM Access Road	North of I-40	Local	N/A	N/A	N/A

Source: URS Corporation, 2008.
Notes:
1 ADT Volumes. Source: 2007 Traffic Volumes (Caltrans, 2008a).
2 AM/PM Volumes (Higher Volume between Northbound and Southbound Direction). Source: National Data Services, 2008a.
3 Source: 2007 Truck Volumes (Caltrans, 2008b).
4 ADT LOS.
5 Peak Hour LOS.
6 Peak Hour LOS is based on Table 5.11-3, San Bernardino County CMP, 2003 Update.
-- = not available
ADT = average daily traffic
I-40 = Interstate 40
LOS = level of service

As shown in Table 2.11-4, all traffic study roadway segments are forecast to operate at LOS B or better under Year 2011 No Project conditions.

Table 2.11-5 shows the roadway LOS for Year 2011 Project Construction conditions.

Table 2.11-5
Roadway Level of Service – Year 2011 Project Construction Conditions

Roadway	Location	Classification	Traffic Volumes	Truck Percent of ADT	LOS
I-40	West of Hector Road	Freeway	17,000[1]	43[3]	B[4]
I-40	East of Hector Road	Freeway	17,485[1,7]	43[3]	B[4]
Hector Road	North of I-40	Local	740/810[2,7]	--	B/C[5]
Hector Road	South of I-40	Collector	10/15[2]	--	A/A[5]
National Trails Highway	West of Hector Road	Collector	10/10[2]	--	A/A[5]
National Trails Highway	East of Hector Road	Collector	10/15[2]	--	A/A[5]
BLM Access Road	North of I-40	Local	81/12[2]	--	A/A[5]

Source: URS Corporation, 2008.
Notes:
1 ADT Volumes. Source: 2007 Traffic Volumes (Caltrans, 2008a).
2 AM/PM Volumes (Higher Volume between Northbound and Southbound Direction). Source: National Data Services, 2008a.
3 Source: 2007 Truck Volumes (Caltrans, 2008b).
4 ADT LOS.
5 Peak Hour LOS.
6 Peak Hour LOS is based on Table 5.11-3, San Bernardino County CMP, 2003 Update.
7 Updated with water delivery trips, 2010.
-- = not available
ADT = average daily traffic
I-40 = Interstate 40
LOS = level of service

As shown in Table 2.11-5 all traffic study intersections are forecast to operate at LOS C or better under Year 2011 Project Construction conditions. No study roadway segments will be significantly affected by Project construction activities.

Intersection Level of Service During Project Construction

Table 2.11-6 presents peak hour intersection LOS and average vehicle delay results under Year 2011 No Project conditions.

Table 2.11-6
Peak Hour Intersection Level of Service – Year 2011 No Project Conditions

Intersection	Morning Peak Hour		Evening Peak Hour	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
I-40 WB Ramp/Hector Road	8.8	A	8.8	A
I-40 EB Ramp/Hector Road	8.8	A	8.8	A
Hector Road/National Trails Highway	8.5	A	8.5	A

Source: URS Corporation, 2008.

Notes:

EB	=	eastbound
I-40	=	Interstate 40
LOS	=	level of service
sec	=	seconds
veh	=	vehicle
WB	=	westbound

As shown in Table 2.11-6, all study intersections are forecasted to operate at LOS C or better under Year 2011 No Project conditions.

Table 2.11-7 presents peak hour intersection LOS and average vehicle delay results under Year 2011 Project Construction conditions. The LOS calculation worksheets are provided in Appendix D. Figure 2.11-1 shows Year 2011 Project Construction conditions for morning and evening peak hour turning movement volumes at each study area intersection.

Table 2.11-7
Peak Hour Intersection Level of Service – Year 2011 Project Construction Conditions

Intersection	Morning Peak Hour		Evening Peak Hour	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
I-40 WB Ramp/Hector Road	16.7[1]	C	13.1	B
I-40 EB Ramp/Hector Road	16.5	C	11.7[1]	B
Hector Road/National Trails Highway	8.5	A	8.5	A

Source: URS Corporation, 2008.

[1] Updated with water delivery trips, 2010.

Notes:

EB	=	eastbound
I-40	=	Interstate 40
LOS	=	level of service
sec	=	seconds
veh	=	vehicle
WB	=	westbound

As shown in Table 2.11-7, all study intersections are forecast to operate at LOS C or better under Year 2011 Project Construction conditions. No study intersections will be significantly affected by Project construction activities.

The study intersections are anticipated to experience short-term increases in construction traffic during the peak construction period. However, traffic volume is expected to return to pre-Project levels on completion of Project construction.

Project Operations Effects

During the normal O&M of the Project, a planned 164 employee workforce will oversee its O&M. Occasional deliveries and maintenance-related trips are anticipated as part of normal operations. The updated project operations effects include the assessment of the proposed offsite water supply. Applicable LORS will be observed during Project operations.

Roadway Level of Service During Project Operations

Table 2.11-8 shows the roadway LOS for Year 2014 No Project conditions.

Table 2.11-8
Roadway Level of Service – Year 2014 No Project Conditions

Roadway	Location	Classification	Traffic Volumes	Truck Percent of ADT	LOS
I-40	West of Hector Road	Freeway	16,675[1]	43[3]	B[4]
I-40	East of Hector Road	Freeway	17,940[1]	43[3]	B[4]
Hector Road	North of I-40	Local	10/10[2]	--	A/A[5]
Hector Road	South of I-40	Collector	10/15[2]	--	A/A[5]
National Trails Highway	West of Hector Road	Collector	10/10[2]	--	A/A[5]
National Trails Highway	East of Hector Road	Collector	10/15[2]	--	A/A[5]
BLM Access Road	North of I-40	Local	N/A	N/A	N/A

Source: URS Corporation, 2008.
Notes:
[1] ADT Volumes. Source: 2007 Traffic Volumes (Caltrans, 2008a).
[2] AM/PM Volumes (Higher Volume between Northbound and Southbound Direction). Source: National Data Services, 2008a.
[3] Source: 2007 Truck Volumes (Caltrans, 2008b).
[4] ADT LOS.
[5] Peak Hour LOS.
[6] Peak Hour LOS is based on Table 5.11-3, San Bernardino County CMP, 2003 Update.
-- = not available
ADT = average daily traffic
I-40 = Interstate 40
LOS = level of service

As shown in Table 2.11-8, all study roadway segments are forecast to operate at LOS B or better under Year 2014 No Project conditions.

Table 2.11-9 shows the roadway LOS for Year 2014 Project Operations conditions.

Table 2.11-9
Roadway Level of Service – Year 2014 Project Operations Conditions

Roadway	Location	Classification	Traffic Volumes	Truck Percent of ADT	LOS
I-40	West of Hector Road	Freeway	16,915[1]	43[3]	B[4]
I-40	East of Hector Road	Freeway	18,070[1,7]	43[3]	B[4]
Hector Road	North of I-40	Local	160/160[2,7]	--	A/A[5]
Hector Road	South of I-40	Collector	10/15[2]	--	A/A[5]
National Trails Highway	West of Hector Road	Collector	10/10[2]	--	A/A[5]
National Trails Highway	East of Hector Road	Collector	10/15[2]	--	A/A[5]
BLM Access Road	North of I-40	Local	N/A	N/A	N/A

Source: URS Corporation, 2008.
Notes:
1 ADT Volumes. Source: 2007 Traffic Volumes (Caltrans, 2008a).
2 AM/PM Volumes (Higher Volume between Northbound and Southbound Direction). Source: National Data Services, 2008a.
3 Source: 2007 Truck Volumes (Caltrans, 2008b).
4 ADT LOS.
5 Peak Hour LOS.
6 Peak Hour LOS is based on Table 5.11-3, San Bernardino County CMP, 2003 Update.
7 Updated with water delivery trips. 2010.
-- = not available
ADT = average daily traffic
I-40 = Interstate 40
LOS = level of service

As shown in Table 2.11-9, all study roadway segments are forecast to operate at LOS B or better under Year 2014 Project Operations conditions.

Intersection Level of Service During Project Operations

Table 2.11-10 presents peak hour intersection LOS and average vehicle delay under Year 2014 No Project conditions.

Table 2.11-10
Peak Hour Intersection Level of Service – Year 2014 No Project Conditions

Intersection	Morning Peak Hour		Evening Peak Hour	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
I-40 WB Ramp/Hector Road	8.8	A	8.8	A
I-40 EB Ramp/Hector Road	8.8	A	8.8	A
Hector Road/National Trails Highway	8.5	A	8.5	A

Source: URS Corporation, 2008.
Notes:
EB = eastbound
I-40 = Interstate 40
LOS = level of service
sec = seconds
veh = vehicle
WB = westbound

As shown in Table 2.11-10, all study intersections are forecast to operate at LOS A or better under Year 2014 No Project conditions.

Table 2.11-11 presents peak hour intersection LOS and average vehicle delay results under Year 2014 Project Operations conditions. The LOS calculation worksheets are provided in Appendix D. Figure 2.11-2 shows Year 2014 Project Operations morning and evening peak hour turning movement volumes for each study area intersection.

Table 2.11-11
Peak Hour Intersection Level of Service –Year 2014 Project Operations Conditions

Intersection	Morning Peak Hour		Evening Peak Hour	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
I-40 WB Ramp/Hector Road	9.3[1]	A	9.2	A
I-40 EB Ramp/Hector Road	9.3	A	9.2[1]	A
Hector Road/National Trails Highway	8.5	A	8.5	A

Source: URS Corporation, 2008.
[1] Updated with water delivery trips, 2010.
Notes:
EB = eastbound
I-40 = Interstate 40
LOS = level of service
sec = seconds
veh = vehicle
WB = westbound

As shown in Table 2.11-11, all traffic study area intersections are forecast at LOS A or better under Year 2014 Project Operations.

There would be a minimal increase in intersection delay because of the minimal number of added trips associated with Year 2014 Project Operations. The minimal increase in intersection delay would not cause degradation of LOS to unacceptable levels or a significant effect.

Based on these findings, no significant traffic effects would occur at the traffic study area intersections during Project operations.

2.11.2.2 Project Effects Summary

Effects of Construction Traffic on Roadways

The roadways that will experience a short-term increase in traffic from construction worker and truck deliveries will be I-40 and Hector Road. The projected added trips along these roadways, however, would not result in degradation of their current LOS to unacceptable levels.

Based on these findings, no significant traffic effects would occur at the traffic study area roadways during Project construction.

Effects of Construction Traffic on Intersections

The results of the intersection LOS analysis shown in Table 2.11-7 indicate that all study intersections would continue to operate at an acceptable LOS C or better during both morning and evening peak hour analysis periods. These good intersection operating conditions are attributed to the low baseline pre-construction traffic in the study area which provided sufficient intersection capacity to handle short-term construction traffic.

Based on these findings, no significant traffic effects would occur at the traffic study intersections during Project construction.

Effects of Project Operations Traffic on Roadways

Similar to construction conditions, the roadways that will experience Project operational traffic will be I-40 and Hector Road. The projected added trips from operational workers, maintenance deliveries and visitors along these roadways, however, would not result in degradation of the future pre-operational roadway LOS to unacceptable levels.

Based on these findings, no significant traffic effects would occur at the traffic study area roadways during Project operations.

Effects of Project Operations on Intersections

The results of the intersection LOS analysis, shown in Table 2.11-11, indicate that all study intersections would continue to operate at an acceptable LOS A during both morning and evening peak hour analysis

periods. These good intersection operating conditions are attributed to the low future pre-operational traffic in the study area which provided sufficient intersection capacity to handle Project operations traffic.

Based on these findings, no significant traffic effects would occur at the traffic study intersections during Project operation.

Effects of Construction Traffic on Roadways near the Cadiz Well Site

The roadway that may experience a short-term increase in traffic from water supply deliveries near the Cadiz Well site will be I-40 and Kelbaker Road with a projected Year 2011 ADT of 220 vehicles per day. Similar to the Calico Solar Project site and vicinity, the projected added trips along these roadways would not result in degradation of their current LOS to unacceptable levels.

Based on these findings, no significant traffic effects would occur at the aforementioned roadways during Project construction.

Effects of Operation Traffic on Roadways near the Cadiz Well Site

Similar to construction conditions, the roadway that may experience a long-term operational traffic from water supply deliveries near the Cadiz Well site will be I-40 and Kelbaker Road with a projected Year 2014 Average Daily Traffic (ADT) of 235 vehicles per day. Similar to the Calico Solar project site and vicinity, the projected added trips along these roadways would not result in degradation of their current LOS to unacceptable levels.

Based on these findings, no significant traffic effects would occur at the aforementioned roadways during Project operation.

2.11.2.3 Rail Transport of Cadiz Well Water

The rail transport of Cadiz Well water supply is not anticipated to create any additional construction or operation related impacts to traffic and transportation and will be consistent with the findings presented in Section 5.11.2 of the Project AFC. The rail transport of Cadiz well water will not contribute Project construction or operational trips at the study roadways and intersections within the Project study area.

2.11.3 Cumulative Impacts

No additional cumulative impacts to traffic and transportation at the Project site including both the internal and external (regional and local) circulation system within the Project study area have been identified in this supplemental analysis.

2.11.4 Mitigation Measures

The mitigation measures and other discussion presented in Section 5.11.4 of the Project AFC are applicable to the proposed Project changes. No additional mitigation measures are recommended based on the Project modifications.

Consistent with the mitigation discussion presented in Section 5.11.4 of the Project AFC, the Project does not exceed the threshold of significance for traffic and transportation impacts.

2.11.5 LORS Compliance

The LORS presented in Section 5.11.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.11.5 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.11.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.11.6 References

In addition to the references presented in presented in Section 5.11.6 of the Project AFC, the following references were used for this supplemental analysis.

Tessera Solar. 2010. Offsite Water Supply Calculation Worksheets, January 2010.

Mojave National Preserve 1999-2000 Traffic Counts, January 2010.

2.12 NOISE

2.12.1 Affected Environment

The affected environment for Noise was originally discussed in Section 5.12.1 of the AFC. The considered change to the affected environment is the use of the offsite Cadiz well as the primary water supply source for the Project. This section examines the potential environmental noise consequences for two possible water delivery scenarios—truck or rail—relating to use of the Cadiz well as the primary Project water source.

2.12.2 Environmental Consequences

2.12.2.1 Construction Noise

The following discussion pertains to the two water delivery scenarios during the construction phase of the Project, prior to nominal operation of SunCatchers. Section 5.12.2.1 of the Project AFC discusses potential noise impacts with regard to construction traffic.

Water Storage

The construction of water storage tanks were included in the noise impact assessment described in Section 5.12.2 of the Project AFC. Predicted sound levels would exceed existing ambient sound levels by greater than 5 dBA; however, the potential impacts are considered to be temporary and therefore less than significant.

Water Loading at the Cadiz Well

The expected noise during the process of loading of water from the Cadiz well into mobile tanks would be comprised of the mechanical systems associated with the well pump house and the idling trucks or locomotive that will deliver the tanks of water to the Project site. It should be noted that the water loading process is expected to occur at a maximum frequency of once a day for up to an hour.

If trains are to be used for transporting the water, according to Federal Transit Administration (FTA) guidelines, the predicted noise level from an idling train would be 74 dBA hourly L_{eq} at 50 feet from the train (FTA, 2006). If trucks will be used, and assuming they are comparable to buses, the same FTA guidance suggests that the hourly L_{eq} at 50 feet would be 53 dBA.

At the BNSF Cadiz well, there is a housed pump 50 feet south of existing rail track. Photographs of the pump and the well site are provided in Appendix B. It is assumed that the external housing or enclosure provides some degree of sound attenuation on the mechanical radiated noise emanating from the pump.

Treating the pump house as a single noise source, the maximum allowable noise level that would still comply with the most stringent noise threshold from the San Bernardino County Development Code (i.e., 55 dBA hourly Leq during the daytime hours and 45 dBA during the nighttime hours [10 PM to 7 AM] at residential land use—see Section 5.12.5.3 of the Project AFC) depends on its distance to the nearest noise-sensitive receiver. Based on a review of available aerial photographs, there appear to be several

agricultural lands south of the pump house that may have associated occupied dwellings. The approximate distance to the nearest of these observed potential residences is 3,000 feet from the pump house.

While ambient environmental noise data is not available for the Cadiz well site nor the nearest potential residential receiver, FTA guidance suggests the existing day-night noise level (L_{dn}) can range between 45 and 75 dBA, depending on proximity to railroad operations (FTA, 2006). The lower value of this range implies an hourly L_{eq} of about 39 dBA, which is 6 dBA lower than the aforementioned San Bernardino County Development Code noise threshold. Using 39 dBA L_{eq} as an assumed ambient noise level, the pump house noise would have to be, like the estimate of an idling locomotive, no louder than 74 dBA at a distance of 50 feet. Thus, the predicted new ambient sound level, including these two sources, would be approximately 44 dBA. This sound level would be no greater than 5 dBA over the estimated existing ambient Leq, less than the Development Code criteria of 45 dBA, and this level is anticipated to be a less than significant impact.

Water Delivery by Trucks

The majority of construction-related traffic would use I-40. The existing hourly noise level from I-40 is approximately 76.5 dBA at 100 feet per Section 5.12.2.1 of the Project AFC. Based on the traffic volume presented in Table 5.11-10 of the Project AFC, the noise level in 2011 reflecting project construction conditions would increase to 77.2 dBA at 100 feet, which is an increase of less than 1 dBA.

The total number of water delivery trucks would be 39 per day. Those trucks will arrive and leave throughout the construction hours between 0700 and 1900. The noise level would not be expected to increase more than 1 dBA by adding 39 trucks to the 2011 ADT (17,000 vehicles). Therefore, no noise impact would be anticipated.

As described in Section 5.12.2.1 of the Project AFC, the noise effect from construction traffic is anticipated to be less than significant for Hector Road and the temporary access road due to the lack of noise-sensitive receivers along these roadways.

Water Delivery by Rail

Tank cars transporting water from the Cadiz well will be attached to existing freight train operations. Therefore, no significant increase of rail traffic would be expected. The freight trains delivering the water would stop at the intersection of Hector Road and the existing rail track to unload the water. Noise from locomotive idling would be expected; however, it is assumed the duration of idling noise would be less than one hour for each water unloading process and would be considered temporary. Further, this idling noise would dissipate with distance (and other naturally sound attenuative factors, such as air and ground absorption) and effectively blend with (or be masked by) I-40 highway traffic noise before reaching noise-sensitive receiver SR1. Since the distance between SR2 and the location of the water unload operation would be greater than 30,000 feet, the corresponding noise level increase at SR2 would be negligible. Thus, noise impacts from the water unloading process would not be anticipated.

Until a pipeline is built to route the unloaded water directly to the Main Service Complex, water would be transported to the Main Services Complex by trucks that are expected to drive at speeds no greater than

30 miles per hour. In addition, there is no nearby noise-sensitive receiver along the truck route between the water unloading point and the Main Services Complex. Therefore, no noise impact would be anticipated.

2.12.2.2 Operational Noise

The following discussion pertains to the two water delivery scenarios during nominal operation of the Project.

Water Storage

While pumps would be necessary to load water into the aforementioned storage tanks and regularly supply SunCatcher dish-washing trucks at the Main Services Complex, there is no noise-sensitive receiver within two miles of the Main Services Complex. Hence, no noise impact would be expected during daytime and nighttime hours from this fixed water pump activity.

Water Loading at Cadiz Well

The expected noise sources at the Cadiz well during the water loading activity would include either train or truck idling and pump operation. It should be noted that this activity would occur only once every other day for an hour. As described in Section 2.12.2.1, the noise impact would be considered less than significant with respect to the apparent nearest potentially noise-sensitive residential land use.

Water Delivery by Trucks

The total number of water delivery trucks arriving to and leaving from the Project site are expected to be 10 per day. Consistent with the traffic analysis addressed in Section 2.11, it was assumed 30 percent of these deliveries would occur either during a daytime or nighttime peak hour, and as such would result in less than a 10 percent increase in Project operational traffic volume. Since, in general, it takes a doubling of road traffic volume to increase noise level by a quantity of 3 dBA, this anticipated change would not be considered significant. Further, adding 10 trucks to the projected I-40 traffic volumes would cause an increase of no more than five percent and, consequently, less than one decibel of average noise level increase. Therefore, no noise impact would be anticipated.

As described in Section 5.12.2.2 of the Project AFC, the noise effect from water delivery trucks is anticipated to be less than significant from Hector Road and the temporary access road due to the lack of nearby noise-sensitive receivers along those roadways.

Water Delivery by Rail

Tank cars transporting water will be attached to existing freight train operations. Therefore, no significant increase of rail traffic would be expected. Water deliveries would occur every other day. The freight train lines delivering the water would stop at the intersection of Hector Road and the existing rail track to unload the water. Noise from locomotive idling would be expected; however, it is assumed the duration of idling noise would be less than one hour and would be considered temporary. This idling noise would dissipate with distance (and other naturally sound attenuation factors, such as air and ground absorption)

and effectively blend with (or be masked by) I-40 highway traffic noise before reaching noise-sensitive receiver SR1. Since the distance between SR2 and the location of the water unloading operation would be greater than 30,000 feet, the corresponding noise level increase at SR2 would be negligible. Thus, noise impacts from the water unloading process would not be anticipated.

It is anticipated that unloaded water would be conveyed by pipeline approximately 3,000 feet from the rail line to the storage tanks at the Main Services Complex. However, if this pipeline is not completed prior to Project operation, trucks transporting the water are expected to drive this distance along the access road route at speeds of no more than 30 miles per hour. In addition, there are no nearby noise-sensitive receivers along the route to the Main Services Complex. Therefore, no noise impacts would be anticipated.

2.12.3 Cumulative Impacts

No additional cumulative impacts to the noise at the site have been identified as part of this supplemental analysis.

2.12.4 Mitigation Measures

The mitigation measures and other discussion presented in Section 5.12.4 of the Project AFC are applicable to the proposed Project changes. No additional mitigation measures are recommended based on the Project modifications.

With implementation of the mitigation measures and guidance outlined in Section 5.12.4 of the Project AFC, impacts to noise as a result of plant construction and operation will be reduced to less than significant levels.

2.12.5 LORS Compliance

The LORS presented in Section 5.12.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.12.5 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.12.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.12.6 References

FTA, *Transit Noise and Vibration Impact Assessment*, FTA-VA-90-1003-06, May 2006, p. 5-9 through 5-11.

2.13 VISUAL RESOURCES

2.13.1 Affected Environment

The affected environment for Visual Resources was originally discussed in Section 5.13.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.13.2 Environmental Consequences

The environmental consequences for Visual Resources during Project construction and operation remain unchanged from the AFC section 5.13.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Visual Resource considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Visual Resources beyond those presented in Section 5.13 of the Project AFC.

2.13.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.13.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Visual Resources have been identified as part of this supplemental analysis.

2.13.4 Mitigation Measures

The mitigation measures for temporary impacts related to construction presented in Section 5.13.4 of the Project AFC are applicable to the proposed Project changes. No additional mitigation measures are recommended based on the Project modifications.

2.13.5 LORS Compliance

The LORS presented in Section 5.13.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.13.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.13.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.13.6 References

No additional references beyond those presented in Section 5.13.6 of the Project AFC were used for this supplemental analysis.

2.14 WASTE MANAGEMENT

2.14.1 Affected Environment

The affected environment for Waste Management was originally discussed in Section 5.14.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.14.2 Environmental Consequences

The environmental consequences for Waste Management during Project construction and operation remain unchanged from the AFC section 5.14.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Waste Management considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Waste Management beyond those presented in Section 5.14 of the Project AFC.

2.14.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.14.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Waste Management have been identified as part of this supplemental analysis.

2.14.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.14.4 of the Project AFC are recommended based on the Project modifications.

2.14.5 LORS Compliance

The LORS presented in Section 5.14.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.14.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.14.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.14.6 References

No additional references beyond those presented in Section 5.14.6 of the Project AFC were used for this supplemental analysis.

2.15 HAZARDOUS MATERIALS HANDLING

2.15.1 Affected Environment

The affected environment for Hazardous Materials Handling was originally discussed in Section 5.15.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.15.2 Environmental Consequences

The environmental consequences for Hazardous Materials Handling during Project construction and operation remain unchanged from the AFC section 5.15.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Hazardous Materials Handling considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Hazardous Materials Handling beyond those presented in Section 5.15 of the Project AFC.

2.15.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.15.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Hazardous Materials Handling have been identified as part of this supplemental analysis.

2.15.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.15.4 of the Project AFC are recommended based on the Project modifications.

2.15.5 LORS Compliance

The LORS presented in Section 5.15.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.15.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.15.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.15.6 References

No additional references beyond those presented in Section 5.15.6 of the Project AFC were used for this supplemental analysis.

2.16 PUBLIC HEALTH AND SAFETY

2.16.1 Affected Environment

The affected environment for Public Health and Safety was originally discussed in Section 5.16.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.16.2 Environmental Consequences

The environmental consequences for Public Health and Safety during Project construction and operation remain unchanged from the AFC section 5.16.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Public Health and Safety considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Public Health and Safety beyond those presented in Section 5.16 of the Project AFC.

2.16.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.16.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Public Health and Safety have been identified as part of this supplemental analysis.

2.16.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.16.4 of the Project AFC are recommended based on the Project modifications.

2.16.5 LORS Compliance

The LORS presented in Section 5.16.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.16.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.16.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.16.6 References

No additional references beyond those presented in Section 5.16.6 of the Project AFC were used for this supplemental analysis.

2.17 WORKER SAFETY

2.17.1 Affected Environment

The affected environment for Worker Safety was originally discussed in Section 5.17.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.17.2 Environmental Consequences

The environmental consequences for Worker Safety during Project construction and operation remain unchanged from the AFC section 5.17.1. The use of the Cadiz well as a water supply, back-up or primary, is not a significant change with regard to Worker Safety considerations. The water supply and associated activities will result in minor changes that do not create additional construction or operation related impacts to Worker Safety beyond those presented in Section 5.17 of the Project AFC.

2.17.3 Cumulative Impacts

Cumulative impacts discussed in Section 5.17.3 of the Project AFC are applicable to the proposed Project changes. No additional cumulative impacts to Worker Safety have been identified as part of this supplemental analysis.

2.17.4 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.17.4 of the Project AFC are recommended based on the Project modifications.

2.17.5 LORS Compliance

The LORS presented in Section 5.17.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.17.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.17.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.17.6 References

No additional references beyond those presented in Section 5.17.6 of the Project AFC were used for this supplemental analysis.

2.18 CUMULATIVE IMPACTS

2.18.1 Affected Environment

The affected environment for Cumulative Impacts was originally discussed in Section 5.18.1 of the AFC. The affected environment resulting from using the Cadiz well as the primary Project water supply is unchanged from that presented in the AFC.

2.18.2 Environmental Consequences

The Cumulative Impacts during Project construction and operation remain unchanged from the AFC section 5.18.1. The use of the Cadiz well as a water supply, back-up or primary, is not anticipated to cause a significant change with regard to Cumulative Impact considerations.

2.18.3 Mitigation Measures

No additional mitigation measures beyond those presented in Section 5.18.4 of the Project AFC are recommended based on the Project modifications.

2.18.4 LORS Compliance

The LORS presented in Section 5.18.5 of the Project AFC are applicable to the revised Project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.18.11 of the Project AFC is unchanged and the proposed Project modifications do not affect the required permits or Project schedule presented in Section 5.18.5 of the Project AFC. The Project, including the changes discussed herein, will comply with all LORS.

2.18.5 References

No additional references beyond those presented in Section 5.18.6 of the Project AFC were used for this supplemental analysis.

Calico Solar Project Area

Hector Rd

BNSF Well #1

Cadiz Rd

Cadiz BNSF Well

Kelbaker Rd

Amboy Rd

Essex Rd

National Trails Hwy

Reche Rd

Border Ave

LEGEND

Calico Solar

- Project Boundary
- N.A.P. (Not a Part)
- Water Well
- Truck Travel for Rail Option
- Truck Travel for Truck Option
- Rail Travel for Rail Option
- BNSF Railroad
- Major Roads

SOURCES: USGS 24K Quads
(Needles 1969, San Bernardino 1996);
TIGER (road, railroad 2000);

CADIZ BNSF WELL WATER TRANSPORATION
CALICO SOLAR PROJECT

URS

2.5 0 2.5 5 Miles

SCALE: 1" = 5 Miles(1:316,800)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: CL	DATE: 01-25-10	FIG. NO: 1-1
PM: SW	PROJ. NO: 27658189.40008	

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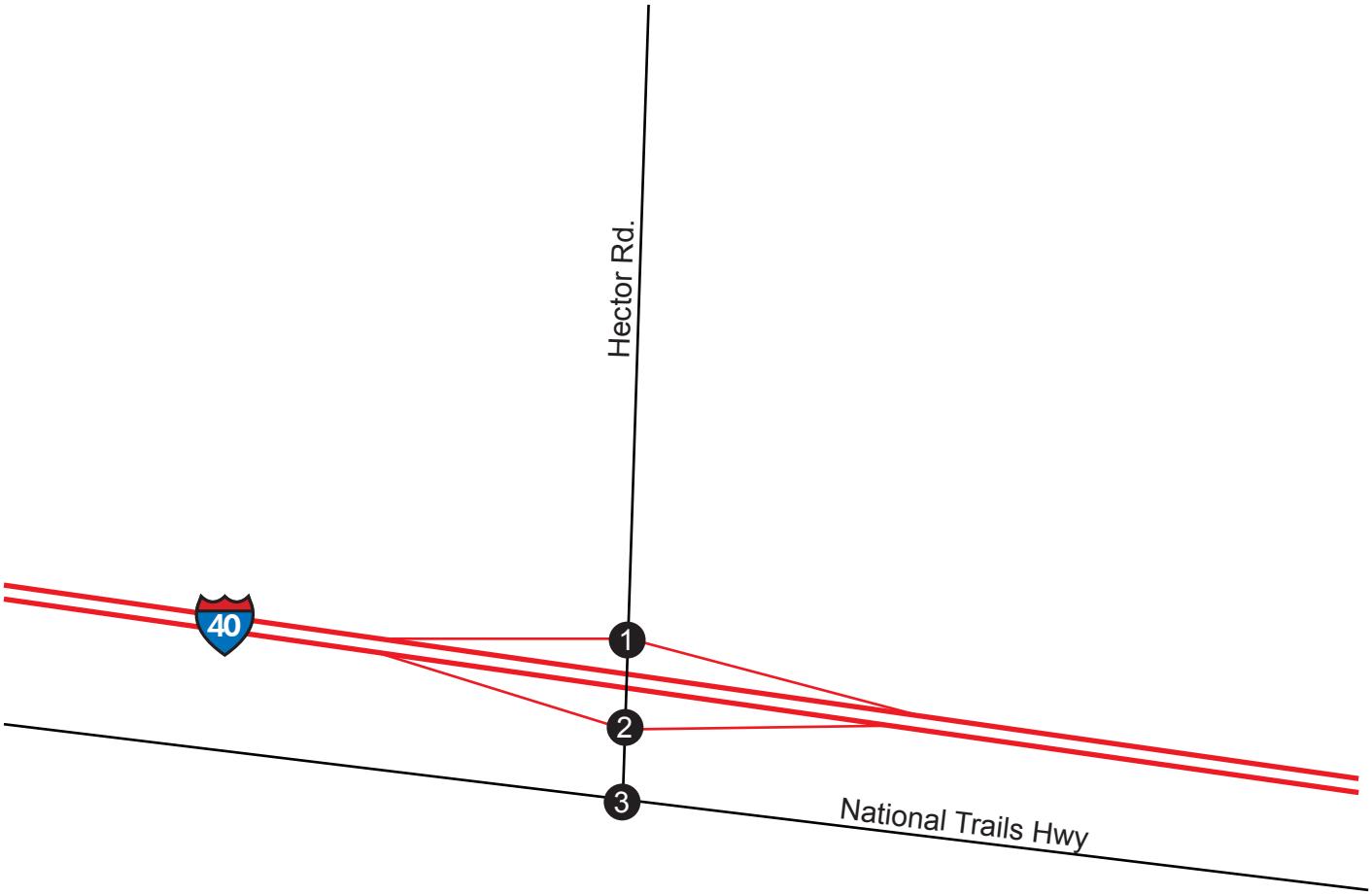

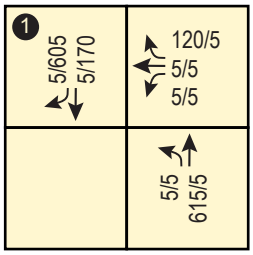

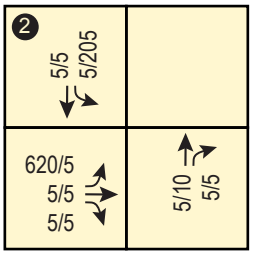

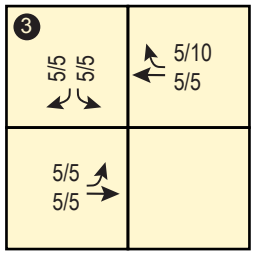

LEGEND

3/5 = AM/Peak hour Volumes
PM/Peak hour Volumes

31 = Average Daily Traffic Volumes

Note:
Numbers rounded to the nearest five.

URS	Not to Scale	**2011 NO PROJECT PLUS PROJECT CONSTRUCTION TRAFFIC VOLUMES CALICO SOLAR PROJECT**	
		CREATED BY: SV	DATE: 11-03-08
		PM: WM	PROJ. NO:27658181.10000
			FIG. NO: **2.11-1**

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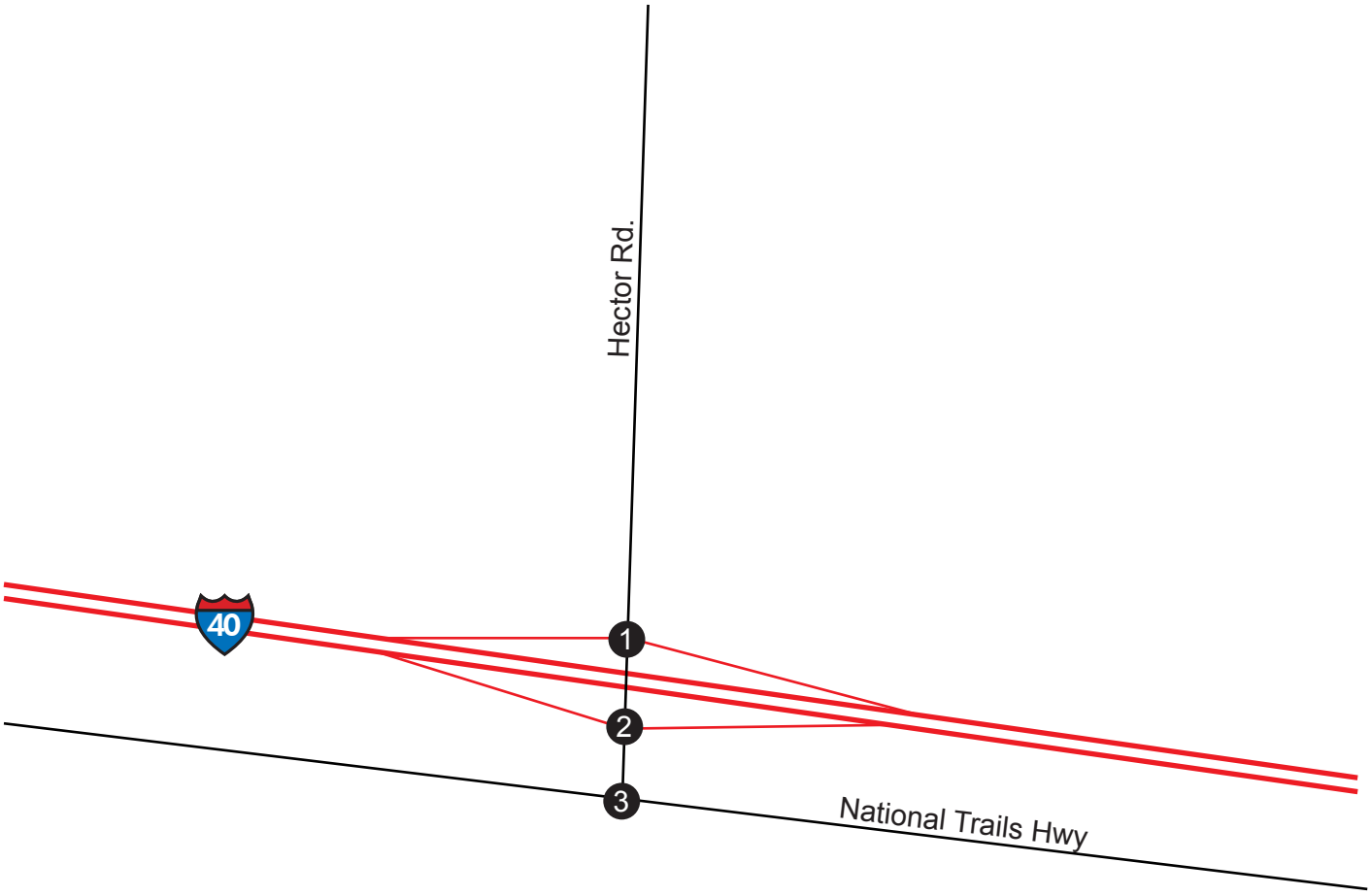

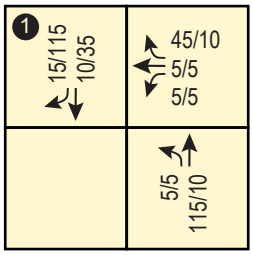

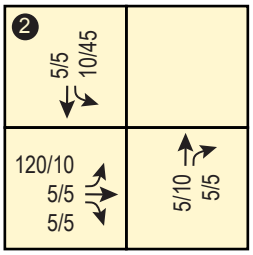

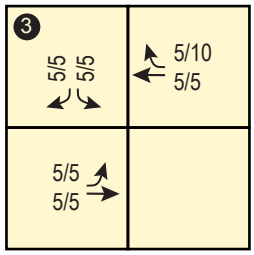

LEGEND

3/5 = AM/Peak hour Volumes / PM/Peak hour Volumes

31 = Average Daily Traffic Volumes

Note:
Numbers rounded to the nearest five.

URS	Not to Scale	**2014 NO PROJECT PLUS PROJECT OPPERATIONS TRAFFIC VOLUMES CALICO SOLAR PROJECT**	
		CREATED BY: SV	DATE: 11-03-08
		PM: WM	PROJ. NO:27658181.10000
			FIG. NO: **2.11-2**

K:\2008\SES\Solar1\fig 2.11-2.ai

URS

Technical Memorandum

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Santa Ana, CA 92505
Phone: 714.835.6886
FAX: 714.667.7147

ACTION **INFO**

TO: Bob Scott, PG, CHG		**File: 27658188.40001**
		X-REF: Solar One (Calico) Project
		Tessera Solar North America
		Date: January 25, 2010
From: Joe Liles, PG, CHG and Taras Kruk, PG, CHG, CEG		
Subject: BNSF Well #1 Pumping Test Analysis		

Introduction

Presented in this Technical Memorandum are the results of a groundwater pumping test performed on BNSF Well#1 located approximately 60 miles southeast of a proposed solar power plant west of Ludlow, California. It is our understanding that Tessera Solar North America, LLC (TSNA) is negotiating with Burlington Northern and Santa Fe (BNSF) to use water from this well as a primary or backup water supply for the Calico Solar (formerly SES Solar One) site. TSNA retained URS Corporation (URS) to conduct aquifer testing of BNSF Well#1 to confirm that the well could meet water demands for construction and operation of the facility without significant impact to the aquifer and other wells in the Cadiz area. TSNA previously submitted the results of a data review for wells present in the Cadiz area to the California Energy Commission (CEC).

The objective of the test was to determine if BNSF Well #1 could sustain a long-term production rate of approximately 36.2 acre-feet per year (afy), which correlates to a continuous rate of approximately 25 gallons per minute (gpm) for use at the facility. Peak water demand is expected to be about 45 gpm during daily operations. While the Project is anticipated to use approximately 20 afy, this analysis overestimated water use to ensure water reliability. During a peak two-year construction phase of the facility, the anticipated peak water demand is on the order of 150,000 gallons per day with an average continuous yield of about 100 gpm. This volume of water will be needed during the initial few months of construction and will decrease to less than half for the remainder of construction.

The scope of work consisted of a short-term stress test followed by a stepped rate pumping test and recovery monitoring. Water level data collected during the tests were used to assess hydraulic properties of the well, including short-term specific capacity (*Sp*), transmissivity (*T*), long-term drawdown effects, and long-term zone of pumping influence (*ZOI*).

Pumping drawdown charts and projections are shown on Figures 1 and 2; well construction details are included as **Attachment A**, and aquifer test analytical plots are included as **Attachment B**. Descriptions of the field monitoring and data analysis are provided below.

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Field Monitoring

For this investigation, the stepped-rate test consisted of four steps, with each individual step lasting six hours. An initial stress test was performed on January 12, 2010 to assess initial drawdown effects in the well and establish pumping rates for the stepped-rate pumping test. Pumping for the first step began on January 13, 2010 and recovery monitoring began January 14, 2010. Electronic pressure transducers and data-loggers were used during the test. The initial depth to groundwater prior to starting the test was measured with an electronic water-level probe at 229.25 feet below grade. Field monitoring activities were conducted in accordance with general guidelines in American Society for Testing Materials standard D4050-91 (ASTM, 1994).

Based on results of the stress test and the limited discharge piping size (2-inch discharge piping) from the well, the target pumping rates for each step were 100 gpm, 120 gpm, 140 gpm, and 160 gpm. A summary of the pumping and drawdown measurements are shown on **Figure 1**. During the 24-hour stepped-rate pumping test, approximately 187,000 gallons of water was pumped from the well with a measured drawdown of about 3.2 feet prior to shutting off the pump. During recovery, the water level rose 2.7 feet in the first minute, 2.8 feet in the first hour, and to within 0.24 feet of the initial water level by the end of a 2-½ hour recovery measurement phase.

Data Analysis

Specific Capacity
Drawdown data at the end of each pumping step was used to calculate the short-term specific capacity using the following formula:

$$Sp = \frac{Q}{(h_o - h)} \quad (1)$$

Where: Sp = Short-term specific capacity (gpm/ft)

Q = Pumping rate (gpm)

$(h_o\text{-}h)$ = Total drawdown at 6, 12, 18, 24 hours of pumping (ft)

Results of the analysis, as shown on **Figure 1**, indicated a *Sp* range from 50.0 gpm/ft at 120 gpm to 52.6 gpm/ft at 100 gpm. The overall average *Sp* was 51.3 gpm/ft.

Typically, the maximum recommended well pumping rate should not result in long-term drawdown that exceeds 20 percent of the aquifer thickness (i.e. the maximum recommended continuous well pumping rate should retain at least 80 percent of the aquifer's water column

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thickness). Assuming that the aquifer mimics the well screen interval of 194 ft (i.e., 250-444 ft below grade), then a short-term peak drawdown of 39 ft should not be exceeded. Therefore, based on a *Sp* of 51.3 gpm/ft, short-term pumping operations for peak demand can be as high as 2,000 gpm. This is well above the anticipated peak demand of about 100 gpm for construction activities and 45 gpm for facility operations.

Transmissivity

Using the step-drawdown pumping and recovery data, estimates of transmissivity (T) were made with the Cooper & Jacob (1946) Drawdown and Theis (1935) Recovery Test methods applied by the AQTESOLV® program (Windows Version 3.01, Duffield—2000). Output plots of the analyses are included in **Attachment B**. Results of the analyses indicate a T of 170,000 gallons per day per foot (gpd/ft).

Drawdown Analysis

Using the *Sp* average of 51.3 gpm/ft, initial drawdowns for target pumping rates were estimated for the time ending with the first pumping step using the following formula:

$$s_w = \frac{Q}{Sp} \tag{2}$$

Where: s_w = Initial drawdown in ft.

Theoretical pumping curves were then developed to predict total drawdown after one log cycle (60 hours) of pumping at a specified *Q* using the following modified Cooper-Jacob (1946) equation:

$$\Delta s_w = \frac{264\,Q}{T} \tag{3}$$

Where: T = Transmissivity in gpd/ft

Δs_w = Drawdown over one log cycle for pumping rate Q (ft/log cycle)

The resultant drawdowns after one log cycle of pumping for each target rate were estimated from the following modified Cooper and Jacob (1946) equation:

$$s_w' = \frac{264\,Q}{T} + s_w \tag{4}$$

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Where: s_w' = Predicted drawdown, in ft, after one log cycle (at 60 hrs) of pumping at Q

Theoretical pumping curves were then derived by fitting a straight line with a slope Δs_w through the predicted points of drawdown, s_w and s_w', for the target values of Q as shown on **Figure 2**. The projected rates are overlain by the pumping test drawdown data to show how the actual step-test data at 100 gpm, 120 gpm, 140 gpm, and 160 gpm correspond with the long-term projections.

For the anticipated average Q of 100 gpm during planned construction activities, the total projected drawdown is 2.5 ft at the end of the 2-year construction phase.

For the anticipated average Q of 25 gpm during facility operations, the total projected drawdown stabilizes at approximately 0.65 ft after 5 years.

Zone of Influence (ZOI)
In accordance with guidance provided by the California Drinking Water Source Assessment and Protection (DWSAP) program (California Department of Health Services, 1999), the groundwater pumping zone of influence (ZOI) was calculated to assess the potential capture of groundwater after 5 years (Zone B5) 10 years (Zone B10) and 20 years (Zone B20) of pumping activities at the long-term projected rate of 36.2 afy (about 25 gpm). ZOI calculations are based on the *fixed radius delineation method* using the following formula:

$$r = \sqrt{\frac{Q't}{\pi \eta H}} \qquad (5)$$

Where:
- r = Radius of pumping ZOI (ft)
- Q' = Pumping capacity of the well (1,756,000 ft^3/yr at 25 gpm)
- t = Travel time to wells (5, 10, and 20 yrs)
- η = Effective porosity (unitless; 0.2 is the default value)
- H = Length of perforated well screen (194 ft)

Results of the analysis indicate a ZOI of 270 ft at 5 yrs, 380 ft at 10 yrs, and 540 ft at 20 yrs. These results indicate that the planned pumping activities should not affect groundwater conditions at the nearest production well, which is over one mile away.

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Subject: BNSF Well #1 Pumping Test Analysis

Summary and Conclusions
A summary of the test results are tabulated below.

Annual Construction Use (gpd)	150,000
Annual Production Use (afy)	36.2
Daily Ave. Use (gpm)	
Construction	100
Production	25
Short-Term *Sp* (gpm/ft)	51.3
Transmissivity (gpd/ft)	170,000
Construction Drawdown (ft)	
2 yrs	2.5
Production Drawdown (ft)	
2 yrs	0.60
5 yrs	0.65
10 yrs	0.65
20 yrs	0.65
Production *ZOI* (ft)	
5 yrs	270
10 yrs	380
20 yrs	540

Based on the results of the pumping test, URS concludes the following:

- The aquifer penetrated by BNSF Well #1 can support water demands for the Calico site during construction and the lifespan of its operations.
- Pumping of the well at the prescribed rates will have no significant impact to water levels in the area, as the ZOI is considerably less than the distance to the closest well, which is approximately one mile away.

Historical information on water quality of the BNSF wells Cadiz 1 and Cadiz 2, indicate that groundwater is of good quality and Total Dissolved Solids (TDS) concentrations have ranged from approximately 250 to 350 mg/l (DWR, 1964). The Cadiz 1 and Cadiz 2 wells were abandoned last year according to BNSF personnel and were located within 200 feet of Well #1 that was pump tested and is proposed as a water supply for the Solar One (Calico) project.

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Subject: BNSF Well #1 Pumping Test Analysis

References

American Society for Testing Materials, 1994, Standard Test Method (field procedure) for Withdrawal and Injection Tests for Determining Hydraulic Properties of Aquifer Systems, ASTM Designation D4050-91, in ASTM Standards on Groundwater and Vadose Zone Investigations, ASTM Committee D-18 on Soil and Rock, Second Edition, p. 432.

Cooper, H. H., Jr. and Jacob, C.E., 1946, A Generalized Graphical Method for Evaluating Formation Constants and Summarizing Well Field History; Am. Geophys. Union Trans., v. 27, p.526-534.

California Department of Health Services, 1999, Drinking Water Source Assessment and Protection (DWSAP) Program. January 1999.

Duffield, G.M., 2000, AQTESOLV7, Aquifer Test Solver, Version 1.17; Geraghty and Miller, Inc. Modeling Group, Reston Virginia.

Theis, C.V. 1935. Relation between Lowering of the Piezometric Surface and Rate and Duration of Discharge of a Well: Amer. Geophys. Union Trans., v. 16, p. 519-524.

Figures

Figure 1
Pumping and Drawdown Effects
BNSF Well#1
Long Term Stepped-Rate Test

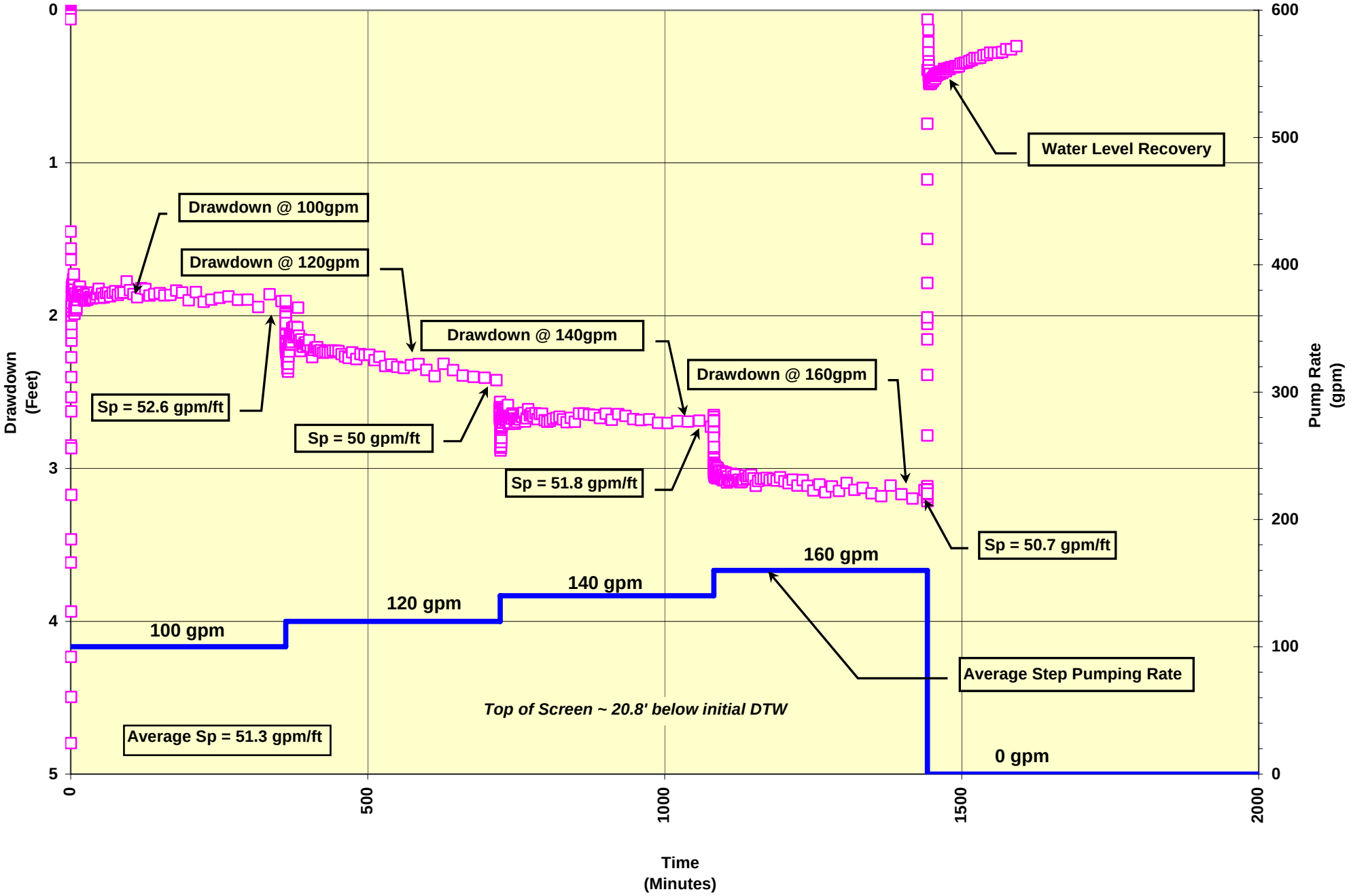
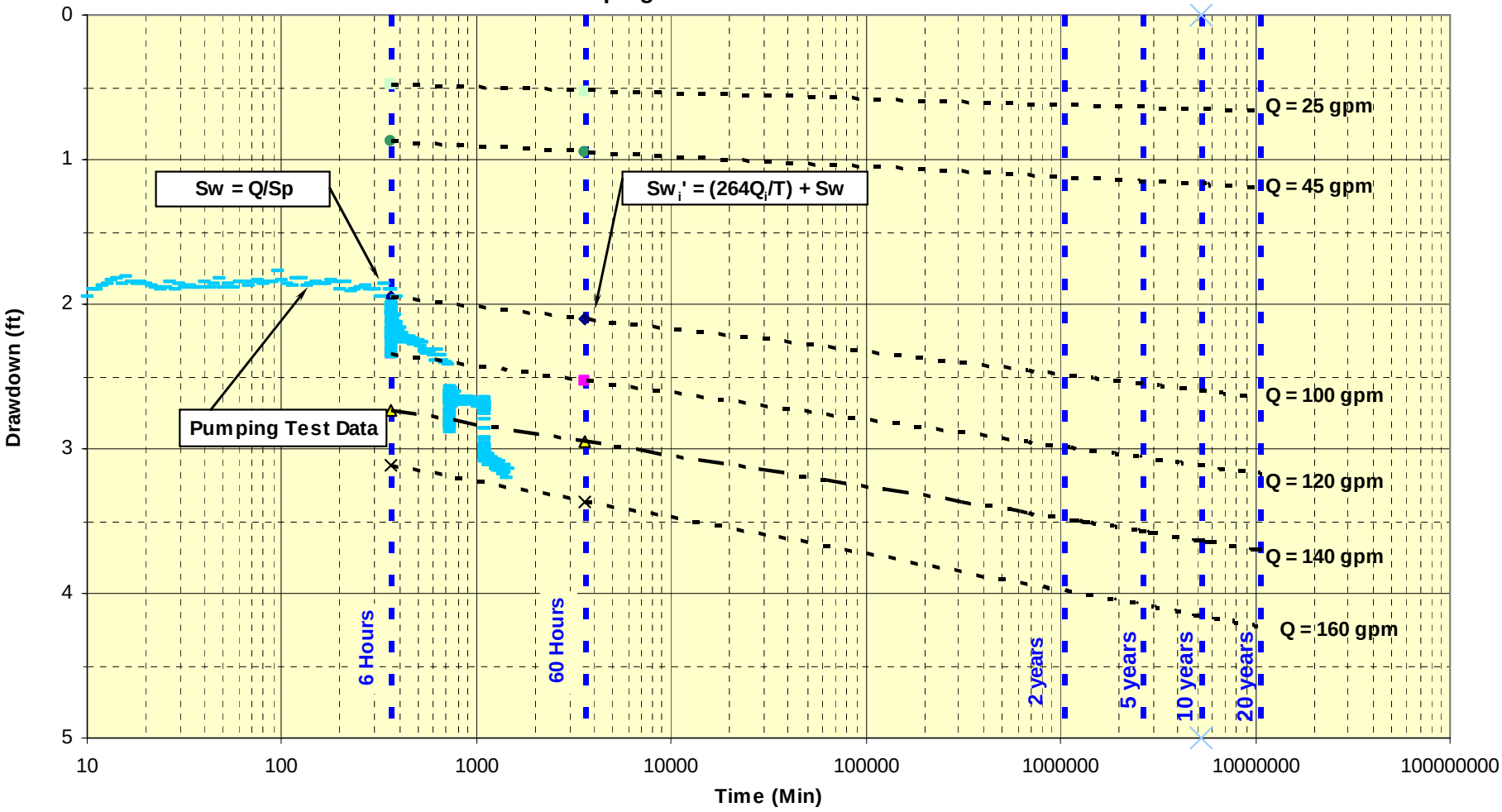


Figure 2
BNSF Well #1
Pumping Drawdown Predictions



Attachment A
Well Construction Details

ROSCOE MOSS COMPANY

4360 WORTH STREET
LOS ANGELES, CAL.

m RM 114

ll No. _____ Job No. 43-487

wner The Atchison Topeka and Santa Fe

ldress Railway Company - 121 East Sixth Street
Suite 747- Los Angeles, California 90014

cation T _____ R _____ Sec. _____
¼ ¼ ¼

pprox. 50' West and 15' South of Existing Well
Cadiz, California

arted Work May 16, 1978

ompleted Work June 7, 1978

otal Depth Drilled 510

epth Water First Encountered _____

MATERIALS

Conductor Casing

terial Mild Steel

ameter (OD) 20 in. Wall Thickness 5/16 in.

stalled From 0 ft. To 50 ft.

emented From 0 ft. To 50 ft.

Well Casing

DIAMETER (OD)(ID)	WALL OR GAUGE	MATERIAL	FROM	TO
16"	8 gauge	Double Well Casing	0	510

arter Used 18 ft. of 16"-2 ply 6 wall or gauge

ze Shoe 1-1/4"x12"x16"
Bit Steel Heat Treated

PERFORATIONS

ype of Perforator Used Moss Hydraulic

FROM	TO	WIDTH	LENGTH	HOLES PER FOOT	SQ. INCH PER FOOT
444	250	3/16	2-1/4	7 holes per 4"	

Formation: Mention size of water gravel —

0	ft. to	10	ft. Sand with some gravel
10	" "	37	" Gravel to 3" and sand
37	" "	62	" Hard brown clay, some
62	" "	68	" Gravel and sand
68	" "	126	" Brown sandy clay and g
126	" "	174	" Sand and gravel with
	" "		" some clay
174	" "	198	" Brown sandy clay
198	" "	210	" Sand and gravel
210	" "	220	" Sand, some gravel to 1
220	" "	255	" Sand and gravel to 1"
255	" "	284	" Silty clay and gravel
284	" "	302	" Sand and gravel
302	" "	322	" Gravel and brown sand
322	" "	336	" Brown clay and gravel
336	" "	348	" Sand and gravel
348	" "	360	" Sand with cemented str
360	" "	400	" Gravel and brown sandy
400	" "	422	" Sand and gravel
422	" "	444	" Brown sandy clay &gra
444	" "	455	" Sticky brown clay
455	" "	465	" Brown clay and gravel
465	" "	484	" Sticky brown clay
484	" "	510	" Very fine sand and brov
	" "		" clay
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"
	" "		"

If Well Is Reduced, Indicate:

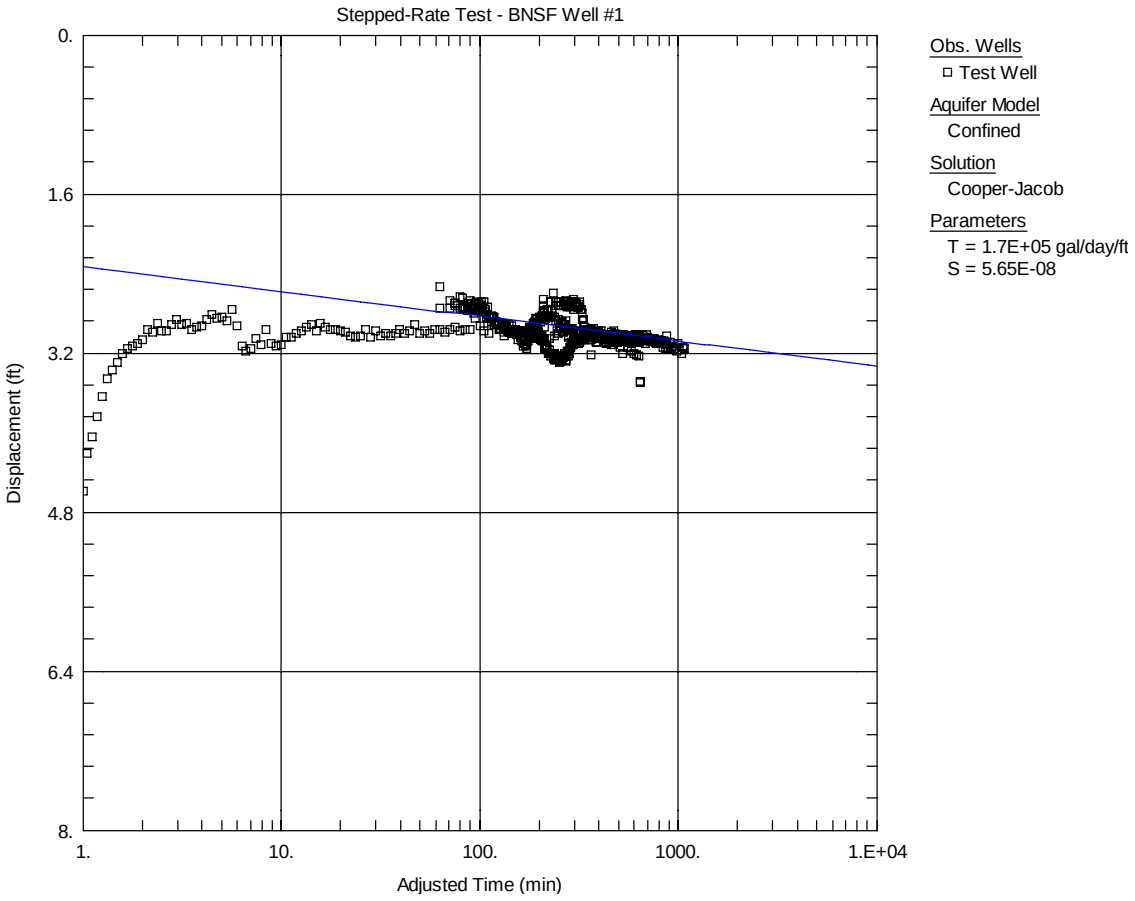
Amount of Lap at Reduction _____ ft.

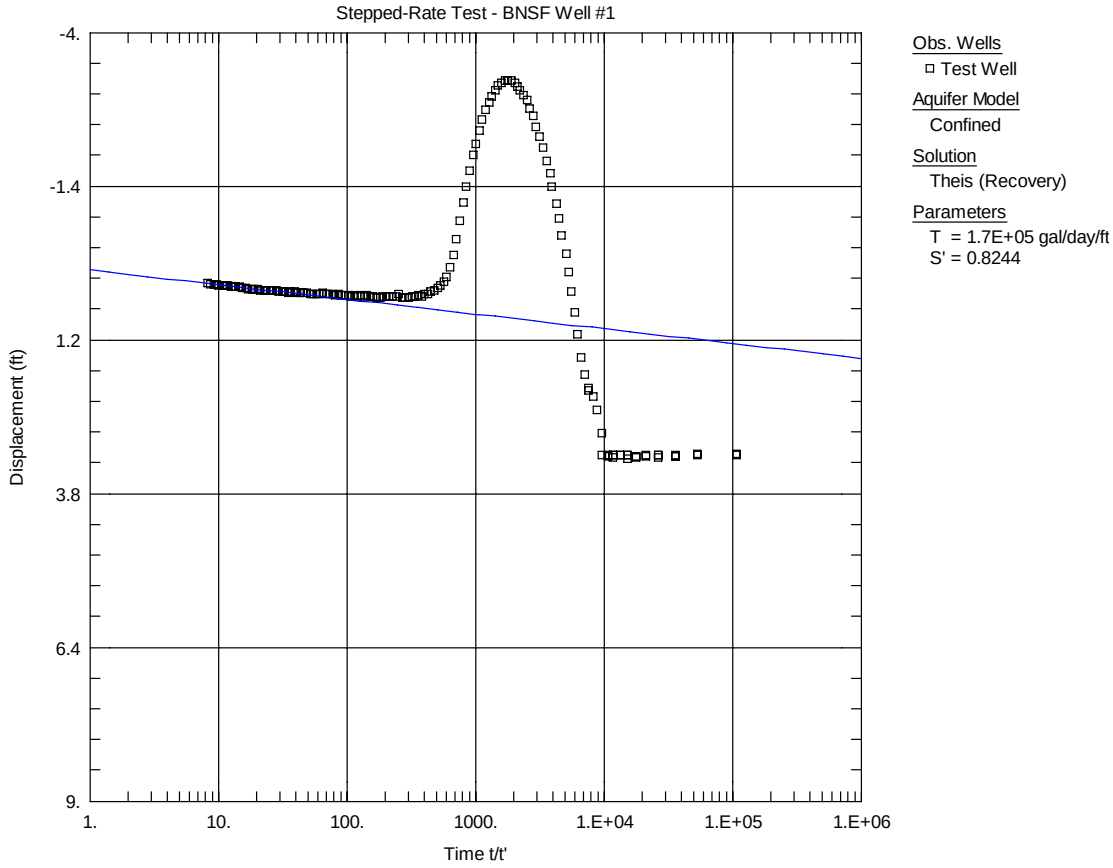
Amount of Lap at Reduction _____ ft.

Amount of lap at Reduction _____ ft.

Method of Sealing at Reduction _____

Attachment B
Analytical Plots


Stepped-Rate Test - BNSF Well #1
0.
1.6
3.2
4.8
6.4
8.
Displacement (ft)
1.
10.
100.
1000.
1.E+04
Adjusted Time (min)
Obs. Wells
Test Well
Aquifer Model
Confined
Solution
Cooper-Jacob
Parameters
T = 1.7E+05 gal/day/ft
S = 5.65E-08


Stepped-Rate Test - BNSF Well #1
-4.
-1.4
1.2
3.8
6.4
9.
Displacement (ft)
1.
10.
100.
1000.
1.E+04
1.E+05
1.E+06
Time t/t'
Obs. Wells
Test Well
Aquifer Model
Confined
Solution
Theis (Recovery)
Parameters
T = 1.7E+05 gal/day/ft
S' = 0.8244

URS

Memorandum

Date: January 15, 2010

To: Christopher Meyer, Jim Stobaugh

From: URS, on behalf of SES Solar One

Subject: **Solar One Additional Information Regarding Project Water Supply**

Enclosed in this memorandum, please find additional information on both the on-site well drilling efforts and the water supply at Cadiz for the Solar One Project. Fieldwork is being conducted on both water sources and this memo contains both data recently collected through the ongoing fieldwork and research conducted by the Applicant.

SES Solar Six, LLC and SES Solar Three, LLC (Applicant) filed an Application for Certification, December 1, 2008 with California Energy Commission (CEC). According to this original filing, potential water sources evaluated for the Project included reclaimed water, surface water, ground water, and obtaining water from a service provider. The water is required for SunCatcher equipment washing, potable water, dust control water and fire protection water as well as for work during construction. Primary fugitive dust suppression during construction would use water from a proposed groundwater well(s). The Applicant estimated that 36.2 acre-feet of water would be used annually for mirror washing and domestic use. The AFC stated that additional water wells will be drilled to augment the primary water well as needed to meet peak construction water demands.

In the first set of data requests, the CEC and BLM asked the Applicant for additional information on the reliability of the Solar One water supply from the ground water well(s). In considering the responses to these questions, an in-depth evaluation of the Solar One water supply options in terms of reliability, cost, and environmental impact was performed. In December 2009, the Applicant submitted supplemental information that summarized the various water source options pursued and a status of each. The Applicant continues to pursue two viable water source options for the SES Solar One Project. Below is a status update on each.

LAVIC GROUNDWATER BASIN

The Applicant identified four potential test well sites on the project site. A preliminary site meeting was conducted with the drillers, the Applicant and survey monitors. Drilling was initiated on the site in late December 2009 on the first test well.

The well is being installed using the mud-rotary drilling technique. Because this method requires that fluids (drilling mud) be added to the boring to facilitate removal of soil cuttings, containment of the fluids is required and disposed upon drilling completion. Rigorous well development to remove the mud cake from the boring walls is also necessary. Non-solid drilling fluids are temporarily contained within a portable storage tank on-site prior to

spreading to allow for separation of the water and solids. The water is discharged to the ground surface once the solids have settled.

As of January 10, 2010, the anticipated depth of 800 feet was reached and water was reached. The well boring has been logged from the drill cuttings and is attached for your review for the first test well.

The Applicant is now performing the water pump test, collecting water samples and submitting those to the lab for analysis. Once that information has been received and recorded, it will be submitted to the CEC and BLM for review.

The drilling equipment has moved to the second well location and has commenced drilling. All necessary environmental surveys, impact assessment, and proposed mitigation measures for these facilities will be submitted to the CEC upon completion.

CADIZ WELL

This report summarizes the results of a data review of water wells located in the vicinity of a water supply well located on property owned by Burlington Northern and Southern Pacific Railroad (BNSF) in Cadiz Valley, California. Cadiz Valley is located approximately 60 miles southeast of the Solar One site (site) located north of Interstate 40 (I-40) west of Ludlow in San Bernardino County, California. The well is located immediately south of the railroad line that extends from Barstow to Needles, California. This is the same rail line that passes just to the south of the Solar One site.

URS has conducted a review of readily available information related to the occurrence and quality of groundwater in the vicinity of Cadiz Valley. Based on a number of sources, the nature and occurrence of groundwater in Cadiz Valley is described below. The information was obtained from the following sources:

- BNSF
- California Department of Water Resources (DWR)
- Metropolitan Water District of Southern California (MWD), Final Environmental Impact
- Report/Final Impact Statement (FEIR/FEIS), dated September 2001
- U.S. Geological Survey (USGS) National Water Information System (NWIS)

Cadiz Ground Water Basin

The BNSF well is located within the Colorado River Hydrologic Basin, similar to groundwater at the Solar One site. The well is located in the Cadiz Hydrologic Unit of the Lucerne Planning Area. The planning area is characterized by basins of internal drainage, with portions of the valley floors covered by dry lakes.

Beneficial Groundwater Uses: The Colorado River Regional Water Quality Control Board (RWQCB) Basin Plan (2006) indicates that groundwater in the Cadiz Hydrologic Unit has municipal, domestic and industrial beneficial uses. It should be noted that Cadiz, Inc. located immediately south of the BNSF well extracts groundwater for agricultural uses to irrigate at least a 1,000 acres of citrus, grapes and other crops (DWR, 2003). According to

DWR, agricultural activities were initiated in the 1980s to show that groundwater is available and sustainable to serve as irrigation water to meet agricultural uses in the valley. Geology and Hydrogeology: The principal aquifer systems identified are an upper alluvial aquifer, a lower alluvial aquifer and a bedrock aquifer. The upper alluvial aquifer consists of Quaternary and late-Tertiary Age stream-deposited sand and gravel with a thickness of approximately 100 to 800 feet (DWR Bulletin 91-14). The lower alluvial aquifer consists of older, sediments of mid- to late-Tertiary age that are interbedded sand, gravel, silt and clay that are generally less permeable than the sediments in the upper alluvial aquifer. The Cadiz, Inc. wells are reported to yield 1,000 to over 2,000 gpm. A lower bedrock aquifer has been identified by Metropolitan in carbonate bedrock. There are numerous faults in these desert groundwater basins and these faults may serve as barriers that restrict groundwater movement and isolate groundwater of different quality.

Groundwater Flow: The FEIR/FEIS indicates that groundwater flow in Cadiz basin is to the southwest toward Bristol Dry Lake and toward the south. There is some disagreement with this interpretation, as faults may serve barriers and flow directions could be very different within individual fault blocks in the basin. However, the FEIR/FEIS indicates that differences in water-level elevations have not been identified in the basin to support this alternate interpretation.

Groundwater Use Estimates: Groundwater use in the Cadiz groundwater basin is reported in DWR Bulletin No. 118 and also appears in the Final EIR/EIS for the Cadiz Groundwater Storage and Dry-year Supply Program, combined with the Bristol groundwater basin. Shafer (1964) reported that 14,300 acre feet (af) of fresh water were pumped from both Bristol and Cadiz Valleys from 1910 through 1964, approximately 265 acre-feet/year (afy). The FEIR assumed that if this rate of water use continued until 1998 an additional 9,000 af were pumped from these valleys between 1964 and 1998. It is likely that the actual water use decreased considerably when locomotives went from being steam- to diesel-powered. It notes that from 1983 through 1998, Cadiz, Inc. extracted 61,740 af from its well field for agricultural operations. The FEIR concludes that that total groundwater pumped from Bristol and Cadiz Valleys from 1910 to 1998 was approximately 85,000 af.

Basin Adjudication: URS has reviewed information appearing on DWR's internet website and contacted personnel at the DWR and RWQCB to understand the status of groundwater use in the Cadiz groundwater basin. There are 22 adjudicated basins in California where groundwater use is regulated and managed by a Watermaster designated by State Superior (21 basins) or Federal Courts (1 basin). Typically the Watermaster is a water purveyor (Water District) that is located within the adjudicated basin. There are no water purveyors in the Cadiz groundwater basin, nor is there indications that it is adjudicated.

Feinstein Senate Bill: Diane Feinstein, U.S Senator from California, introduced legislation in late December 2009 to designate two new national monuments and protect other lands through additional designations throughout the Mojave Desert in response to development pressures in this region. It is known as the California Desert Protection Act of 2010. Establishment of the Mojave Trails National Monument would prohibit development on 941,000 acres of federal land and former railroad company property along a 105-mile stretch of old Route 66 (National Trails Highway), between Ludlow and Needles. The

legislation is expected to be acted upon in this current legislative session in late 2010. The boundaries of the proposed monument are shown on the map provided as Attachment A. Section 520 of the bill addresses native groundwater supplies. It states,
"The director of the Bureau of Land Management shall not access or process any application for a right-of-way for development projects that propose to use native groundwater from aquifers adjacent to the Mojave National Preserve that individually or collectively, in combination with proposed or anticipated projects on private land, require the use of native groundwater in excess of the estimated recharge rate as determined by the United States Geological Survey."

Compiled Well Data

History of Wells in Vicinity: According to BNSF personnel and review of available well data, the earliest installation of wells throughout this area of the Mojave Desert was completed in the late 19th Century with the construction of the transcontinental railroad. A reliable supply of water was needed to generate steam to provide power to locomotives. Cadiz was found to be an area where a reliable water supply of good quality was present, and many wells were located at Cadiz, in addition to a thriving local community. According to BNSF personnel, there have been at least seven wells that operated historically in Cadiz, (Forshee, pers. Comm..,2010). DWR Bulletin 91-14 identifies two wells at Cadiz [Cadiz 1 (5/14-15K1) and 2 (5/14-15L1)]. Cadiz 1 was drilled in 1910 and Cadiz 2 was drilled in 1931. The Cadiz 1 well was 400 feet deep and well yield was reported as 60 and 167 gpm. When DWR measured the depth to water in August 1964, the depth was 208.44 feet [an elevation of approximately 611.5 feet above Mean Sea Level datum (MSL)]. The Cadiz 2 well is was reportedly 541 feet deep and well yields ranged from 20 to 425 gpm. The depth to water was approximately 195.84 when measured in August 1964 (approximately 624.2 feet MSL). According to BNSF personnel, there were two other water wells that were not in use approximately 300 feet north and south of the existing well that were abandoned last year (Forshee, pers. Comm.., 2010). These may have been the Cadiz 1 and 2 wells.

BNSF Cadiz Well Characteristics

Information regarding the BNSF well was provided by BNSF personnel through correspondence and a site visit that was conducted on January 5, 2010. The purpose of the site visit was to observe the condition of the well and identify equipment needed to conduct an aquifer test to confirm information regarding well yield and drawdown, and to estimate long-term drawdown.

Location, Condition and Infrastructure: The existing BNSF well is located within 50 feet of the south side of a railroad line. It is located within a pump house and groundwater is extracted using a turbine-type pump. There is no drop tube for groundwater depth measurements, however an opening was found at the base of the pump that enabled URS to measure the depth of groundwater in the well. According to BNSF personnel, the oil seals in the pump apparatus appear to leak. This was confirmed when URS identified some oil on the water table. The depth of water could not be readily identified due to the presence of oil but it appeared to be approximately 230 feet based on sounding with an electronic water-level indicator. Water is discharged from the pump through a series of valves to a two-inch discharge pipe or a "j stand" that is used to fill water tanks.

Infrastructure near the site that could be used for railcar mobilization for water delivery to the Solar One site include a railroad spur that is infrequently used and a railroad siding. Photographs of the pump and associated equipment are provided in Attachment B.
Well Construction: A log of the well boring and other information provided by BNSF for the existing well are provided in Attachment C. According to the driller's log, the well was installed by Roscoe Moss Company in 1978. We understand that the pumping equipment was updated approximately 7 or 8 years ago. BNSF personnel indicated that the pump would need to be refurbished or replaced to provide a water supply for the Solar One site. The well boring was drilled using the cable-tool method to a depth of 510 feet below the ground surface (bgs). The well casing is constructed of mild steel that is 16 inches in diameter. The well is screened (perforated) from 250 to 444 feet bgs. The openings in the screen are 3/16 inches wide, 2 ¼ inches long with 7 openings for every 4 inches of casing.
Current Use: Because locomotives no longer run on steam, BNSF uses very little groundwater from this well. It uses 1 acre-foot (approximately 326,000 gallons) or less annually for dust control and other railroad operations.

Geology and Aquifer Characteristics: Based on the driller's log, the strata penetrated by the well consist of an interbedded sequence of sand, gravel and clay to the total depth drilled. It appears that the subsurface materials are composed of alluvium and the aquifer is likely to be unconfined. The sequence appears to be composed of primarily coarse-grained materials including gravel and sand.

Depth to Water and Elevation: As indicated above, the depth to water in the BNSF well is approximately 230 feet bgs [approximately 590 feet above Mean Sea Level (MSL) datum]. This is reasonably consistent with the data for the Cadiz 1 and 2 wells appearing in DWR Bulletin No. 91-14.

Well Yield: Information appearing on the development log following installation indicates that the well was pumped at rates between approximately 730 and 1,000 gpm for periods of approximately of 12 to 13 hours. The initial static groundwater level before pumping was approximately 214 feet bgs and drawdown after 12 to 13 hours of pumping was 20 to 30 feet. These pumping rates far exceed the water needs for the Solar One project.

Water Quality: According to BNSF, it regularly tests the groundwater in accordance with California Code of Regulations CCR) Title 22 for drinking water supply sources. We understand that the Total Dissolved Solids (TDS) in the groundwater from its well are on the order of 280 mg/l. The drinking water standard and requirements for potable water supplies is 500 mg/l. Although BNSF did not provide any analytical reports for groundwater quality, some data appear in DWR Bulletin 91-14 for wells in Cadiz in 1964. Other analytical data were obtained from the U.S Geological Survey (USGS) National Water Information System (NWIS) database. These data are provided in Attachment C.

Chambless Wells

Following our site visit, BNSF personnel introduced us to Mr. Walt Chambless. Mr. Chambless owns a well in his community that is located approximately 3 miles to the north of the BNSF well (Figure 1). The following information was provided by Mr. Chambless during our site visit (Chambless, pers. comm., 2010). He sells water from his well for

drinking purposes to residents in the area. He also provides water for construction projects for dust control and compaction. He indicated that the depth of his well is approximately 400 feet bgs and the depth to water is approximately 125 feet. He has the well water tested to meet requirements of CCR Title 22. He has not conducted aquifer testing and the actual yield of his well is not known. However, he reports that the TDS of the water is similar to that observed in the BNSF well. He noted that groundwater quality deteriorates to the west. There is a well located near Kelbaker Road and the National Trails Highway approximately 5 miles to the west of Mr. Chambless' well. He indicated that the well is owned by the owner of the town of Amboy. The depth of the well is not known; however, the water is saline.

Bulletin 91-14 from 1967 indicates that there were nine private wells in the Chambless area when DWR/USGS conducted its well survey in 1964. The wells observed were installed between 1924 and 1964 primarily for domestic use. Well depths reportedly ranged from 48 to 655 feet bgs. Depth to water ranged from approximately 115 to 160 feet bgs, which corresponded to groundwater elevations ranging from approximately 555 to 612 feet above Mean Sea Level datum. Most of the wells were relatively small diameter and well yields were not reported. Well T6N R14 E-31J1 had a reported well yield of 20 gpm. A well owned and operated by Leslie Salt Company (6/14-32M2) had a reported well yield of 300 gpm wells in the Chambless area. The current operational status of these other wells is not known.

Cadiz Groundwater Storage and Dry-year Supply Program

URS obtained an electronic copy of the Final Environmental Impact Report/Final Environmental Impact Statement (FEIR/FEIS) for this proposed project from the Office of General Counsel, The Metropolitan Water District of Southern California (MWD). The FEIR/FEIS was jointly evaluated by MWD and the U.S Bureau of Land Management (BLM). Metropolitan was partnering with Cadiz, Inc. whereby the aquifer beneath Cadiz and adjacent Fenner Valleys would be used to store imported Colorado River water. In dry years the water stored and that already in the aquifer (native groundwater) would be used within MWD's service area. The project was to include infrastructure to deliver Colorado River water to the basin where it would infiltrate in spreading basins. The spreading basin was proposed approximately 1.5 miles east of the BNSF Cadiz well. A network of 15 equally spaced wells were to be located as near as one mile south and east of the BNSF Cadiz well. The purpose of these wells would be to extract groundwater for distribution by Metropolitan during dry years. A map showing these proposed well locations is provided in Attachment D.

The project has been highly controversial and there has been much concern regarding the impacts of groundwater storage and withdrawl on water quality in the Cadiz and adjacent basins. MWD withdrew from the project, but it is our understanding through review of the Cadiz, Inc. website and other internet searches that it is moving forward with permitting the project. A considerable evaluation of groundwater characteristics, quality and availability were completed as part of the FEIR/FEIS process. The details of the evaluation are not included in the FEIR/FEIS, and we understand due to ongoing litigation, these data are not available.

According to the FEIR/FEIS, there are three existing wells immediately south of the BNSF well, with the nearest being approximately 1 mile away. Well depths, yields and aquifer characteristics are not known, however, it would appear that the characteristics would be expected to be very similar to the BNSF well, since the aquifer was being considered for storage and extraction of large volumes of imported water. The FEIR/FEIS indicates that Cadiz, Inc. was extracting 5,000 to 6,000 afy from the Bristol and Cadiz basins for its agricultural operations in the valley.

CONCLUSIONS AND RECOMMENDATIONS

At the request of the Applicant, URS is currently conducting an aquifer test on the Cadiz BNSF well to confirm well yield and drawdown. The test began on January 10, 2010. A "stress test" was conducted at 100 gpm to identify an approximate test pumping rate followed by step testing and successively higher rates of 120, 140 and 160 gpm for a period of 24 hours. Drawdown was monitored using a pressure transducer in the pumping well. The maximum drawdown during the 24-hour test has been approximately 3.5 feet. Water levels will also be monitored once the pump is turned off during the recovery phase. Because there are no wells in the immediate area, there were no observation wells that were monitored during the test. The results of the test will be used to estimate long-term drawdown resulting from using water from this well as a water supply for the Solar One site. A letter report summarizing the results of the aquifer testing will be submitted to the Applicant and agencies in approximately one week. Based on this preliminary data , the small drawdown suggests that the well is a good production well that can be pumped at rates that far exceed the water demand for the Solar One site. Because of the favorable conditions at Cadiz, this source will be pursued as the primary water source for the Solar One Project. Additional analysis will be submitted to the CEC and BLM as soon as it is available.

Additionally, once the first well is installed on the Solar One site, URS will conduct the same test and alnalyses. The Applicant will forward additional information on the viability of the on-site wells once it is obtained. This water source will be continued to be pursued as a back up.

Attachments:
References
Figure 1: Well Location Map
Attachment A: Driller's Geolog - On-site Well
Attachment B: Map of Monument Area
Attachment C: Photographs
Attachment D: Historical Information on Cadiz Well
Attachment E: Excerpts from FEIR/FEIS for Cadiz Groundwater Storage and Dry-year Supply Program

REFERENCES

California Department of Water Resources (DWR), 2010, Groundwater data, http://wdl.water.ca.gov/gw/map/scal.cfm, accessed January.

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California Regional Water Quality Control Board (RWQCB), Colorado River Region, 2006, Water Quality Control Plan for the Colorado River Basin, December.

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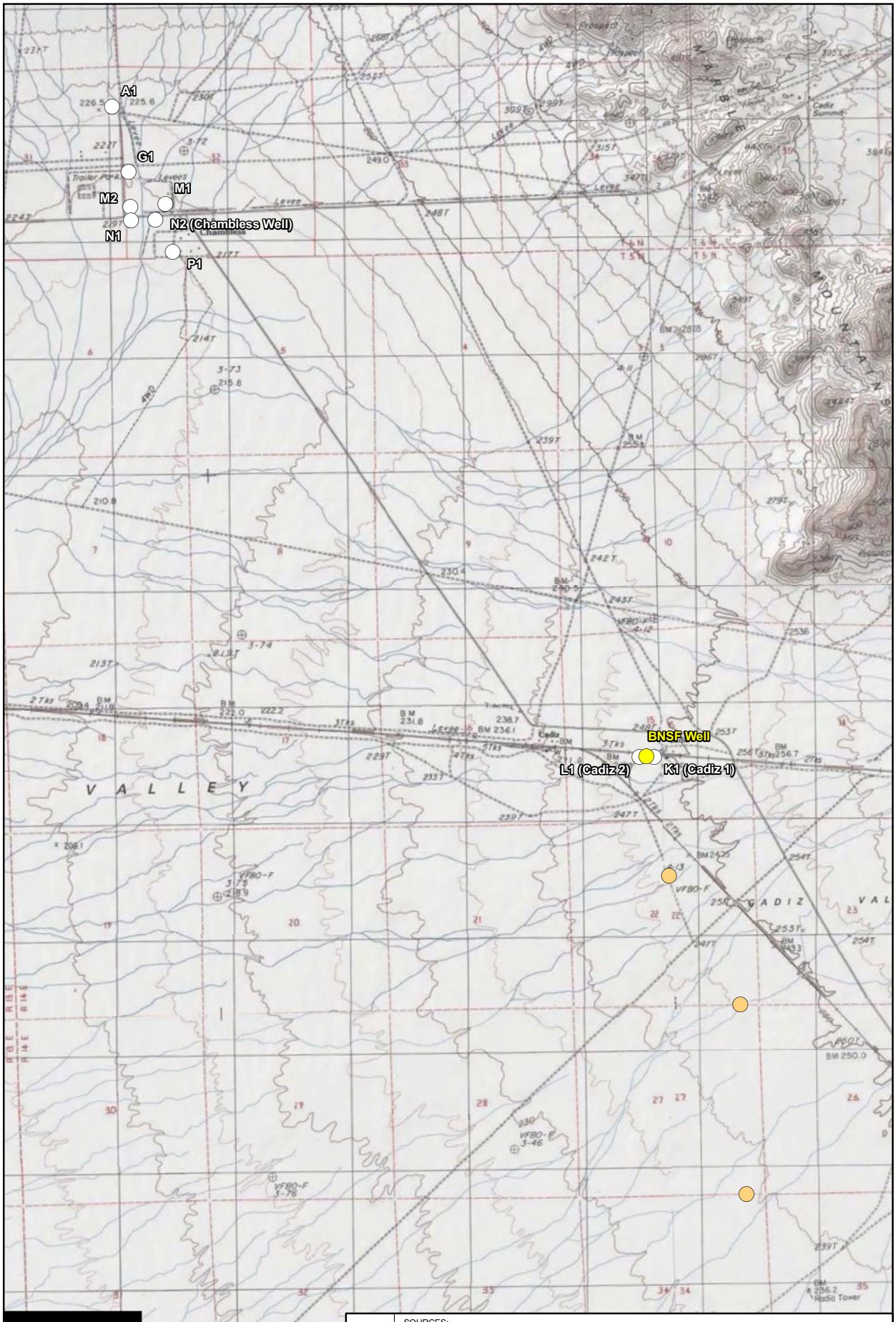
United States Geological Survey (USGS), 2009, National Water Information System, Water Quality Samples for the Nation, http://nwis.waterdata.usgs.gov/nwis/qwdata/, accessed December 2009 and January 2010.



LEGEND

- BNSF Well
- Cadiz Inc Well
- Wells appearing In DWR Bulletin No. 91-14

SOURCES:
USGS (CADIZ 1985, CADIZ SUMMIT 1986, CALUMET MINE 1986, CADIZ LAKE NW 1986)

WELL LOCATION MAP
BNSF AND CADIZ WELLS
SOLAR ONE PROJECT

URS

1250 0 1250 2500 Feet
SCALE: 1" = 2500' (1:30,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: RC	DATE: 01-14-09	FIG. NO: 1
PM: RKS	PROJ. NO: 27658188.40001	

Path: G:\gis\misc\ArcMAP_Layouts\11x17\pmxd, 01/21/09, camille_hill

Attachment A

Water Well #1 - 1701 - Calico/Voight Well Log

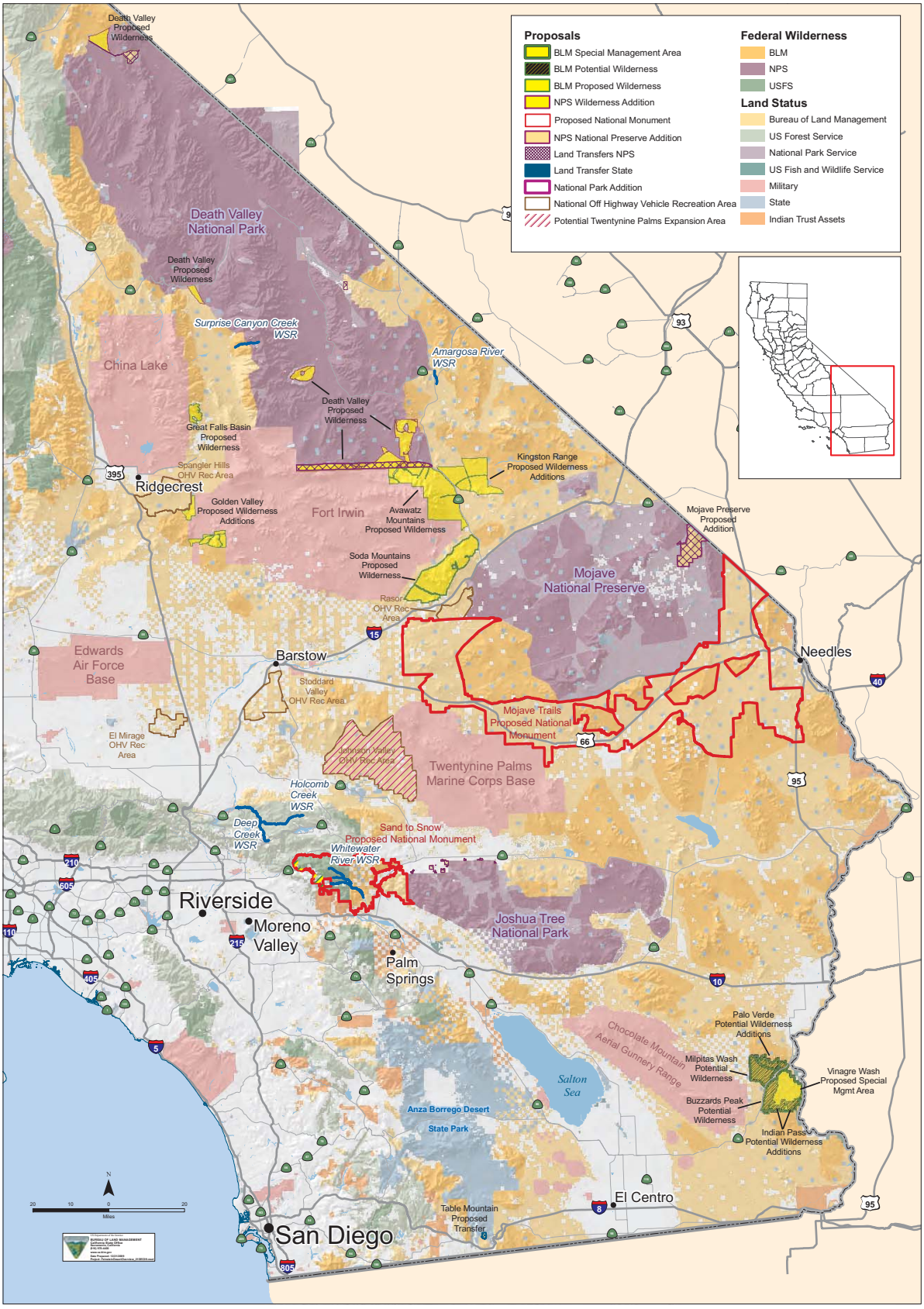
Depth	Material
01 - 20ft	soft sand & 2-4" loose rock
20 - 40ft	harder sand & smaller rock
40 - 60ft	light sand stone with small rock
60 - 65ft	black lava rock
65 - 80ft	sand stone with 6" rock formations
80 - 115ft	short rock formations with sand stone in between
115 - 125ft	hard sand stone
125 - 140ft	sand stone
140 - 145ft	hard rock
145 - 150ft	hard sand stone
150 - 152ft	hard black lava rock
152 - 160ft	light sand stone
160 - 168ft	light sand stone
168 - 170ft	hard red rock
170 - 190ft	light sand stone
190 - 220ft	lighter sand stone
220 - 240ft	lighter sand stone
240 - 265ft	lighter sand stone
265 - 270ft	hard sand stone
275 - 280ft	hard granite with quartz
280 - 290ft	granite with heavy quartz
290 - 300ft	granite with heavy quartz
300 - 320ft	hard granite
320 - 345ft	hard granite
345 - 365ft	hard granite
365 - 380ft	hard granite
380 - 390ft	hard granite
390 - 400ft	granite with a little clay
400 - 420ft	hard sandy clay
420 - 440ft	hard sandy clay
440 - 450ft	black lava rock
450 - 460ft	hard granite with a little clay
460 - 475ft	hard clay with granite
475 - 500ft	hard clay with granite
500 - 520ft	granite with black and red lava
520 - 540ft	granite with black and red lava
540 - 560ft	granite with black and red lava
560 - 580ft	granite with black and red lava
580 - 600ft	little softer granite
600 - 610ft	little softer sand
610 - 620ft	hard granite
620 - 640ft	black lava rock

640 - 660ft	granite with clay
660 - 680ft	hard clay
680 - 700ft	hard clay with black rock - more rock then clay
700 - 720ft	black rock hard
720 - 730ft	little clay with hard rock - 725-727 hard granite
730 - 740ft	hard granite
740 - 760ft	hard granite with little more rock - 755-756 hard rock
760 - 770ft	clay with granite
770 - 780ft	hard clay
780 - 790ft	hard clay with little granite
790 - 792ft	hard rock
792 - 798ft	sand
798 - 802ft	soft sticky clay

Attachment B

2010 California Desert Protection Act Overview
December 21, 2009

This map prepared at the request of Senator Dianne Feinstein



Attachment C

Photograph #69

Date: 01/05/2010

Comments:
Area where water from aquifer test was discharged, approximately 300 feet from pumphouse. Location of drainage swale.

Photograph #70

Date: 01/05/2010

Comments:
Area where water from aquifer test was discharged, approximately 300 feet from pumphouse. Location of drainage swale.

Photograph #71

Date: 01/05/2010

Comments:
Cadiz well pump. turbine-type pump.

Photograph #72

Date: 01/05/2010

Comments:
Valve used to regulate flow.

Photograph #73

Date: 01/05/2010

Comments:
Base of J stand on east wall of pumphouse used to fill water trucks. There is a 2-inch diameter bypass at base of J stand to which 300 feet of hose was attached in order to discharge water during pump test.

Photograph #74

Date: 01/05/2010

Comments:
3/4-inch opening inside base of pump at right used to measure water levels during pumping.

Attachment D

ROSCOE MOSS COMPANY

4360 WORTH STREET
LOS ANGELES, CAL.

m RM 114

ll No. _____ Job No. 43-487

wner The Atchison Topeka and Santa Fe

ddress Railway Company - 121 East Sixth Street
Suite 747- Los Angeles, California 90014

ocation T _____ R _____ Sec. _____
¼ ¼ ¼

pprox. 50' West and 15' South of Existing Well
Cadiz, California

arted Work May 16, 1978

ompleted Work June 7, 1978

otal Depth Drilled 510

epth Water First Encountered _____

MATERIALS

Conductor Casing

aterial Mild Steel

iameter (OD) (ID) 20 in. Wall Thickness 5/16 in.

stalled From 0 ft. To 50 ft.

emented From 0 ft. To 50 ft.

Well Casing

DIAMETER (OD)(ID)	WALL OR GAUGE	MATERIAL	FROM	TO
16"	8 gauge	Double Well Casing	0	510

tarter Used 18 ft. of 16"-2 ply 6 ~~XXX~~ or gauge

ize Shoe 1-1/4"x12"x16"
Bit Steel Heat Treated

PERFORATIONS

ype of Perforator Used Moss Hydraulic

FROM	TO	WIDTH	LENGTH	HOLES PER FOOT	SQ. INCH PER FOOT
444	250	3/16	2-1/4	7 holes per 4"	

Formation: Mention size of water gravel —

0	ft. to	10	ft.	Sand with some gravel
10	" "	37	"	Gravel to 3" and sand
37	" "	62	"	Hard brown clay, some
62	" "	68	"	Gravel and sand
68	" "	126	"	Brown sandy clay and gr
126	" "	174	"	Sand and gravel with
	" "		"	some clay
174	" "	198	"	Brown sandy clay
198	" "	210	"	Sand and gravel
210	" "	220	"	Sand, some gravel to 1
220	" "	255	"	Sand and gravel to 1"
255	" "	284	"	Silty clay and gravel
284	" "	302	"	Sand and gravel
302	" "	322	"	Gravel and brown sandy
322	" "	336	"	Brown clay and gravel
336	" "	348	"	Sand and gravel
348	" "	360	"	Sand with cemented str
360	" "	400	"	Gravel and brown sandy
400	" "	422	"	Sand and gravel
422	" "	444	"	Brown sandy clay &grav
444	" "	455	"	Sticky brown clay
455	" "	465	"	Brown clay and gravel
465	" "	484	"	Sticky brown clay
484	" "	510	"	Very fine sand and brow
	" "		"	clay
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	
	" "		"	

If Well Is Reduced, Indicate:

Amount of Lap at Reduction _____ ft.

Amount of Lap at Reduction _____ ft.

Amount of lap at Reduction _____ ft.

Method of Sealing at Reduction _____

Give any additional data which may be of future value _____

Conductor Casing

aterial Mild Steel

iameter ~~(OD)~~ (ID) 20 in. Wall Thickness 5/16 in.

stalled From 0 ft. To 50 ft.

emented From 0 ft. To 50 ft.

Well Casing

DIAMETER ~~(OD)~~(ID)	WALL OR GAUGE	MATERIAL	FROM	TO
16"	8 gauge	Double Well Casing	0	510

tarter Used 18 ft. of 16"-2 ply 6 ~~wall~~ or gauge

ize Shoe 1-1/4"x12"x16" Bit Steel Heat Treated

PERFORATIONS

ype of Perforator Used Moss Hydraulic

FROM	TO	WIDTH	LENGTH	HOLES PER FOOT	SQ. INCH PER FOOT
444	250	3/16	2-1/4	7 holes per 4"	

Development & Test Record

Was Well Swabbed? Yes

Method Cable Tool

No. of Hours 13

Total Material Removed 165'

Water level when Test first started 207 ft.

Draw down from standing level 15 ft.

No. of gallons per minute pumped when Test first started 530

No. of gallons per minute pumped when Test completed 1200

Draw down at completion of Test 28 ft.

Hours Testing Well 55

336	" " 348	"	Sand and gravel
348	" " 360	"	Sand with cemented str
360	" " 400	"	Gravel and brown sandy
400	" " 422	"	Sand and gravel
422	" " 444	"	Brown sandy clay &grav
444	" " 455	"	Sticky brown clay
455	" " 465	"	Brown clay and gravel
465	" " 484	"	Sticky brown clay
484	" " 510	"	Very fine sand and brow
	" "	"	clay
	" "	"	
	" "	"	
	" "	"	
	" "	"	
	" "	"	
	" "	"	
	" "	"	
	" "	"	
	" "	"	
	" "	"	
	" "	"	
	" "	"	

If Well Is Reduced, Indicate:

Amount of Lap at Reduction _____ ft.

Amount of Lap at Reduction _____ ft.

Amount of lap at Reduction _____ ft.

Method of Sealing at Reduction _____

Give any additional data which may be of future value _____

Driller Jack Cannon

Date of Report June 14, 1978

Type and Rig No. Used Cable Tool # 43

WELL DEVELOPMENT LOG

WELL NAME _____ PUMPER Randy Ferreira & Steve F.

LOCATION Cadiz DISCHARGE 8" ORIFICE 4¾ P6¼ open

AIRLINE 282 ft

TIME	SURGES	BACKWASH HIGH / LOW	SAND & COLOR AFTER SURGE											RPM
			TIME	5	10	15	20	25	30	45	60			
0630			SAND	2.2	2.6	1.5	1.4	.9	.6	.35	.19			
0700			COLOR	MED	HVY	MED	MED	MED	MED	HAZY	HAZY			1325
			SAND			.15			.22	.09	.07			
0800	0		COLOR			HAZY			HAZY	CLR	CLR			1325
		INCREASE	SAND	.12	.15	.15	.24	.3	.25	.14	.14			
0900	0	RPM	COLOR	CLR	CLR	CLR	HAZY	HAZY	HAZY	CLR	CLR			1350
			SAND			.12			.12	.1	.08			
1000	0		COLOR			CLR			CLR	CLR	CLR			1350
		202	SAND	1.7	1.1	.8	.6	.35	.5	.4	.4			
* 1110	1	214	COLOR	HVY	MED	HAZY	HAZY	HAZY	HAZY	HAZY	HAZY			1425
		[redacted]	SAND			.19			.11	.09	.07			
1210	0	[redacted]	COLOR			CLR			CLR	CLR	CLR			1425
		INCREASE	SAND	.15	.11	.15	.10	.14	.1	.1	.11			
1310	0	RPM	COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR			1450
		INCREASE	SAND	.13	.09	.1	.11	.09	.09	.08	.06			
1410	0	RPM.	COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR			1460
		INCREASE	SAND	.12	.13	.1	.08	.06	.06	.07	.06			
1510	0	RPM	COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR			1475
		204	SAND	24	.55	42	.3	.2	1.4	1.8	.7			
1615	1	215	COLOR	HVY	HAZY	HAZY	HAZY	HAZY	MED	MED	HAZY			1490
			SAND			.25			.6	.7	1.			
1715	0		COLOR			HAZY			HAZY	CLR	HAZY			1490

WATER LEVEL RECOVERY AFTER PUMPING

TIME	5	10	15										
LEVEL													

WELL PRODUCTION

TIME	ORIFICE READING	GPM	PUMPING LEVEL	STATIC LEVEL	DRAW DOWN	SPECIFIC YIELD
0800	69	530	229	214	15	35.3
0900	71	538	228	214	14	38.4
1000	90	607	230 ~~229~~	214	16	37.9
1100	90	607	229	214	15	40.4
1210	11	650	234	214	20	32.5
1310	11	650	232	214	18	36.1
1410	12½	692	235	214	21	32.9
1510	13	708	234	214	20	35.4
1610	13½	720	235	214	21	34.2
1715	14½	745	234	214	20	37.2
1815	14½	745	234	214	20	37.2

HOURS PUMPED THIS SHEET	11:45
TOTAL HOURS PUMPED ON WELL	11:45

REMARKS *CHANGE to 6¼" orifice. WHEN old well is pumping, pumping level on this well goes down 1 foot.

WELL DEVELOPMENT LOG

WELL NAME _____ PUMPER _____

LOCATION Cadiz DISCHARGE 8" ID ORIFICE 6½ open

TIME	SURGES	BACKWASH HIGH / LOW	SAND & COLOR AFTER SURGE											WELL PRODUCTION						
			TIME	5	10	15	20	25	30	45	60		RPM	TIME	ORIFICE READING	GPM	PUMPING LEVEL	STATIC LEVEL	DRAW DOWN	SPECIFIC YIELD
18 15	C		SAND			.9			.55	45	25			19 15	14½	745	234	214	20	37.2
			COLOR			HAZY			HAZY	CLR	CLR		1490							
19 15	O		SAND			.19			.11					19 45	14½	745	234	214	20	37.2
			COLOR			CLR			CLR				1490							
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	

WATER LEVEL RECOVERY AFTER PUMPING

TIME	5	10	15										
LEVEL	15	14											

HOURS PUMPED THIS SHEET	1:40
TOTAL HOURS PUMPED ON WELL	13:25

REMARKS

WELL DEVELOPMENT LOG

Air line 282 ft

WELL NAME _____ PUMPER Randy & Steve

LOCATION Cadiz DISCHARGE 8" ID ORIFICE 6½ open

TIME 0630	SURGES	BACKWASH HIGH / LOW	SAND & COLOR AFTER SURGE: TIME	5	10	15	20	25	30	45	60	90	RPM	WELL PRODUCTION: TIME	ORIFICE READING	GPM	PUMPING LEVEL	STATIC LEVEL	DRAW DOWN	SPECIFIC YIELD
0700	0	214	SAND	1.2	.35	.19	.1	.09	.06	.05	.05			0800	14	732	234	214	20	36.7
			COLOR	med	HAZY	HAZY	CLR	CLR	CLR	CLR	CLR		1490							
0800	0	INCREASE	SAND	.09	.1	.08	.05	.06	.07	.1	.1			0900	16½	795	235	214	21	37.8
		RPM	COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1510							
0900	0	INCREASE	SAND	.06	.7	.6	.29	.25	.25	.22	.2	.2		1030	19½	865	237	214	23	37.6
		RPM	COLOR	HAZY	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	CLR	1530							
1030	0		SAND			.5			.55	.28	.13			1130	19½	865	237	214	23	37.6
			COLOR			HAZY			CLR	CLR	CLR		1530							
1130	0	INCREASE	SAND	.26	.32	.21	.19	.18	.18	.17	.12			1230	20½	885	237	214	23	39.4
		RPM.	COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1550							
1230	0	INCREASE	SAND	.15	.19	.23	.21	.2	.29	.42	.62	.7		1400	22½	930	238	214	24	38.7
		RPM.	COLOR	CLR	CLR	CLR	CLR	CLR	CLR	HAZY	HAZY	HAZY	1575							
1400	0		SAND			.31			.12					1430	22½	930	238	214	24	38.7
			COLOR			CLR			CLR				1575							
1430	0	INCREASE	SAND	.4	.55	.4	.37	.3	.39	.35	.3	.31		1600	26½	1000	239	214	25	40.
		RPM.	COLOR	HAZY	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	CLR	1610							
1600	0	DECREASE	SAND			.45			.19	.2	.21	.14		1730	15	760	232	214	18	42.2
		RPM	COLOR			HAZY			CLR	CLR	CLR	CLR	1480							
1735	1		SAND	1.8	1.2	1.2	.7	.55	.55	.45	.4	.2		1905	25½	990	241	214	27	36.6
			COLOR	HUY	MED	HAZY	HAZY	HAZY	CLR	CLR	CLR	CLR	1600							
1905	0	207	SAND			.11			.09	.09				1950	25½	990	240	214	26	38.0
			COLOR			CLR			CLR	CLR			1600							

WATER LEVEL RECOVERY AFTER PUMPING

TIME	5	10											
LEVEL	215	214											

HOURS PUMPED THIS SHEET	13:30
TOTAL HOURS PUMPED ON WELL	26:55

REMARKS _____

WELL DEVELOPMENT LOG

Airline 282 ft

WELL NAME _____ PUMPER Randy + Steve

LOCATION Cadiz DISCHARGE 8 ID ORIFICE 6 1/2 open

TIME 8:30	SURGES	BACKWASH HIGH / LOW	SAND & COLOR AFTER SURGE: TIME	5	10	15	20	25	30	45	60	90	RPM
0700		214	SAND	1.3	.50	.30	.22	.24	.18	.12	.09	.06	
			COLOR	HAZY	HAZY	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	1575
0830	0		SAND			.05			.11	.08	.05	.03	
			COLOR			CLR			CLR	CLR	CLR	CLR	1575
1000	0	Increase	SAND	.40	.20	.45	.38	.34	.32	.8	.35	.34	
		RPM	COLOR	CLR	CLR	CLR	CLR	CLR	CLR	HAZY	CLR	CLR	1625
1130	0		SAND			1.7			.65	.43	.26	.14	
			COLOR			CLR			CLR	CLR	CLR	CLR	1625
1300			SAND	.20		.20			.16				
			COLOR	CLR		CLR			CLR				1625
* 1340	1		SAND	1.3	.60	.40	.39	.41	.49	.25	.25	.12	
			COLOR	HAZY	HAZY	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	1700
1510	0		SAND			.13			.1	.18	.09		
			COLOR			CLR			CLR	CLR	CLR		1700
1615	1	207	SAND	1.6	.42	.22	.31	.32	.19	.15	.14	.1	
		214	COLOR	MED	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	CLR	1750
1750	1	306	SAND	1.1	.4	.22	.19	.2	.53	.33	.3	.3	
		214	COLOR	MED	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	1800
1930	0		SAND			.19			.1				
			COLOR			CLR			CLR				1800
			SAND										
			COLOR										

WELL PRODUCTION: TIME	ORIFICE READING	GPM	PUMPING LEVEL	STATIC LEVEL	DRAW DOWN	SPECIFIC YIELD
0830	23	938	238	214	24	39.0
1000	22 1/2	930	238	214	24	38.7
1130	28 1/2	1045	242	214	28	37.3
1300	28 1/2	1045	242	214	28	37.3
1330	28 1/2	1045	242	214	28	37.3
1510	34	1140	244	214	30	38.
1610	33 1/2	1135	244	214	30	37.8
1745	38 1/2	1220	245	214	31	39.3
1920	40 1/2	1250	246	214	32	39.0
1950	40 1/2	1250	246	214	32	39.0

WATER LEVEL RECOVERY AFTER PUMPING		
TIME	5	10
LEVEL	215	214

HOURS PUMPED THIS SHEET	13:30
TOTAL HOURS PUMPED ON WELL	40:25

REMARKS * Running two engines

WELL DEVELOPMENT LOG

WELL NAME _____ PUMPER Randy & Steve

LOCATION Cadiz DISCHARGE 8 ID ORIFICE 6¼ open

Airline 282 FT

TIME 0800	SURGES	BACKWASH HIGH / LOW	SAND & COLOR AFTER SURGE	TIME	5	10	15	20	25	30	45	60	90	RPM
0830	0	214		SAND	1.2	.18	.16	.15	.20	.19	.14	.14	.01	
				COLOR	MED	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	1740
0900	0			SAND			.08			.03	.02			
				COLOR			CLR			CLR	CLR			1740
0910	1	208		SAND	1.4	.35	.15	.11	.11	.18	.07	.04		
		215		COLOR	HAZY	HAZY	CLR	CLR	CLR	CLR	CLR	CLR		1740
1020	1	207		SAND	.52	.19	.12	.09	.12	.07	.07	.06		
		215		COLOR	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1740
1130	1	208		SAND	.36	.12	.09	.09	.06	.06	.04	.05		
		215		COLOR	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1740
1235	1	208		SAND	.5	.1	.1	.08	.07	.05	.04	.05		
		215		COLOR	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1740
1315	1			SAND	.5	.18	.1	.07	.05	.04	.02	.02	.01	
				COLOR	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	1740
				SAND			CURVE							
				COLOR										
1530				SAND	.30	.09	.05	.08	.05	.03	.03	.02		
				COLOR	HAZY	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1740
1630				SAND	.01	.01	TRC	TRC	TRC	TRC	TRC	TRC		
				COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1600
1730				SAND	.01	TRC	TRC	TRC	TRC	TRC	TRC	TRC		
				COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1500

TIME	WELL PRODUCTION ORIFICE READING	GPM	PUMPING LEVEL	STATIC LEVEL	DRAW DOWN	SPECIFIC YIELD
0900	35½	1160	243	214	29	40.
0900	35	1155	243	214	29	39.8
1010	36½	1175	242	214	28	41.9
1120	37	1190	242	214	28	42.5
1230	37½	1200	242	214	28	42.8
1335	38	1210	242	214	28	43.2
1515	38	1210	242	214	28	43.2
1630	37½	1200	242	214	28	42.8
1730	24	960	236	214	22	43.6
1830	15	760	232	214	18	42.2

WATER LEVEL RECOVERY AFTER PUMPING

TIME														
LEVEL														

HOURS PUMPED THIS SHEET	12:30
TOTAL HOURS PUMPED ON WELL	52:55

REMARKS

WELL DEVELOPMENT LOG

WELL NAME Airline 282ft

LOCATION Cadiz

PUMPER Kelly & Steve

DISCHARGE 8ID ORIFICE 4" open

TIME	SURGES	BACKWASH HIGH / LOW	SAND & COLOR AFTER SURGE (CURVE)										WELL PRODUCTION						
			TIME	5	10	15	20	25	30	45	60		RPM	TIME	ORIFICE READING	GPM	PUMPING LEVEL	STATIC LEVEL	DRAW DOWN	SPECIFIC YIELD
1830			SAND	TRC	TRC	TRC	TRC	TRC	Ø	Ø	Ø			1930	75	550	225	214	11	50
			COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1300							
1930			SAND	TRC	TRC	Ø	Ø	Ø	Ø	Ø	0			2030	25	~~520~~ ~~540~~	221	214	7	~~45.7~~ ~~45.5~~
			COLOR	CLR	CLR	CLR	CLR	CLR	CLR	CLR	CLR		1200							
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	
			SAND																	
			COLOR																	

WATER LEVEL RECOVERY AFTER PUMPING

TIME	5										
LEVEL	214										

HOURS PUMPED THIS SHEET: 2:05

TOTAL HOURS PUMPED ON WELL: 55 hrs

REMARKS

Attachment C

14

STATE OF CALIFORNIA
The Resources Agency
Department of Water Resources

BULLETIN No. 91-14

WATER WELLS AND SPRINGS IN BRISTOL, BROADWELL, CADIZ, DANBY, AND LAVIC VALLEYS AND VICINITY

SAN BERNARDINO AND RIVERSIDE COUNTIES CALIFORNIA

Prepared by
United States Department of Interior
Geological Survey

FEDERAL-STATE COOPERATIVE GROUNDWATER INVESTIGATIONS

AUGUST 1967

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources

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T6N, R14E S32

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point: Description	Measuring point: Distance above or below(-) lsd (feet)	Altitude of lsd (feet)	Water level below lsd (feet)	Other data
T. 5 N., R. 14 E.														
5/14-15K1	GS	8-20-64	Atchison, Topeka, and Santa Fe Railway, Cadiz 1	1910	400	C (q)	T 10		RR	Tap	1.5	820	208.44	C,L,W
Cadiz 1	0	1-22-29						167						
	0	1910						60						
	DWR-15X1													
15L1	GS	8-20-64	Atchison, Topeka, and Santa Fe Railway, Cadiz 2	1931	541	C (r)	T 10		RR	Tap	3.0	820	195.84	C,L,W
Cadiz 2	DWR	5-10-54						20						
	0	2----36						425						
	0	11----32						240						
	0	6----31						390						
	DWR-15X2													
T. 5 N., R. 15 E.														
5/15-4X1	GS	8-19-64	Atchison, Topeka, and Santa Fe Railway, Siam 1	1903	0	N	N N		Ds			1,040		
	0	6-21-03		1903	895	C 13	L	60	RR	Tc	1.0		399	C,L
	DWR-34X2													
	DWR-4X1													
	DWR-4B1													
	M-181													
4X2	GS	8-19-64	Atchison, Topeka, and Santa Fe Railway, Siam 2	1907	0	N	N N		Ds			1,080		L
	0	1915		1907	888	C 12		37	RR	Lsd	0		420	
	DWR-34X1													
	DWR-4X1													
	DWR-4B2													
	DWR-4X2													
	M-181													
7B1	GS	10- 6-64			29.1	D 72	N N		Ds	Tc	0	1,520	(a)	
T. 6 N., R. 6 E.														
6/6-4G1	GS	8- 4-64	U.S. Navy		0	N	N N		Ds			1,960		C
	DGT	11-27-17	Sunshine Mill		125	D	E	30	In	Lsd	0		85	
20NS1	GS	8- 5-64	U.S. Navy						Un			2,630	(a)	
	W-24	1910	Peacock Spring					1	Dm				(s)	
	M-178	1908												

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point: Description	Measuring point: Distance above or below(-) lsd (feet)	Altitude of lsd (feet)	Water level below lsd (feet)	Other data
T. 6 N., R. 12 E.--Continued														
6/12-35F1	GS DWR DWR DWR	8-12-64 3- 5-57 9-30-55 9-24-55	H. B. Burris, Amboy 2	1955	284	16	G	160	In	Tc	3.0	790	(b) c287 187.0	C
T. 6 N., R. 13 E.														
6/13-3A1	GS	8-14-64	Castle Mine		28.0	D 72	L H		Un	Tc	0	2,240	8.23	
3A2	GS	8-14-64	Castle Mine			D	Si Gr	.12	Un			2,240	(s)	
18L1	GS	8-18-64			49.5	D 96	N N		Ds	Tc	0	1,520	(a)	
31P1	GS	8-12-64			19.0	D 120	N N		Ds	Tcc	0	824	(a)	
36M1	GS	8-19-64	H. B. Burris			R	T N		Un	Tap	2.0	800	204.04	
36P1	GS GS	8-19-64 8-19-64	R. Tull	1960	449	R 12	S ½	13	Dm	Bhc	1.0	770	t162.65 c167.96	
T. 6 N., R. 14 E. = Chambless Area														
6/14-31A1	GS	8-20-64	Frank McConnell	1924	154	12	S 3/4		Dm	Tcc	0	750	(f)	C
31J1	GS FC	10- 7-64 1-16-61	J. E. Easley	1960	270	12		12	Dm Dm			740		C
32E1	GS	8-20-64	Ruben Lomelli		280	R 8	J 1½		Dm	Tcc	1.0	735	123.61	C
32M1	GS	8-20-64	J. C. Limon	1961	248	8	S 5		Dm	Tap	2.0	722		
32M2	GS DWR-32F2	8-20-64	Leslie Salt Co.	1960	600		T 20	300	Ps			725		C
32N1	GS DWR DWR-5X1 DWR-32X1	8-19-64 5-10-54	J. M. Riddle	1933	655	C 10	T 20		Dm			715	160 130	C
32N2	GS	8-19-64	Whiting Bros. Service Station		300	6	S 1½		Dm			715		
32P1	GS	8-20-64	R. Haines	1964	d119.0		N N		Un	Tc	1.0	715	114.91	
34H1	GS	8-19-64			48.0	D 96	N N		Ds	Tc	0	1,080	(a)	

See footnotes at end of table.

Well number	Date of collection	Depth of well (feet)	Water temperature (°F)	Results in parts per million (ppm) or in milligrams per liter (mg/l)														Dissolved solids		Hardness as $CaCO_3$	Noncarbonate hardness as $CaCO_3$	Percent sodium	Specific conductance (micromhos at 25°C)	pH	Analyzing laboratory and sample number
				Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Calculated (Sum of determined constituents)	Residue on evaporation at 180°C						
U.S. Public Health Service drinking-water standards (1962)					0.3							250	250	0.9	45		500	500						
5N/13E-22J1	5-10-54		72			92	16	281	4.4	277	0	112	394	1.0	24	0.5	1,060	1,130	279		67	1,940	7.5	DWR-P522
	5-23-55		66			75	18	264	4.0	273	0	90	364	1.4	18	.48	969	1,020	261		68	1,560	7.6	DWR-5761
	5-14-57		68	75		38	10	134	2.9	267	0	41	111	1.0	.2	.33	545	547	134		68	836	7.4	DWR-7870
	5-23-58			53		59	12	178	3.1	282	0	72	200	.8	0	.9	718	788	199		66	1,210	8.0	DWR-T2063
5N/14E-15K1	8-15-10					18	18	65		136		72	52				292	289	107		54			RR-10854[1]
	6-26-30					35	5.1	72		134		68	47				313	298	109		59			RR-30934[1]
Cadiz 1	5-23-55		82			26	10	54	2.5	132	0	39	48	1.4	20	.24	266	290	106		51	425	7.8	DWR-5760
	9-30-55		82			26	10	54	2.5	129	0	37	47	1.4	22	.32	264	350	108		51	447	7.7	DWR-6144
	5-25-56									88			44						105			392	7.6	DWR-7007
	5-14-57			40		26	10	54	5.1	138	0	38	46	1.0	12	.17	299	286	105		51	469	7.6	DWR-7869
	5-23-58									136	0		50						105			500	7.9	DWR-T2064
	5-17-59		85							134	0		48						108			487	7.7	DWR-R2552
	5-17-60		82							135	0		47						107			464	7.6	DWR-11479
	5-13-61			45		28	8.5	55	5.4	139	0	38	47	1.2	15	.28	311	310	105	0	52	471	7.9	DWR-12659
	5-20-62									129	0		47						110	4		473	8.3	DWR-15666
	5-11-63			37		30	7.8	53	5.2	138	0	37	50	.6	12	.37	301	298	107	0	50	450	8.0	DWR-16789
15L1	2-19-32					42	5.1	69		142		79	54				319	300	125		54			RR-32802[1]
	5-10-54		82			28	9	55	5.1	134	0	40	58	1.0	2.5	.35	265	339	107	0	52	472	7.9	DWR-P540
Cadiz 2	9-15-54					29	11	54	5.6	128		39	41	1.0	19	.35	263	295	116	11	49	455	8.0	DWR-R385
	10-18-56									133	0		50						111	2		482	7.5	DWR-7395
	9- 4-58		88	42		25	11	55	5.3	134	0	34	50	.7	12	.6	302	332	105	0	52	516	7.8	DWR-T2546
	5-24-62		87	40		30	8	53	4.7	143	0	36	45	1.1	15	.34	303	316	109	0	50	470	8.2	DWR-2767
5N/15E- 4X1	9-26-03			27		19	5.4	e73		148		51	38				286	334	270					RR[1]
6N/ 6E- 4Q1	11-27-17	125		48	0.33	50	7.4	494	17	88	0	547	349		9		1,560	1,680	155		86			DGT-487
6N/11E-30G1	5- 8-53					477	32	1,200	24	22	0	284	2,720	2.6	3.5		4,750	4,910	1,320	1,300	66	7,920	7.0	FC-2645
	5- 8-53					513	15	1,200	23	15	0	225	2,610	3.0	5	2.6	4,600	5,320	1,340	1,330	66	7,920	6.8	FC-2665
30X1	12- -01	1,000				820	6.1	e1,580				409	3,600				6,420		2,080		62			RH
	5- 2-02					771	4.7	1,520				351	3,460				6,110		1,940		63			RR[1]
6N/12E-29P1	12-30-54					320	9	840	15	71	0	1,050	1,120	4.0	5.5	3.9	3,400	3,500	837	779	68	5,350	7.8	FC-3377
	4-25-55					364	2	1,000	17	41	0	1,080	1,430	4.4	7	3.9	3,930	3,990	917	883	70	6,130	7.9	FC-3523
	5-23-55		89			305	2	925	15	49	0	944	1,300	6	8.4	4.2	3,530	3,600	769	729	72	5,210	7.9	DWR-5757
	9-30-55		88							80	0		1,270	4.2					737	676		5,180	7.5	DWR-6138
	5-25-56		86	2		156	15	800	11	10	0	551	1,150	4.5	14	3.2	2,710	2,790	452	443	79	4,130	5.8	DWR-7132
	5-14-57		86	2		86	1	840	12	29	0	347	1,200	2.5	5.5	3.6	2,510	2,540	218		89	4,220	6.3	DWR-8C71
	5-24-58		86							32	0		1,250						36	9		4,180	7.9	DWR-R2061
	5-17-59		89	3		6	0	855	18	52	15	50	1,290	5.9	1.6	2.8	2,270	2,210	15	0	98	4,320	8.9	DWR-R2559
	5-17-60		89							49	12		1,300						15			4,000	9.1	DWR-R3233
32R1	7-13-57		83	38		389	6	828	17	256	0	1,650	493	1.0	120	5.5	3,670	3,560	996		64			DWR-T877

See footnotes at end of table.

Well number	Date of collection	Depth of well (feet)	Water temperature (°F)	Results in parts per million (ppm) or in milligrams per liter (mgl)													Dissolved solids		Hardness as $CaCO_3$	Noncarbonate hardness as $CaCO_3$	Percent sodium	Specific conductance (micromhos at 25°C)	pH	Analyzing laboratory and sample number
				Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Calculated (Sum of determined constituents)	Residue on evaporation at 180°C						
U.S. Public Health Service drinking-water standards (1962)					0.3							250	250	0.9	45		500	500						
5N/13E-22J1	5-10-54		72			92	16	281	4.4	277	0	112	394	1.0	24	0.5	1,060	1,130	279		67	1,940	7.5	DWR-P522
	5-23-55		66			75	18	264	4.0	273	0	90	364	1.4	18	.48	969	1,020	261		68	1,560	7.6	DWR-5761
	5-14-57		68	75		38	10	134	2.9	267	0	41	111	1.0	.2	.33	545	547	134		68	836	7.4	DWR-7870
	5-23-58			53		59	12	178	3.1	282	0	72	200	.8	0	.9	718	788	199		66	1,210	8.0	DWR-T2063
5N/14E-15K1	8-15-10					18	18	65		136		72	52				292	289	107		54			RR-10854[1]
	6-26-30					35	5.1	72		134		88	47				313	298	109		59			RR-30934[1]
Cadiz 1	5-23-55		82			26	10	54	2.5	132	0	39	48	1.4	20	.24	266	290	106		51	425	7.8	DWR-5760
	9-30-55		82			26	10	54	2.5	129	0	37	47	1.4	22	.32	264	350	108		51	447	7.7	DWR-6144
	5-25-56									88			44						105			392	7.6	DWR-7007
	5-14-57			40		26	10	54	5.1	138	0	38	46	1.0	12	.17	299	286	105		51	469	7.6	DWR-7869
	5-23-58									136	0		50						105			500	7.9	DWR-T2064
	5-17-59		85							134	0		48						108			487	7.7	DWR-R2552
	5-17-60		82							135	0		47						107			464	7.6	DWR-11479
	5-13-61			45		28	8.5	55	5.4	139	0	38	47	1.2	15	.28	311	310	105	0	52	471	7.9	DWR-12659
	5-20-63									129	0		47						110	4		473	8.3	DWR-15606
	5-11-64			37		30	7.8	53	5.2	138	0	37	50	.6	12	.37	301	298	107	0	50	450	8.0	DWR-L6789
15L1	2-19-38					42	5.1	69		142		79	54				319	300	125		54			RR-32802[1]
	5-10-54		82			28	9	55	5.1	134	0	40	58	1.0	2.5	.35	265	339	107	0	52	472	7.9	DWR-P540
C-3 Cadiz 2	9-15-54					29	11	54	5.6	128		39	41	1.0	19	.35	263	295	116	11	49	455	8.0	DWR-R385
	10-18-56									133	0		50						111	2		482	7.5	DWR-7395
	9-4-58		88	42		25	11	55	5.3	134	0	34	50	.7	12	.6	302	332	105	0	52	516	7.8	DWR-T2546
	5-24-62		87	40		30	8	53	4.7	143	0	36	45	1.1	15	.34	303	316	109	0	50	470	8.2	DWR-2767
5N/15E-4X1	9-26-03			27		19	5.4	a73		148		51	38				286	334	270					RR[1]
6N/6E-4G1	11-27-17	125		48	0.33	50	7.4	494	17	88	0	547	349		9		1,560	1,680	155		86			DGT-487
6N/11E-30G1	5-8-53					477	32	1,200	24	22	0	284	2,720	2.6	3.5		4,750	4,910	1,320	1,300	66	7,920	7.0	FC-2645
	5-8-53					513	15	1,200	23	15	0	225	2,610	3.0	5	2.6	4,600	5,320	1,340	1,330	66	7,920	6.8	FC-2665
30X1	12-[illegible]-01	1,000				820	6.1	a1,580				409	3,600				6,420		2,080		62			RR
	5-2-02					771	4.7	1,520				351	3,460				6,110		1,940		63			RR[1]
6N/12E-29P1	12-30-54					320	9	840	15	71	0	1,050	1,120	4.0	5.5	3.9	3,400	3,500	837	779	68	5,350	7.8	FC-3377
	4-25-55					364	2	1,000	17	41	0	1,080	1,430	4.4	7	3.9	3,930	3,990	917	883	70	6,130	7.9	FC-3523
	5-23-55		89			305	2	925	15	49	0	944	1,300	6	8.4	4.2	3,530	3,600	769	729	72	5,210	7.9	DWR-5757
	9-30-55		82							80	0		1,270	4.2					737	676		5,180	7.5	DWR-6138
	5-25-56		86	2		156	15	800	11	10	0	551	1,150	4.5	14	3.2	2,710	2,790	452	443	79	4,130	5.8	DWR-7132
	5-14-57		86	2		86	1	840	12	29	0	347	1,200	2.5	5.5	3.6	2,510	2,540	218		89	4,220	6.3	DWR-8071
	5-24-58		86							32	0		1,250						36	9		4,180	7.9	DWR-R2061
	5-17-59		89	3		6	0	855	18	52	15	50	1,290	5.9	1.6	2.8	2,270	2,210	15	0	98	4,320	8.9	DWR-R2559
	5-17-60		89							49	12		1,300						15			4,000	9.1	DWR-R3233
32R1	7-13-57		83	38		389	6	828	17	256	0	1,650	493	1.0	120	5.5	3,670	3,560	996		64			DWR-T877

See footnotes at end of table.

Results in parts per million (ppm) or in milligrams per liter (mg/l)

Well number	Date of collection	Depth of well (feet)	Water temperature (°F)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids: Calculated (Sum of determined constituents)	Dissolved solids: Residue on evaporation at 180°C	Hardness as $CaCO_3$	Noncarbonate hardness as $CaCO_3$	Percent sodium	Specific conductance (micromhos at 25°C)	pH	Analyzing laboratory and sample number
U S Public Health Service drinking-water standards (1962)					0.3							250	250	0.9	45		500	500						
6N/12E-35F1	1955	284		22		200	24	883		67	0	749	1,200			3.0	3,110	3,140	600		36	4,900	7.6	SE
	9-30-55	284	86			214	3	590	19	29	0	321	1,070	4.0	4.0	3.0	2,240	2,530	539		69	3,500	8.1	DWR-6137
	10-18-56	284	86	25		176	2	735	18	49	0	376	1,170	4.8	12	3.5	2,570	2,820	497		76	4,420	7.7	DWR-7304
	3- 5-57					219	.5	660	21	40	0	380	1,140	3.6	3.0	3.4	2,450	2,700	549	514	72	4,170	7.6	PC-1065
	5-14-57	284	84	25		213	2	642	19	42	0	358	1,090	3.6	10	2.4	2,390	2,590	540		71	3,980	7.0	DWR-7872
	5-24-57	284	86							23	0		1,090						430			3,930	7.7	DWR-R2056
	9- 4-58	284	89							32			1,100						557	531		3,980	6.8	DWR-9449
	5-17-59	284	87	23		222	1	605	28	24	0	310	1,120	4.2	2.5	2.0	2,330	2,420	560	217	69	3,140	7.2	DWR-R2606
	7-10-59	284	86							27	0		1,110						553			4,180	7.9	DWR-R2805
	6-17-60	284	86	28		224	2.9	663	18	27	0	306	1,220	3.8	3.0	2.5	2,480	2,660	571		71	4,070	7.3	DWR-11469
	5-13-61	284	85							29	0		1,160						580	556		4,100	7.6	DWR-12629
	5-25-62	284	86	23		225	12	640	18	23	0	309	1,200	2.8	0	2.8	2,440	2,860	613	593	69	4,000	7.7	DWR-2757
	5-20-63	284	85	13		230	4.3	750	23	18	0	322	1,310	3.0	0	3.3	2,670	3,100	593	578	72	4,200	6.4	DWR-L4490
	6- 5-64	284	88	19		230	36	720	22	21	0	313	1,380	3.0	0	3.9	2,740	2,830	725	708	68	4,000	7.5	DWR-L6788
6N/14E-31A1	1-16-61					28	5	70	5.1	156	0	39	49	1.8	13	.57	238	342	93	0	61	514	7.8	PC-5927
	5-13-64	154		36		29	6.3	74	5.5	53	0	42	53	2.0	11	.6	285	332	98	0	60	500	8.1	DWR-L6775
31J1	1-16-61	270				18	5	72	5.3	142	0	35	45	1.9	8.6		261	297	64	0	68	455	8.0	PC-5928
	5-13-64			32		26	4.9	67	5.2	134	0	39	55	2.0	12	.47	310	320	84	0	62	450	7.8	DWR-L6784
32E1	4- 2-62					22	6	66	5.5	146	0	32	39	2.2	18	.28	263	284	82	0	62	449	8.0	PC-6575
	5-12-64			29		22	7.1	62	5.1	145	0	34	35	2.0	15	.33	282	288	83	0	60	430	8.1	DWR-L6780
33M2	5-17-60	600	89	41		19	6	74	5.1	143	0	37	46	2.4	17	.26	318	290	73		67	482	7.9	DWR-R3247
	9-20-60	600		20		7	5	70	7.2	98	4	20	64	4.7	9	.36	250	320	35	0	80	447	9.9	DWR-L294
	5-13-61	600								127	10	49							69	0		490	8.3	DWR-12628
	5-25-62	600		33		20	6	78	5	143	0	55	47	2.5	12	.24	329	336	76	0	68	510	8.2	DWR-2734
	5-20-63			39		16	5.5	80	5.4	146	0	39	43	2.9	12	.36	315	320	63	0	71	508	8.1	DWR-15508
	5-11-64			33		19	4.6	83	4.9	144	0	44	50	3.0	12	.40	325	318	67	0	71	500	8.1	DWR-L6781
32N1	5-10-54		91			22	8.1	89	5.5	141	0	51	74	3.6	14	.38	337	414	89	0	67	585	8.0	DWR-P533
	9-15-54		91			25	3	98	5.9	137	0	54	73	1.4	13	.45	341	365	74	0	72	602	7.6	DWR-R383
	5-23-55		91			23	5	92	5.6	134	0	50	69	5.0	9.4	.38	325	355	78	0	70	627	8.0	DWR-5759
	9-30-55									144	0		72	4.0					77	0		594	8.0	DWR-6143
	5-25-56			25		13	4	88	4.8	122	0	48	67	4.0	1.0	.42	315	300	49		78	467	7.7	DWR-7118
	10-17-56		92							137	0								81			536	7.3	DWR-7394
	5-14-57			35		18	7	91	5.1	137	0	53	69	4.0	7.8	.41	357	384	75		71	596	7.3	DWR-7991
	5-23-58									140	0		73						75			602	7.5	DWR-R2063
	9- 4-58									140	0		76						75	0		613	7.3	DWR-T2532
	5-17-59		93							137	0		69						78	0		594	7.7	DWR-R2553
	5-16-60									134	0		72						72	0		572	7.4	DWR-11546
	5-13-61			30		82	8	96	5.2	143	0	70	71	2.5	8.2	.48	383	380	88	0	69	590	7.7	DWR-L1263
	5-24-62			37		24	3.8	93	4.5	139	0	50	69	2.8	8.0	.42	360	376	75	0	72	578	8.1	DWR-2774
	5-20-63			24		20	7.4	88	5.6	139	0	50	66	4.0	9.0	.46	342	386	80	0	69	590	8.2	DWR-L4488
	5-11-64			36		25	3.9	94	5.4	142	0	55	75	2.8	8.6	.37	376	374	78	0	71	570	8.1	DWR-L6787
7N/ 8E- 8B1	1883	(d)															470							RR[1]/
	1883	(e)															521							RR[1]/
7N/ 9E-25Z1	4-15-02					31	4.3	141		593		357	136				1,260		91					RR
7N/11E-36K1	6- 5-64		73	31		30	7.2	110	5.3	205	0	82	56	1.4	16	.86	441	446	105	0	68	690	7.8	DWR-L6800

Chambless Wells

C-4

1. Analysis calculated by the Geological Survey from hypothetical combinations.
2. Analysis also indicates 383 ppm strontium (Sr).

d. Water sample collected from 785-foot depth.
e. Water sample collected from 1,048-foot depth.

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)

5N/12E-5Z1. 12-inch casing reduced to 6-inch casing. No lengths given. Altitude about 639 ft.

No record	1,500	1,500	Bedrock	25	1,525

Cadiz 1

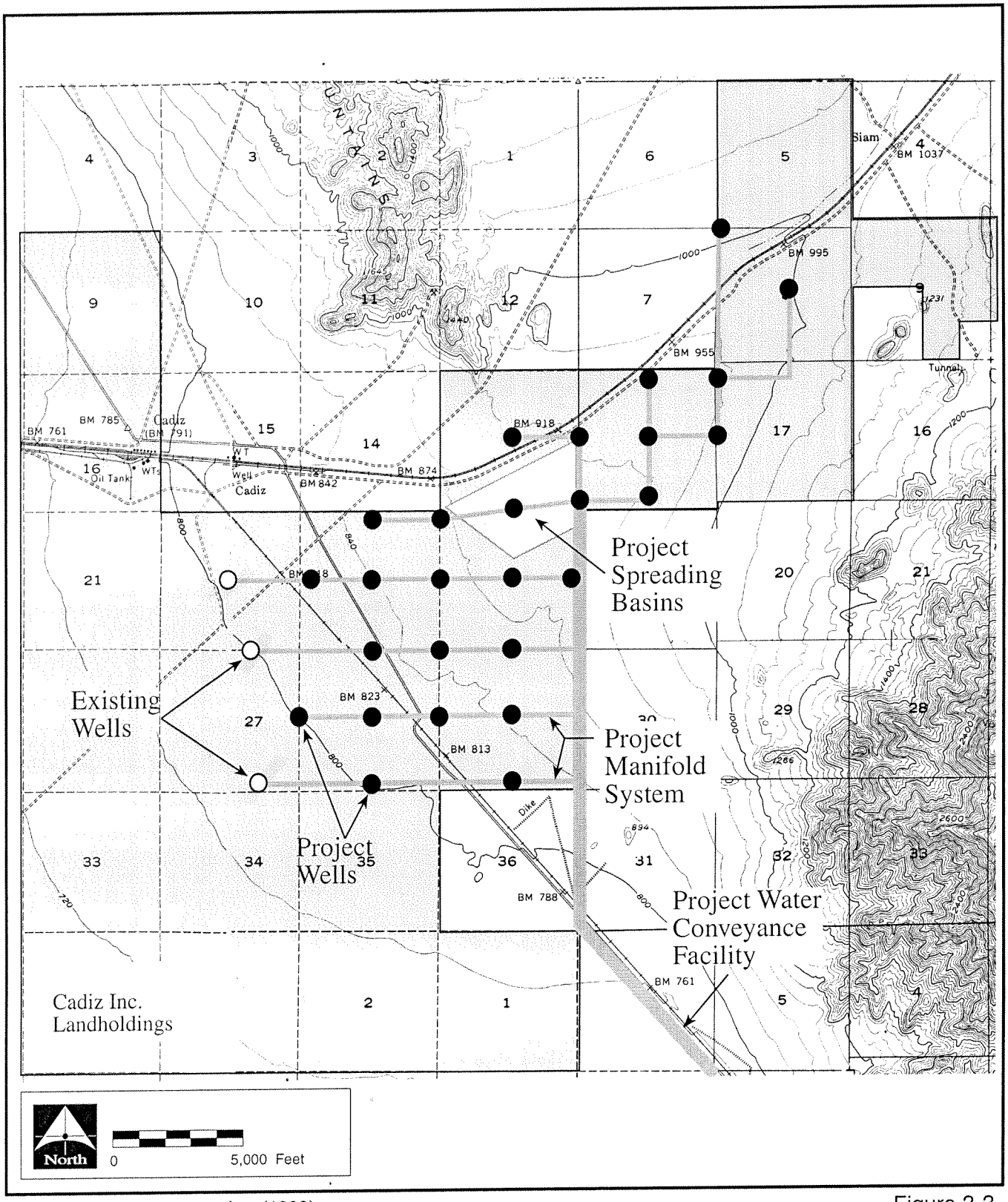
5N/14E-15K1. Drilled by L. A. Clampitt Co. 12-inch casing 0-300 ft, 10-inch casing 0-400 ft, open hole 400-425 ft. Altitude about 820 ft.

Gravel, cemented	210	210	Sand	100	360
Gravel and sand	50	260	Sand, cemented	65	425

Cadiz 2

5N/14E-15L1. Drilled by A. F. Fulkerson Co. 20-inch casing 0-207 ft, 12-inch casing 0-541 ft, perforated 214-280 ft and 490-535 ft. Altitude about 820 ft.

Sand	3	3	Sand, clay, and gravel	64	406
Sand and gravel, hard-	32	35	Sand, cemented	8	414
Sand, shaly; and clay-	14	49	Gravel, large	12	426
Sand and gravel, cemented	12	61	Clay, white	3	429
Sand and clay	9	70	Sand, fine	6	435
Gravel, dry and large-	15	85	Sand, hard and cemented	4	439
Sand and rocks	100	185	Sand, fine	5	444
Sand, cemented	3	188	Clay, yellow	6	450
Clay, sandy; and gravel	26	214	Gravel and sand	10	460
Sand, coarse	9	223	Clay and sand	8	468
Sand; and rocks, large	37	260	Clay, yellow	31	499
Sand; clay; and gravel, coarse	48	308	Sand, cemented	1	500
Sand, cemented	3	311	Sand, coarse	7	507
Sand, clay, and gravel	19	330	Clay, yellow	15	522
Sand, cemented; and gravel, large	12	342	Sand, clay, and gravel	19	541



Source: P&D Consultants, Inc. (1999).

Figure 3-3

Cadiz Groundwater Storage & Dry-Year Supply Program

Final EIR/EIS

Proposed Wellfield and Manifold System

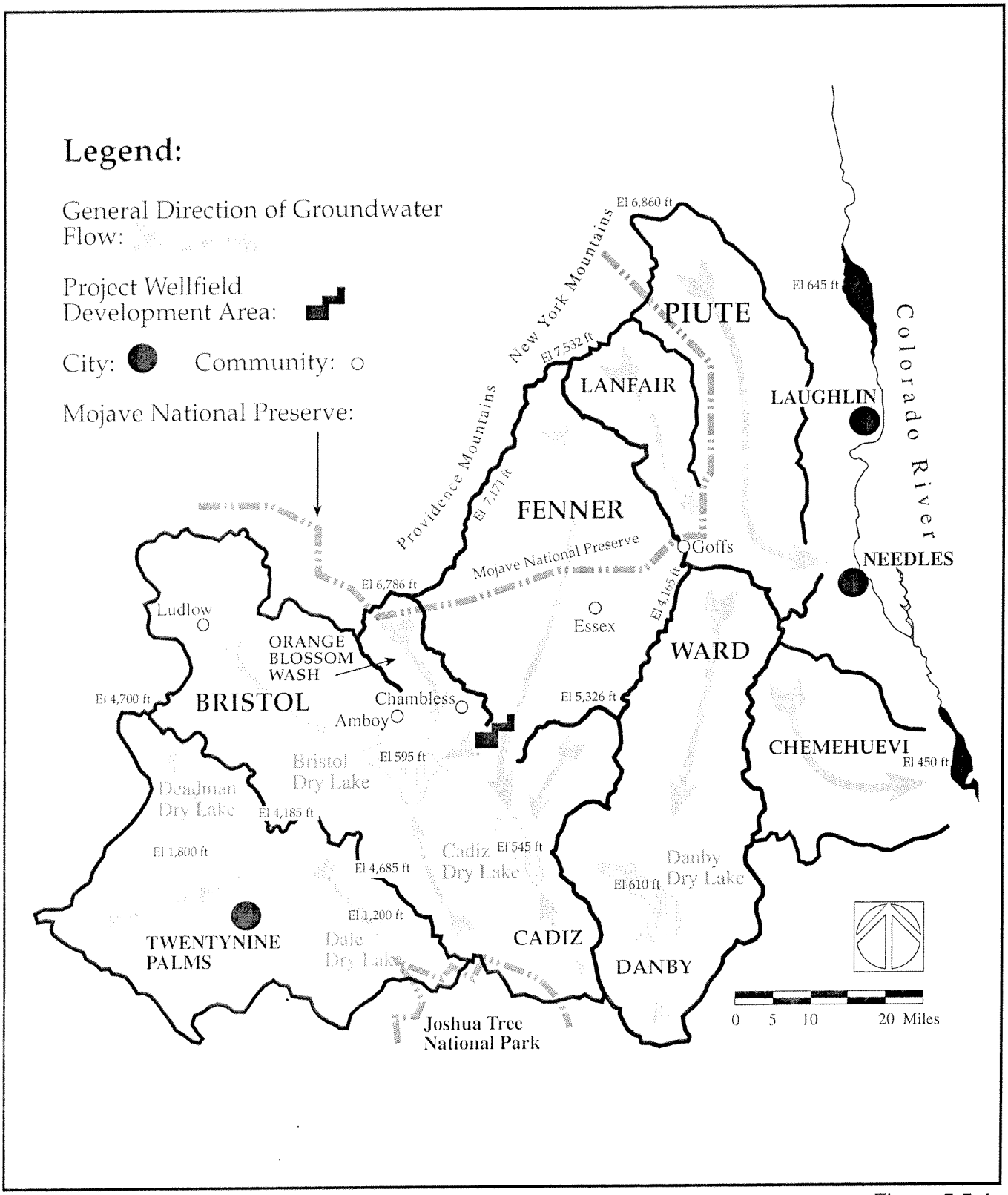


Figure 5.5-1

Location of Neighboring National Parks Units and Nearby Communities in Relation to the Project Area Regional Watersheds

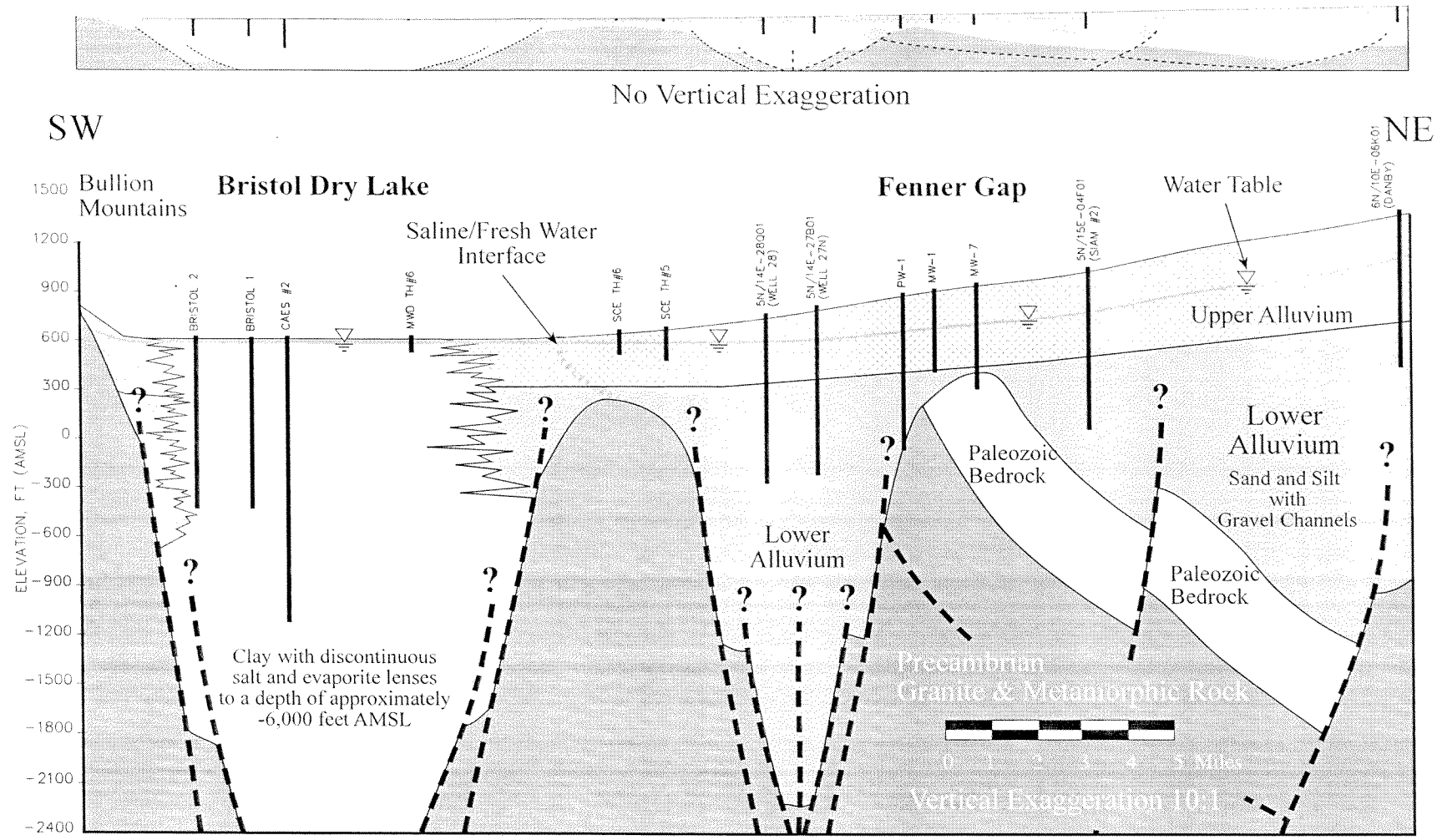
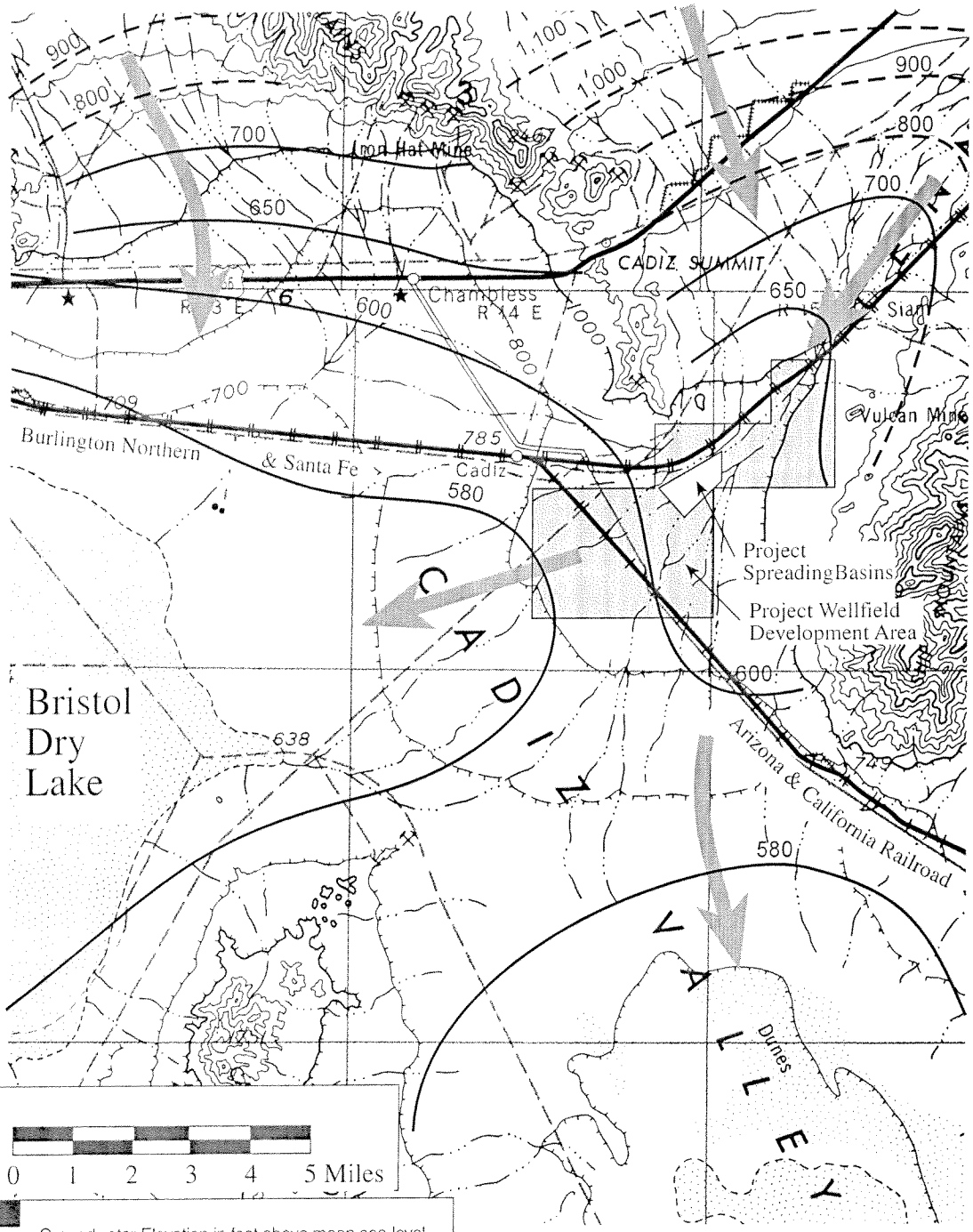


Figure 5.5-10

Cadiz Groundwater Storage & Dry-Year Supply Program

Final EIR/EIS

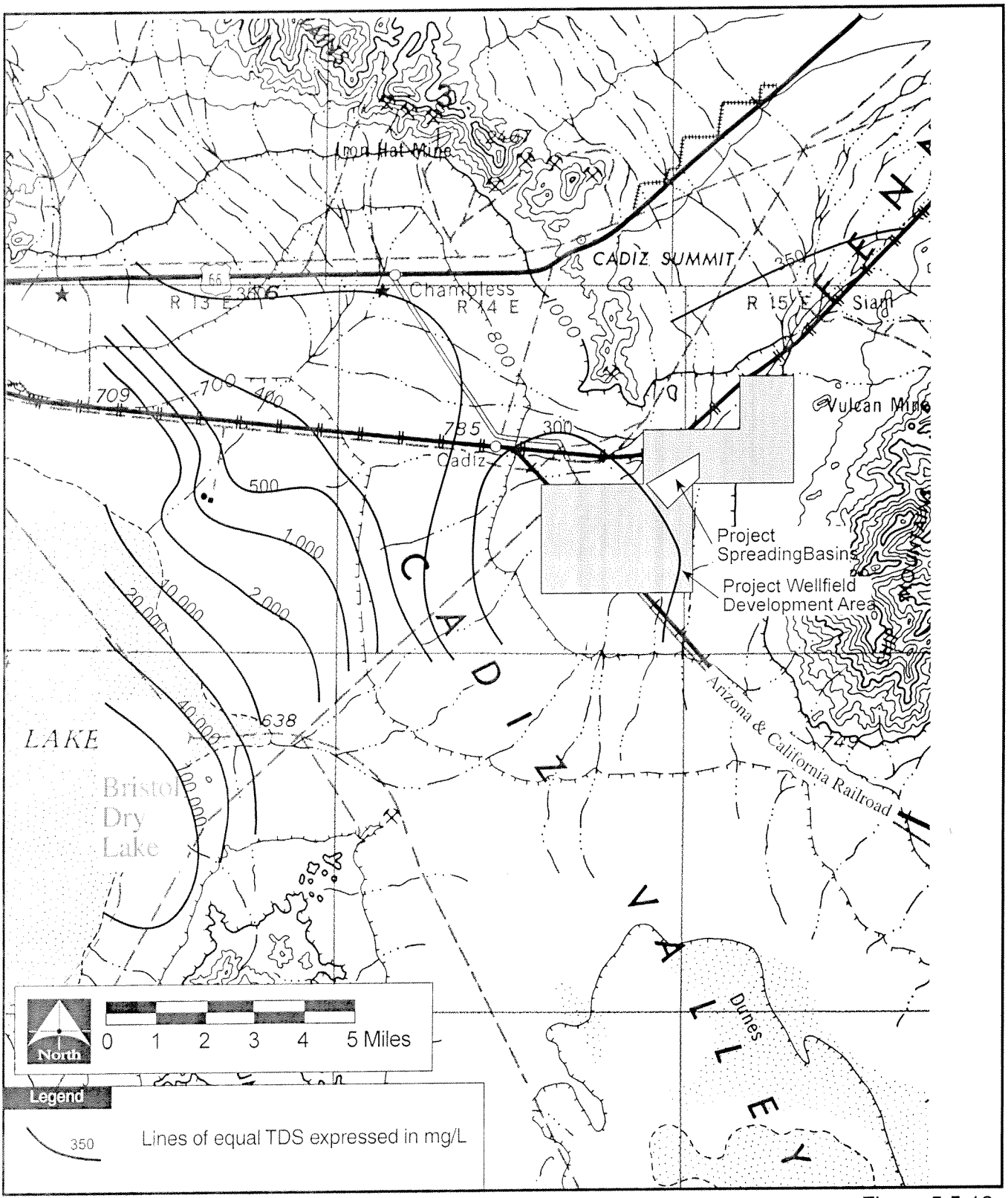
Generalized Aquifer Cross Section from Fenner Valley to Bristol Dry Lake



Source: Metropolitan Water District (1999b).

Figure 5.5-11

Groundwater Elevation Contour Map for Fenner Gap Portion of the Project Area



Source: Metropolitan Water District (1999b).

Figure 5.5-12

Total Dissolved Solids in Groundwater in the Fenner Gap and Bristol Dry Lake Areas

Attachment AQ-1a
Construction Emissions for Rail Transport
(Jan. 26, 2010)

Calico Solar

Construction Trade Projection (850 MW)

Discipline	Hours	Month After Construction Start																																										Highest Per Day Requirement by Solar One During Project
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
Carpenters	83,472	10	14	31	31	31	43	47	40	36	28	28	28	21	11	11	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	47
Concrete Crews	81,008	9	15	29	29	29	46	46	42	36	24	24	24	21	11	11	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	46
Electricians	212,010	17	28	57	57	57	84	84	60	54	54	54	54	69	69	113	105	105	88	48	48	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0	0	0	0	0	0	113
Ironworkers	100,330	19	23	41	41	41	44	48	36	32	24	24	24	36	26	26	25	25	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	48
Laborers	153,557	17	43	65	62	62	142	142	68	30	30	30	30	56	41	51	46	46	32	22	17	17	17	17	17	17	17	17	10	10	10	10	10	10	10	10	0	0	0	0	0	142
Miscellaneous Crews	10,000	0	0	0	0	0	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Operators	205,183	25	82	93	75	75	86	86	72	59	51	51	51	84	88	67	61	52	34	34	27	26	25	25	25	25	25	25	2	2	2	2	2	2	2	2	1	1	1	0	0	93
Plumbers	25,040	0	5	9	9	9	22	26	26	22	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Solar One Technicians	145,920	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
SunCatcher Assemblers	371,200	0	0	0	0	0	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
SunCatcher Electricians	92,800	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
SunCatcher Ironworkers	185,600	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
SunCatcher Laborers	58,880	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	16	16	16	16	16	16	16	16	16
SunCatcher Material Handlers	92,800	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
SunCatcher Operators	29,440	0	0	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8	8	8	8	8	8
SunCatcher Teamsters	44,160	0	0	0	0	0	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	12	12	12	12	12	12
SunCatcher Technicians	185,600	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Teamsters	65,160	4	60	49	24	24	25	25	7	5	5	5	5	31	53	29	28	26	24	24	4	4	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	0	60
Technicians	3,504	0	0	0	0	0	5	5	5	5	5	5	5	5	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Totals	**2,145,664**	**101**	**270**	**374**	**328**	**328**	**719**	**731**	**578**	**501**	**457**	**457**	**457**	**535**	**512**	**521**	**498**	**487**	**420**	**370**	**339**	**314**	**312**	**312**	**312**	**312**	**312**	**312**	**249**	**249**	**249**	**249**	**249**	**285**	**285**	**285**	**230**	**230**	**230**	**230**	**228**	**228**	**818**

Source: Bureau of Labor Statistics, 2008.

Note:

N/A = not applicable

14645 total personnel for 41 months
357 avg monthly personnel
731 max monthly personnel

Data from Appendix V Solar 1
Note does not match Solar 1 Table 3-15 from AFC

Calico Solar
Construction Equipment Projection (850 MW)

| Construction Equipment Description | HP | D | G | P | Month After Construction Start (number of equipment per day) | | |

Calico Solar

Description	Activity	Make / Model	Fuel	Quantity per day per month	Frequency	Horse-power	Vehicle Weight (tons)	Max Daily Onsite Distance per Vehicle (mile/day)	Assumed distance percentage to drive on onsite sealed roads	Assumed distance percentage to drive on onsite unpaved roads	Assumed distance percentage to drive on onsite paved roads	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD jurisdictional area (mile/day)	Offsite Travel to and from	Onsite Travel description
Concrete Delivery Truck for general construction			Diesel	variable - from construction equipment schedule	Daily	250	20	7	90%	10%	0%	74	Barstow	most concrete will be delivered to the MSC area
Concrete Delivery Truck for bridge			Diesel	variable - from construction equipment schedule	Daily	250	20	1.6	90%	10%	0%	74	Barstow	most concrete will be delivered to the bridge construction area
Concrete Pump Truck for bridge			Diesel	variable - from construction equipment schedule	Daily	250	20	0.1	90%	10%	0%	0	on-site only	concrete pump will be used mostly in the MSC area
Dump Truck			Diesel	variable - from construction equipment schedule	Daily	250	20	6.8	50%	50%	0%	0	on-site only	from the MSC area to the any construction area of the site
Flatbed Truck			Diesel	variable - from construction equipment schedule	Daily	250	10	27.2	100%	0%	0%	0	on-site only	delivers materials to installation location
Staff & Security Truck	Site Inspections & Security	Toyota Highlander or similar	Gasoline - Hybrid	6	Daily	187	2.25	48	100%	0%	0%	0	on-site only	travels mainly perimeter and main access road
Pickup Truck			Gasoline	variable - from construction equipment schedule	Daily	175	4	6.8	95%	5%	0%	0	on-site only	from the MSC area to the any construction area of the site
Water/Soiltac Truck			Diesel	variable - from construction equipment schedule	Daily	250	20	13.6	25%	75%	0%	0	on-site only	from the MSC area to the any construction area of the site
General Materials Delivery Truck for general construction	General Construction Materials	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	7	100%	0%	0%	74	Barstow	most materials will be delivered to the MSC area
General Materials Delivery Truck for bridge	General Construction Materials	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	1.6	100%	0%	0%	74	Barstow	most materials will be delivered to the bridge construction area
Suncatcher Delivery Trucks	Suncatcher Pedestals	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	7	50%	50%	0%	200	Phoenix	delivers pedestals to installation location
	Stirling Engines	transport truck	Diesel	6	Daily	250	20	7	100%	0%	0%	160	railroad from Detroit to LA and then tranported by truck	delivers materials to MSC
	Suncatcher Metal Supports	transport truck	Diesel	11	Daily	250	20	7	100%	0%	0%	180	from near Phoenix or Los Angeles area.	delivers materials to MSC
	Suncatcher Mirrors	transport truck	Diesel	7	Daily	250	20	7	100%	0%	0%	160	railroad from Detroit to LA and then tranported by truck	delivers materials to MSC
	Electrical and Control Systems	transport truck	Diesel	2	Daily	250	20	7	100%	0%	0%	200	Phoenix	delivers materials to MSC
	Azimuth and Elevation Drive	transport truck	Diesel	2	Daily	250	20	7	100%	0%	0%	160	railroad from Midwest to LA and then tranported by truck	delivers materials to MSC
Water Delivery Trucks	All onsite water will be delivered by train and truck	3700 gal truck	Diesel	39	Daily	300	11.7	6	100%	0%	0%	0	on-site only	delivers water from on-site train station to tanks in MSC
Worker Passenger Vehicles	Community to Work	Passenger vehicles	Gasoline & diesel	variable - from construction equipment schedule	Daily	100	2	9	100%	0%	0%	74	Barstow	half to MSC and the other half to the main laydown area
BNSF Locomotive Engine	All onsite water will be delivered by train and truck	GE Dash-9, GE ES44, or equivalent	Diesel	1	Daily	4400	220	8	0%	0%	0%	120	Cadiz Well	delivers water to on-site train station

Note:

1. Vehicles with variable quantities, the quantity per month can be found in Construction Equipment Projection
2. The average distance from the Project site entrance to bridge construction area, MSC, and the main laydown area is about 0.8, 3.5, and 5.5 miles, one-way, respectively.
3. The average distance between the MSC and the main laydown area is about 2 miles.
4. The fenceline perimeter is approximately 30 miles. Each security vehicle is assumed to travel from the MSC around the perimeter plus one trip to the center of north fenced property (1.8 miles) and the center of south fenced property (5 miles) and back (and plus additional 10% for misc trips) = approximately 48 miles.
5. Average distance from main service complex to center of north and south portion of the site is 1.8 and 5 miles, respectively. Thus, the average round trip distance for each dump truck, pickup truck, and concrete pump truck travels is 6.8 [=(1.8+5)/2*2] miles.
6. The on-site water is assumed to be tranported from Cadiz Well to on-site train station via existing BNSF train (1 train per day) and from on-site train station to MSC water tanks via trucks.
7. One 4400 hp engine (GE Dash-9, GE ES44, or equivalent) is assumed to be added as an additional engine on the existing train to provide enough power hauling the required water rail cars.
8. The distance for water delivery train travels was provided by the applicant (about 64 miles one way trip from Cadiz well to on-site train station).
9. The distance from the Project site to Barstow is about 37 miles.
10. Deliveries coming from Detroit will travel by rail to Los Angeles then by transport truck to the site.
11. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Los Angeles is about 80 miles.
12. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Phoenix is about 100 miles.
13. On-site travelling:

    Delivery Trucks: mostly from the Project site entrance to the MSC (3.5 miles).

    Worker Passenger Vehicles: from the Project site entrance to either the laydown area in the MSC (3.5 miles) or the main laydown area (5.5 miles).

    Concrete Pump Trucks: mostly in the bridge construction area (traveling less than 0.1 miles per day).

    Flatbed Truck: assumed to make 4 trips per day to SunCatcher installation locations delivering assembled dishes and misc parts

    Water/Soiltac Truck: assumed to make 2 trips per day to SunCatcher instalation locations to watering or seaing the soiltac product.

    BNSF Train: from east of the site to the train station in the middle of the site (4 miles).

    Water Truck: from the train station to water tanks at MSC (3 miles).

    Construction laydown area is sealed

Calico Solar

Combustion Exhaust Emissions On-site (short-term)

Highest activity and emissions occur in month 6.

construction schedule = 12 hours per day 7 am to 7 pm pedestal installation = 16 hours per day

delivery trucks can arrive at the site anytime during the day or night

EMISSION FACTORS

				Emission factors (ton/hr)										Emission rate per piece of equipment (lb/hr)									
Equipment	**Load Factor**	**Hours/Day**	**Horsepower**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**ROG**	**NO_x**	**SO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**ROG**	**NO_x**	**SO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Diesel Construction Equipment																							
Air Compressor	0.48	6	50	1.33E-05	1.23E-05	1.42E-04	5.88E-05	1.20E-04	1.44E-07	1.11E-02	5.31E-06	0.00E+00	1.12E-02	2.67E-02	2.46E-02	2.83E-01	1.18E-01	2.39E-01	2.88E-04	2.23E+01	1.06E-02	0.00E+00	2.25E+01
Asphalt Paver	0.59	7	120	4.26E-05	3.92E-05	2.61E-04	8.18E-05	4.84E-04	4.05E-07	3.46E-02	7.38E-06	0.00E+00	3.47E-02	8.52E-02	7.84E-02	5.22E-01	1.64E-01	9.68E-01	8.11E-04	6.91E+01	1.48E-02	0.00E+00	6.94E+01
Backhoe	0.47	6	120	2.57E-05	2.37E-05	1.81E-04	4.54E-05	2.83E-04	3.03E-07	2.58E-02	4.10E-06	0.00E+00	2.59E-02	5.14E-02	4.73E-02	3.62E-01	9.08E-02	5.66E-01	6.06E-04	5.17E+01	8.19E-03	0.00E+00	5.19E+01
Compactor	0.47	6	120	3.20E-05	2.95E-05	2.09E-04	6.00E-05	3.69E-04	3.46E-07	2.95E-02	5.41E-06	0.00E+00	2.96E-02	6.41E-02	5.89E-02	4.17E-01	1.20E-01	7.38E-01	6.91E-04	5.89E+01	1.08E-02	0.00E+00	5.92E+01
Crane small	0.43	5	175	2.69E-05	2.47E-05	2.44E-04	6.05E-05	4.65E-04	4.52E-07	4.01E-02	5.46E-06	0.00E+00	4.03E-02	5.38E-02	4.95E-02	4.88E-01	1.21E-01	9.29E-01	9.03E-04	8.03E+01	1.09E-02	0.00E+00	8.05E+01
Crane large	0.43	7	500	3.42E-05	3.15E-05	3.31E-04	9.10E-05	8.85E-04	8.83E-07	9.00E-02	8.21E-06	0.00E+00	9.01E-02	6.85E-02	6.30E-02	6.62E-01	1.82E-01	1.77E+00	1.77E-03	1.80E+02	1.64E-02	0.00E+00	1.80E+02
Dozer	0.59	7	250	3.92E-05	3.61E-05	2.87E-04	1.03E-04	9.71E-04	9.34E-07	8.30E-02	9.25E-06	0.00E+00	8.32E-02	7.84E-02	7.21E-02	5.74E-01	2.05E-01	1.94E+00	1.87E-03	1.66E+02	1.85E-02	0.00E+00	1.66E+02
Generator	0.74	9	50	1.43E-05	1.32E-05	1.46E-04	5.65E-05	1.54E-04	1.98E-07	1.53E-02	5.10E-06	0.00E+00	1.54E-02	2.86E-02	2.63E-02	2.92E-01	1.13E-01	3.07E-01	3.96E-04	3.06E+01	1.02E-02	0.00E+00	3.08E+01
Grader	0.58	7	175	3.91E-05	3.60E-05	3.70E-04	8.70E-05	6.76E-04	6.97E-07	6.19E-02	7.85E-06	0.00E+00	6.21E-02	7.82E-02	7.19E-02	7.40E-01	1.74E-01	1.35E+00	1.39E-03	1.24E+02	1.57E-02	0.00E+00	1.24E+02
Light Tower	0.62	7	50	1.31E-05	1.21E-05	1.46E-04	5.16E-05	1.39E-04	1.81E-07	1.40E-02	4.66E-06	0.00E+00	1.41E-02	2.63E-02	2.42E-02	2.93E-01	1.03E-01	2.78E-01	3.62E-04	2.80E+01	9.31E-03	0.00E+00	2.82E+01
Loader	0.54	6	250	2.81E-05	2.59E-05	2.10E-04	7.46E-05	7.67E-04	8.37E-07	7.44E-02	6.73E-06	0.00E+00	7.46E-02	5.63E-02	5.18E-02	4.21E-01	1.49E-01	1.53E+00	1.67E-03	1.49E+02	1.35E-02	0.00E+00	1.49E+02
Maxi Sneeker (Trencher)	0.70	8	50	2.02E-05	1.86E-05	2.18E-04	9.18E-05	1.81E-04	2.13E-07	1.64E-02	8.28E-06	0.00E+00	1.66E-02	4.05E-02	3.72E-02	4.36E-01	1.84E-01	3.62E-01	4.25E-04	3.29E+01	1.66E-02	0.00E+00	3.32E+01
Skid Steer (Bobcat)	0.62	7	50	1.08E-05	9.96E-06	1.25E-04	3.92E-05	1.23E-04	1.65E-07	1.27E-02	3.54E-06	0.00E+00	1.28E-02	2.17E-02	1.99E-02	2.50E-01	7.84E-02	2.46E-01	3.30E-04	2.55E+01	7.07E-03	0.00E+00	2.56E+01
Welding Machine	0.45	5	50	1.45E-05	1.33E-05	1.52E-04	6.22E-05	1.36E-04	1.68E-07	1.30E-02	5.62E-06	0.00E+00	1.31E-02	2.90E-02	2.67E-02	3.04E-01	1.24E-01	2.73E-01	3.35E-04	2.59E+01	1.12E-02	0.00E+00	2.62E+01
Equipment fueled with Propane				**Emission factors (ton/hr)**																			
Aerial Lift	0.51	6	120	1.39E-06	1.39E-06	7.09E-04	2.48E-06	1.02E-04	0.00E+00	1.56E-02	2.08E-05	0.00E+00	1.61E-02	2.78E-03	2.78E-03	1.42E+00	4.95E-03	2.03E-01	0.00E+00	3.12E+01	4.15E-02	0.00E+00	3.21E+01
Fork Lift	0.30	4	50	8.14E-07	8.14E-07	1.48E-04	1.41E-06	6.05E-05	0.00E+00	9.15E-03	1.18E-05	0.00E+00	9.40E-03	1.63E-03	1.63E-03	2.95E-01	2.82E-03	1.21E-01	0.00E+00	1.83E+01	2.36E-02	0.00E+00	1.88E+01
Telehandler	0.51	6	120	1.39E-06	1.39E-06	7.09E-04	2.48E-06	1.02E-04	0.00E+00	1.56E-02	2.08E-05	0.00E+00	1.61E-02	2.78E-03	2.78E-03	1.42E+00	4.95E-03	2.03E-01	0.00E+00	3.12E+01	4.15E-02	0.00E+00	3.21E+01

Vehicles with Onroad Engines for Emissions Estimates	Onsite Miles per Day Travelled per Vehicle	**Hours/Day**	**Vehicle Weight (lbs)**	**Emission factors (g/mile)**																			
Concrete Delivery Truck for general construction	7	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.18E-03	1.95E-03	1.61E-02	7.59E-03	3.58E-02	3.85E-05	4.07E+00	6.55E-06	6.17E-06	4.07E+00
Concrete Delivery Truck for bridge	1.6	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	4.98E-04	4.47E-04	3.67E-03	1.73E-03	8.18E-03	8.81E-06	9.30E-01	1.50E-06	1.41E-06	9.30E-01
Concrete Pump Truck for bridge	0.1	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-05	2.79E-05	2.29E-04	1.08E-04	5.11E-04	5.51E-07	5.81E-02	9.36E-08	8.81E-08	5.81E-02
Dump Truck	6.8	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.11E-03	1.90E-03	1.56E-02	7.37E-03	3.48E-02	3.74E-05	3.95E+00	6.37E-06	5.99E-06	3.95E+00
Flatbed Truck	27.2	12	20,000	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	2.90E-03	2.59E-03	2.61E-02	2.26E-03	4.65E-02	6.99E-05	7.51E+00	5.49E-06	8.49E-06	7.52E+00
Staff & Security Truck	48	24	4,500	1.00E-02	1.00E-02	2.10E+00	5.50E-02	3.00E-02	9.00E-03	3.26E+02	1.04E-01	8.13E-02	3.54E+02	4.41E-05	4.41E-05	9.25E-03	2.42E-04	1.32E-04	3.96E-05	1.44E+00	4.56E-04	3.58E-04	1.56E+00
Pickup Truck	6.8	12	8,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	7.44E+02	8.99E-05	6.83E-05	6.29E-03	4.33E-04	5.87E-04	8.74E-06	9.01E-01	8.79E-05	8.08E-05	9.28E-01
Water/Soiltac Truck	13.6	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	4.23E-03	3.80E-03	3.12E-02	1.47E-02	6.96E-02	7.49E-05	7.90E+00	1.27E-05	1.20E-05	7.91E+00
General Materials Delivery Truck for general cons	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
General Materials Delivery Truck for bridge	1.6	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-04	2.23E-04	1.83E-03	8.67E-04	4.09E-03	4.41E-06	4.65E-01	7.49E-07	7.05E-07	4.65E-01
Suncatcher Pedestals Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Stirling Engines Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Suncatcher Metal Supports Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Suncatcher Mirrors Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Electrical and Control Systems Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Azimuth and Elevation Drive Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Water Delivery Trucks	6	24	23,400	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	3.19E-04	2.86E-04	2.88E-03	2.49E-04	5.13E-03	7.71E-06	8.29E-01	6.06E-07	9.36E-07	8.29E-01
Worker Passenger Vehicles	9	24	4,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	3.54E+02	5.95E-05	4.52E-05	4.16E-03	2.87E-04	3.88E-04	5.78E-06	5.96E-01	5.81E-05	5.34E-05	6.14E-01

Train	**Load Factor**	**Hours/Day**	**Horsepower**	**Emission factors (g/bhp-hr)**																			
BNSF Locomotive Engine (in motion)	0.087	0.53	4,400	2.36E-01	2.17E-01	1.28E+00	4.18E-01	7.93E+00	4.62E-03	4.88E+02	3.85E-02	1.25E-02	4.93E+02	1.99E-01	1.83E-01	1.08E+00	3.53E-01	6.69E+00	3.89E-03	4.11E+02	3.24E-02	1.05E-02	4.15E+02
BNSF Locomotive Engine (idling)	0.087	1	4,400	7.27E-03	6.69E-03	1.12E-01	1.09E-01	1.41E-01	4.62E-03	4.88E+02	3.85E-02	1.25E-02	4.93E+02	6.13E-03	5.64E-03	9.43E-02	9.16E-02	1.19E-01	3.89E-03	4.11E+02	3.24E-02	1.05E-02	4.15E+02

Notes:

1. Emission factors from CARB Off-road Mobile Source Emission Factors (2006-2020) for diesel and propane equipment. (2009 data used).
   Dozer = Crawler Tractor
   Loader = Rubber Tired Loader
   Backhoe = Tractors/Loaders/Backhoes
   Light Tower = Other Construction Equipment
2. Utilization Load Factors from SCAQMD
3. $PM_{2.5}$ emission factors obtained by multiplying the PM_{10} emissions by $PM_{2.5}$ fraction in SCAQMD CEIDARS list for onroad or offroad diesel vehicles.
4. For propane equipment assumed $PM_{2.5}$ and PM_{10} Fraction of total PM is 1.000
5. Onroad vehicle emissions from EMFAC2007 model. The vehicle description in EMFAC2007 model are as follows:
   - Flatbed Truck and Water Delivery Truck are Medium-Heavy-Duty (MHD-DSL).
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Worker Passenger Vehicle and Pickup Truck are Passenger Car (LDA-ALL)
   - Concrete Delivery Truck, Concrete Pump Truck, Dump Truck, Water/Soiltac Truck, General Materials Delivery Trucks, Suncatcher Pedestals Delivery Truck, Stirling Engines Delivery Truck, Suncatcher Metal Supports Delivery Truck, Suncatcher Mirrors Delivery Truck, Electrical and Control Systems Delivery Truck, and Azimuth & Elevation Drive Delivery Truck are all Heavy-Heavy-Duty (HHD-DSL)
6. The emissions of "Toyota Highlander Hybrid" (Staff & Security Truck) meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
7. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
8. Emission factors for locomotives are from EPA Emission Factors for Locomotives (for year 2009 large line haul engines) April 2009, EPA420-F-09-025 (http://www.epa.gov/OMS/regs/nonroad/locomotv/420f09025.pdf).
9. The average speed for train is assumed to be 15 mph on-site; the idling time at the on-site train station is assumed to be up to 1 hour (conservative) of the additional locomotive engine plus 3 (assumed) existing locomotive engines.
10. Locomotive SO_2 emission factors (for both in motion and idling) are calculated as follows:
    Based on CARB Statewide Rail Yard Agreement to Reduce Diesel PM at California Rail Yards (2005), California state regulation requires intrastate diesel-electric locomotives that operate 90 percent of the time in the state to use only California ultra low sulfur diesel fuel.

California ultra low sulfur diesel fuel	=	15	ppm (as S) fuel sulfur content.
Diesel fuel fuel density	=	7.05	lb/gal (EPA-AP-42)
Heating value of diesel fuel	=	137000	Btu/gal (EPA-AP-42)
Conversion Factors	=	20.80	bhp-hr/gal (large line-Haul and Passenger)
Fuel Consumption	=	211.54	gal/hr (calculated)
Brake Specific Fuel Consumption (BSFC)	=	0.34	lb/hp-hr (calculated)
	=	6586.54	Btu/hp-hr
SO_x EF (as SO_2, g/hp-hr)	= (ppm as S/1000000) x (Fuel Density [lb/gal]) x (1 gal/137000 Btu) x (1 lb-mol S/32 lb S) x (1 lb-mole SO_x/1 lb-mole S) x (64 lb SO_2/1 lb-mole SO_2) x (BSFC [Btu/hp-hr]) x (454 g/lb)		
	=	0.0046	g/hp-hr

11. NO_x and PM_{10} emission factors for locomotive idling are from EPA's Technical Highlights: Guidance for Quantifying and Using Long Duration Switch Yard Locomotive Idling Emission Reductions in State Yard Locomotive Idling Emission Reductions in State Implementation Plans, January 20
12. Percent of rated hp for GE D9 trains is 8.7% and CO and VOC emission factors for locomotive idling are from Southeastern States Air Resource Managers & Sierra Research Group: Development of Railroad Emissions Methodology, June 2004.
13. CH_4 and N_2O emission factors for locomotives (for both in motion and idling) are from Reference source 2: Table C.6, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009.
14. CO_2 emission factor for locomotives (for both in motion and idling) are from Reference source 4: Table C.3, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009
15. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)

CO_2 GWP (SAR, 1996)	=	1
CH_4 GWP (SAR, 1996)	=	21
N_2O GWP (SAR, 1996)	=	310

MONTHLY EMISSIONS (month 1-20)

	Month 1 Daily Emissions (lb/day)											Month 2 Daily Emissions (lb/day)											Month 3 Daily Emissions (lb/day)											Month 4 Daily Emissions (lb/day)										
	Quantity Mo 1	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 2	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 3	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 4	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																												
Air Compressor	1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
Asphalt Paver	-	-	-	-	-	-	-	-	-	-	-	1	0.60	0.56	3.69	1.16	6.86	0.01	489.47	0.10	-	491.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe	3	0.87	0.80	6.12	1.54	9.57	0.01	874.45	0.14	-	877.36	9	2.61	2.40	18.37	4.61	28.72	0.03	2,623.36	0.42	-	2,632.09	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
Compactor	2	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72
Crane small	1	0.28	0.26	2.52	0.62	4.79	0.00	414.21	0.06	-	415.39	3	0.83	0.77	7.55	1.87	14.38	0.01	1,242.62	0.17	-	1,246.16	5	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94	6	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
Crane large	1	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	1	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	1	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	4	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43
Dozer	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
Generator	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
Grader	2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03	4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06
Light Tower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
Loader	2	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67	4	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	4	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	6	2.19	2.01	16.36	5.80	59.64	0.07	5,787.01	0.52	-	5,798.01
Maxi Sneeker (Trencher)	-	-	-	-	-	-	-	-	-	-	-	2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
Skid Steer (Bobcat)	-	-	-	-	-	-	-	-	-	-	-	1	0.16	0.15	1.86	0.58	1.83	0.00	189.69	0.05	-	190.80	1	0.16	0.15	1.86	0.58	1.83	0.00	189.69	0.05	-	190.80	2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
Welding Machine	-	-	-	-	-	-	-	-	-	-	-	1	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32	2	0.31	0.29	3.29	1.34	2.95	0.00	280.10	0.12	-	282.64	3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
Equipment fueled with Propane																																												
Aerial Lift	2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
Fork Lift	2	0.01	0.01	2.12	0.02	0.87	-	131.72	0.17	-	135.29	6	0.04	0.04	6.37	0.06	2.62	-	395.16	0.51	-	405.88	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
Telehandler	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.02	0.02	8.67	0.03	1.24	-	191.16	0.25	-	196.49	1	0.02	0.02	8.67	0.03	1.24	-	191.16	0.25	-	196.49
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Truck for bridge	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16
Concrete Pump Truck for bridge	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70
Dump Truck	3	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31	8	0.20	0.18	1.50	0.71	3.34	0.00	379.30	0.00	0.00	379.49	8	0.20	0.18	1.50	0.71	3.34	0.00	379.30	0.00	0.00	379.49	7	0.18	0.16	1.31	0.62	2.92	0.00	331.88	0.00	0.00	332.05
Flatbed Truck	2	0.07	0.06	0.63	0.05	1.12	0.00	180.33	0.00	0.00	180.40	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
Staff & Security Truck	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
Pickup Truck	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
Water/Soiltac Truck	5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36	14	0.71	0.64	5.24	2.48	11.69	0.01	1,327.54	0.00	0.00	1,328.20	8	0.41	0.36	2.99	1.42	6.68	0.01	758.59	0.00	0.00	758.97	8	0.41	0.36	2.99	1.42	6.68	0.01	758.59	0.00	0.00	758.97
General Materials Delivery Truck for general cons	-	-	-	-	-	-	-	-	-	-	-	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
General Materials Delivery Truck for bridge	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32
Suncatcher Pedestals Delivery Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
Stirling Engines Delivery Truck	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
Suncatcher Metal Supports Delivery Truck	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
Suncatcher Mirrors Delivery Truck	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
Electrical and Control Systems Delivery Truck	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
Azimuth and Elevation Drive Delivery Truck	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
Water Delivery Trucks	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
Worker Passenger Vehicles	67	0.10	0.07	6.69	0.46	0.62	0.01	959.11	0.09	0.09	987.72	180	0.26	0.20	17.98	1.24	1.68	0.02	2,576.72	0.25	0.23	2,653.56	249	0.36	0.27	24.87	1.71	2.32	0.03	3,564.46	0.35	0.32	3,670.76	219	0.31	0.24	21.88	1.51	2.04	0.03	3,135.01	0.31	0.28	3,228.50
Train																																												
BNSF Locomotive Engine (in motion)	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
BNSF Locomotive Engine (idling)	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
Total	**186**	**6.91**	**6.31**	**82.89**	**17.68**	**124.07**	**0.16**	**15,154.01**	**2.11**	**0.20**	**15,260.30**	**355**	**14.65**	**13.38**	**193.54**	**37.03**	**240.89**	**0.29**	**28,219.43**	**5.02**	**0.35**	**28,432.86**	**420**	**13.71**	**12.51**	**205.83**	**35.72**	**233.28**	**0.29**	**28,565.65**	**5.47**	**0.44**	**28,815.69**	**396**	**16.75**	**15.32**	**231.98**	**44.49**	**300.62**	**0.36**	**34,809.01**	**6.27**	**0.40**	**35,063.84**

MONTHLY EMISSIONS (month 21-41)

	Month 21 Daily Emissions (lb/day)											Month 22 Daily Emissions (lb/day)											Month 23 Daily Emissions (lb/day)											Month 24 Daily Emissions (lb/day)										
	Quantity Mo 21	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 22	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 23	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 24	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																												
Air Compressor	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94
Crane large	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07
Dozer	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	0.00	273.59
Grader	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	1	0.34	0.31	3.66	1.54	3.04	0.00	276.26	0.14	0.00	279.18	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane																																												
Aerial Lift	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99
Fork Lift	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88
Telehandler	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.

Month 5 Daily Emissions (lb/day)											Month 6 Daily Emissions (lb/day)											Month 7 Daily Emissions (lb/day)											Month 8 Daily Emissions (lb/day)										
Quantity Mo 5	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 6	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 7	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 8	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
8	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33	8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11	8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11	8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
4	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	4	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	4	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	1	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18	5	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94	5	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94	5	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	3	1.63	1.50	15.45	3.63	28.22	0.03	2,585.16	0.33	-	2,592.05	2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
6	2.19	2.01	16.36	5.80	59.64	0.07	5,787.01	0.52	-	5,798.01	5	1.82	1.68	13.63	4.83	49.70	0.05	4,822.51	0.44	-	4,831.67	4	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59	4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19	3	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39	3	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47	5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	5	0.03	0.03	0.22	0.10	0.49	0.00	55.78	0.00	0.00	55.81	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	-	-	-	-	-	-	-	-	-	-	-
1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	-	-	-	-	-	-	-	-	-	-	-
5	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
7	0.36	0.32	2.62	1.24	5.84	0.01	663.77	0.00	0.00	664.10	7	0.36	0.32	2.62	1.24	5.84	0.01	663.77	0.00	0.00	664.10	5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36	5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	12	0.07	0.06	0.53	0.25	1.18	0.00	133.97	0.00	0.00	133.94	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	-	-	-	-	-	-	-	-	-	-	-
3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	1	0.03	0.02	0.19	0.09	0.43	0.00	48.81	0.00	0.00	48.83
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
219	0.31	0.24	21.88	1.51	2.04	0.03	3,135.01	0.31	0.28	3,228.50	479	0.68	0.52	47.85	3.29	4.46	0.07	6,856.94	0.67	0.61	7,061.43	487	0.70	0.53	48.65	3.35	4.54	0.07	6,971.46	0.68	0.62	7,179.37	385	0.55	0.42	38.46	2.65	3.59	0.05	5,511.32	0.54	0.49	5,675.68
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
399	**17.48**	**16.00**	**248.63**	**47.64**	**307.97**	**0.36**	**35,555.00**	**6.84**	**0.40**	**35,821.65**	**686**	**20.30**	**18.53**	**334.70**	**58.92**	**337.35**	**0.43**	**42,084.88**	**9.04**	**0.73**	**42,501.16**	**674**	**19.04**	**17.37**	**315.73**	**55.54**	**311.96**	**0.40**	**39,646.50**	**8.55**	**0.74**	**40,055.45**	**560**	**16.14**	**14.73**	**281.12**	**47.98**	**249.80**	**0.32**	**32,182.01**	**7.81**	**0.61**	**32,534.82**

Month 25 Daily Emissions (lb/day)											Month 26 Daily Emissions (lb/day)											Month 27 Daily Emissions (lb/day)											Month 28 Daily Emissions (lb/day)										
Quantity Mo 25	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 26	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 27	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 28	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 9 Daily Emissions (lb/day)										
Quantity Mo 9	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-
5	1.45	1.33	10.21	2.56	15.95	0.02	1,457.42	0.23	-	1,462.27
4	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
5	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
3	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
334	0.48	0.36	33.36	2.30	3.11	0.05	4,781.25	0.47	0.43	4,923.84
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
499	**15.14**	**13.82**	**225.50**	**45.45**	**226.47**	**0.30**	**28,823.06**	**6.31**	**0.54**	**29,124.00**

Month 10 Daily Emissions (lb/day)										
Quantity Mo 10	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
7	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
1	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
2	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
305	0.44	0.33	30.47	2.10	2.84	0.04	4,366.11	0.43	0.39	4,496.32
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
461	**13.94**	**12.73**	**213.23**	**42.76**	**203.37**	**0.27**	**26,227.07**	**6.09**	**0.51**	**26,511.80**

Month 11 Daily Emissions (lb/day)										
Quantity Mo 11	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
7	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
-	-	-	-	-	-	-	-	-	-	-
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
305	0.44	0.33	30.47	2.10	2.84	0.04	4,366.11	0.43	0.39	4,496.32
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
456	**12.18**	**11.11**	**190.10**	**38.48**	**164.23**	**0.23**	**22,620.33**	**5.45**	**0.51**	**22,891.67**

Month 12 Daily Emissions (lb/day)										
Quantity Mo 12	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
7	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
-	-	-	-	-	-	-	-	-	-	-
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
305	0.44	0.33	30.47	2.10	2.84	0.04	4,366.11	0.43	0.39	4,496.32
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
268.00	**2.90**	**2.61**	**83.77**	**7.59**	**52.65**	**0.09**	**10048.41**	**1.96**	**0.33**	**10190.75**

Month 29 Daily Emissions (lb/day)										
Quantity Mo 29	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 13 Daily Emissions (lb/day)										
Quantity Mo 13	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
7	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
-	-	-	-	-	-	-	-	-	-	-
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
357	0.51	0.39	35.66	2.46	3.33	0.05	5,110.50	0.50	0.46	5,262.90
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
506	**11.94**	**10.88**	**192.01**	**37.49**	**161.77**	**0.24**	**23,084.63**	**5.40**	**0.57**	**23,375.61**

Month 14 Daily Emissions (lb/day)										
Quantity Mo 14	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
9	2.50	2.30	22.64	5.62	43.15	0.04	3,727.85	0.51	-	3,738.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
341	0.49	0.37	34.06	2.35	3.18	0.05	4,881.45	0.48	0.44	5,027.03
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
503	**14.31**	**13.07**	**252.55**	**42.01**	**223.87**	**0.29**	**28,902.25**	**7.03**	**0.55**	**29,221.13**

Month 15 Daily Emissions (lb/day)										
Quantity Mo 15	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
9	2.50	2.30	22.64	5.62	43.15	0.04	3,727.85	0.51	-	3,738.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
9	0.05	0.05	9.56	0.09	3.92	-	592.75	0.77	-	608.81
8	0.14	0.14	69.38	0.24	9.95	-	1,529.25	2.03	-	1,571.95
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
347	0.50	0.38	34.66	2.39	3.23	0.05	4,967.34	0.48	0.45	5,115.48
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
512	**14.01**	**12.79**	**286.36**	**41.42**	**224.76**	**0.29**	**29,438.82**	**8.08**	**0.56**	**29,782.09**

Month 16 Daily Emissions (lb/day)										
Quantity Mo 16	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
7	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
1	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
332	0.47	0.36	33.16	2.28	3.09	0.05	4,752.62	0.46	0.43	4,894.35
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
490	**12.84**	**11.72**	**255.21**	**38.77**	**202.26**	**0.27**	**27,019.92**	**7.16**	**0.54**	**27,337.89**

Month 17 Daily Emissions (lb/day)										
Quantity Mo 17	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
6	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
1	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
2	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
2	0.31	0.29	3.29	1.34	2.95	0.00	280.10	0.12	-	282.64
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
325	0.46	0.35	32.46	2.24	3.03	0.05	4,652.41	0.45	0.42	4,791.16
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
477	**11.97**	**10.91**	**238.58**	**36.26**	**183.91**	**0.25**	**25,114.98**	**6.69**	**0.53**	**25,420.28**

Month 33 Daily Emissions (lb/day)										
Quantity Mo 33	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 18 Daily Emissions (lb/day)										
Quantity Mo 18	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
-	-	-	-	-	-	-	-	-	-	-
1	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
6	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
-	-	-	-	-	-	-	-	-	-	-
1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
1	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
1	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
280	0.40	0.30	27.97	1.93	2.61	0.04	4,008.23	0.39	0.36	4,127.77
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
419	**8.31**	**7.55**	**188.51**	**27.25**	**125.09**	**0.18**	**19,071.59**	**5.34**	**0.47**	**19,330.64**

Month 19 Daily Emissions (lb/day)										
Quantity Mo 19	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
-	-	-	-	-	-	-	-	-	-	-
1	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
5	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
-	-	-	-	-	-	-	-	-	-	-
1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
-	-	-	-	-	-	-	-	-	-	-
2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
-	-	-	-	-	-	-	-	-	-	-
1	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8	0.28	0.25	2.50	0.22	4.46	0.01	721.34	0.00	0.00	721.60
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
247	0.35	0.27	24.67	1.70	2.30	0.03	3,535.83	0.34	0.32	3,641.28
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
370	**5.56**	**5.03**	**123.62**	**17.29**	**84.79**	**0.14**	**14,416.28**	**3.42**	**0.43**	**14,621.73**

Month 20 Daily Emissions (lb/day)										
Quantity Mo 20	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
5	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
-	-	-	-	-	-	-	-	-	-	-
1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
-	-	-	-	-	-	-	-	-	-	-
2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
-	-	-	-	-	-	-	-	-	-	-
1	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8	0.28	0.25	2.50	0.22	4.46	0.01	721.34	0.00	0.00	721.60
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
226	0.32	0.25	22.58	1.55	2.11	0.03	3,235.22	0.32	0.29	3,331.70
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
348	**5.38**	**4.87**	**119.90**	**16.47**	**83.22**	**0.13**	**13,987.50**	**3.33**	**0.40**	**14,182.70**

Month 38 Daily Emissions (lb/day)										
Quantity Mo 38	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Monthly Comparison of Construction Equipment Emissions:

Month of Contruction	Total Equipment Quantity	Daily Emissions (lb/day)									
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	186	6.91	6.31	82.89	17.68	124.07	0.16	15154.01	2.11	0.200	15260.30
2	355	14.65	13.38	193.54	37.03	240.89	0.29	28219.43	5.02	0.348	28432.86
3	420	13.71	12.51	205.83	35.72	233.28	0.29	28565.65	5.47	0.436	28815.69
4	396	16.75	15.32	231.98	44.49	300.62	0.36	34809.01	6.27	0.397	35063.84
5	399	17.48	16.00	248.63	47.64	307.97	0.36	35555.00	6.84	0.397	35821.65
6	686	20.30	18.53	334.70	58.92	337.35	0.43	42084.88	9.04	0.730	42501.16
7	674	19.04	17.37	315.73	55.54	311.96	0.40	39646.50	8.55	0.740	40055.45
8	560	16.14	14.73	281.12	47.98	249.80	0.32	32182.01	7.81	0.609	32534.82
9	499	15.14	13.82	225.50	45.45	226.47	0.30	28823.06	6.31	0.544	29124.00
10	461	13.94	12.73	213.23	42.76	203.37	0.27	26227.07	6.09	0.506	26511.80
11	456	12.18	11.11	190.10	38.48	164.23	0.23	22620.33	5.45	0.506	22891.67
12	456	12.18	11.11	190.10	38.48	164.23	0.23	22620.33	5.45	0.506	22891.67
13	506	11.94	10.88	192.01	37.49	161.77	0.24	23084.63	5.40	0.573	23375.61
14	503	14.31	13.07	252.55	42.01	223.87	0.29	28902.25	7.03	0.552	29221.13
15	512	14.01	12.79	286.36	41.42	224.76	0.29	29438.82	8.08	0.560	29782.09
16	490	12.84	11.72	255.21	38.77	202.26	0.27	27019.92	7.16	0.541	27337.89
17	477	11.97	10.91	238.58	36.26	183.91	0.25	25114.98	6.69	0.532	25420.28
18	419	8.31	7.55	188.51	27.25	125.09	0.18	19071.59	5.34	0.474	19330.64
19	370	5.56	5.03	123.62	17.29	84.79	0.14	14416.28	3.42	0.431	14621.73
20	348	5.38	4.87	119.90	16.47	83.22	0.13	13987.50	3.33	0.404	14182.70
21	332	6.02	5.46	123.72	17.62	112.20	0.16	16740.69	3.31	0.383	16928.84
22	330	5.68	5.14	119.96	16.07	109.16	0.15	16450.11	3.17	0.381	16634.92
23	327	5.38	4.87	117.03	14.95	105.41	0.15	16052.41	3.10	0.381	16235.67
24	326	5.12	4.64	114.44	13.95	102.68	0.15	15780.72	3.01	0.381	15962.08
25	326	5.12	4.64	114.44	13.95	102.68	0.15	15780.72	3.01	0.381	15962.08
26	319	3.36	3.01	97.68	9.29	60.05	0.10	11506.14	2.61	0.381	11679.13
27	318	3.10	2.78	95.09	8.29	57.32	0.10	11234.46	2.52	0.381	11405.54
28	276	3.04	2.74	90.89	8.00	56.93	0.09	10633.22	2.47	0.327	10786.37
29	274	2.94	2.64	90.14	7.65	55.26	0.09	10443.57	2.47	0.327	10596.63
30	274	2.94	2.64	90.14	7.65	55.26	0.09	10443.57	2.47	0.327	10596.63
31	274	2.94	2.64	90.14	7.65	55.26	0.09	10443.57	2.47	0.327	10596.63
32	268	2.90	2.61	83.77	7.59	52.65	0.09	10048.41	1.96	0.327	10190.75
33	292	2.94	2.63	86.17	7.75	52.87	0.10	10391.97	1.99	0.358	10544.56
34	292	2.94	2.63	86.17	7.75	52.87	0.10	10391.97	1.99	0.358	10544.56
35	296	3.01	2.70	120.86	7.87	57.84	0.10	11156.60	3.01	0.358	11330.53
36	259	2.95	2.66	117.16	7.62	57.50	0.09	10626.94	2.95	0.310	10785.08
37	254	2.78	2.51	115.60	7.48	54.71	0.09	10176.10	2.95	0.310	10334.08
38	254	2.78	2.51	115.60	7.48	54.71	0.09	10176.10	2.95	0.310	10334.08
39	254	2.78	2.51	115.60	7.48	54.71	0.09	10176.10	2.95	0.310	10334.08
40	253	2.78	2.51	115.50	7.48	54.70	0.09	10161.79	2.95	0.308	10319.34
41	253	2.78	2.51	115.50	7.48	54.70	0.09	10161.79	2.95	0.308	10319.34
MAX VALUE (lb/day)	**686**	**20.30**	**18.53**	**334.70**	**58.92**	**337.35**	**0.43**	**42084.9**	**9.04**	**0.740**	**42501.2**

Months for Annual Contruction		Annual Emissions (ton/year)									
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	**12**	2.32	2.12	35.27	6.63	37.24	0.047	4634.59	0.97	0.0769	4678.76
2	**13**	2.38	2.18	36.69	6.89	37.73	0.048	4737.69	1.01	0.0818	4784.26
3	**14**	2.38	2.17	37.46	6.95	37.50	0.048	4746.57	1.04	0.0844	4794.51
4	**15**	2.38	2.18	38.51	7.03	37.39	0.048	4757.92	1.07	0.0861	4807.07
5	**16**	2.33	2.13	38.81	6.95	36.11	0.047	4656.66	1.08	0.0879	4706.64
6	**17**	2.26	2.06	38.68	6.81	34.50	0.046	4520.94	1.08	0.0897	4571.42
7	**18**	2.11	1.92	36.78	6.39	31.74	0.043	4221.77	1.03	0.0863	4270.20
8	**19**	1.93	1.76	34.28	5.90	28.79	0.039	3893.78	0.97	0.0823	3939.56
9	**20**	1.79	1.63	32.18	5.49	26.62	0.037	3657.25	0.91	0.0797	3700.99
10	**21**	1.67	1.52	30.86	5.13	25.14	0.035	3500.18	0.87	0.0776	3542.45
11	**22**	1.56	1.43	29.65	4.78	23.91	0.033	3373.08	0.83	0.0760	3414.05
12	**23**	1.48	1.34	28.70	4.47	23.15	0.032	3287.69	0.80	0.0743	3327.52
13	**24**	1.38	1.26	27.71	4.15	22.35	0.031	3198.78	0.77	0.0727	3237.44
14	**25**	1.30	1.18	26.71	3.85	21.58	0.030	3103.83	0.74	0.0702	3141.06
15	**26**	1.15	1.05	24.69	3.42	19.45	0.027	2877.68	0.68	0.0680	2913.01
16	**27**	1.01	0.92	22.21	2.99	17.27	0.025	2641.02	0.61	0.0657	2674.12
17	**28**	0.88	0.80	20.07	2.59	15.39	0.023	2427.99	0.55	0.0629	2458.95
18	**29**	0.77	0.69	18.14	2.22	13.71	0.021	2237.27	0.49	0.0602	2266.24
19	**30**	0.70	0.63	16.86	1.97	12.80	0.020	2125.10	0.45	0.0583	2152.70
20	**31**	0.66	0.60	16.43	1.84	12.42	0.019	2073.46	0.44	0.0569	2100.37
21	**32**	0.63	0.57	15.96	1.72	12.02	0.019	2022.25	0.42	0.0559	2048.48
22	**33**	0.59	0.53	15.47	1.60	11.25	0.018	1939.72	0.41	0.0556	1965.48
23	**34**	0.56	0.50	15.03	1.49	10.52	0.017	1860.96	0.39	0.0553	1886.31
24	**35**	0.52	0.47	15.08	1.40	9.90	0.016	1797.31	0.39	0.0550	1822.54
25	**36**	0.50	0.45	15.11	1.31	9.31	0.016	1730.32	0.39	0.0541	1755.24
26	**37**	0.47	0.42	15.13	1.23	8.69	0.015	1657.45	0.39	0.0531	1682.08
27	**38**	0.46	0.41	15.36	1.21	8.62	0.015	1640.16	0.39	0.0522	1664.59
28	**39**	0.45	0.41	15.63	1.20	8.59	0.014	1626.41	0.40	0.0513	1650.66
29	**40**	0.45	0.41	15.95	1.19	8.56	0.014	1620.28	0.40	0.0510	1644.59
30	**41**	0.45	0.40	16.28	1.19	8.55	0.014	1616.61	0.41	0.0508	1640.99
MAX VALUE (ton/year)		**2.38**	**2.18**	**38.81**	**7.03**	**37.73**	**0.05**	**4757.92**	**1.08**	**0.0897**	**4807.07**

Combustion Exhaust Emissions On-site (annual)

Maximum annual construction on-site exhausted emissions occurs in months 2-13.
Construction Assumptions - 26 days per month

Equipment	Number of Vehicles per year	Hours/Day	Emission rate per piece of equipment (lb/hr)									Annual Emissions (ton/year)										Number of Vehicles (entire construction period)	entire construction period emissions (ton)									
			PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																
Air Compressor	26	6	0.027	0.025	0.283	0.118	0.239	0.000	22.251	0.011	0.000	22.474	0.05	0.05	0.55	0.23	0.47	0.00	43.32	0.02	0.00	43.75	37	0.07	0.07	0.78	0.33	0.66	0.00	61.65	0.03	0.00	62.27
Asphalt Paver	1	7	0.085	0.078	0.522	0.164	0.968	0.001	69.134	0.015	0.000	69.444	0.01	0.01	0.05	0.02	0.09	0.00	6.36	0.00	0.00	6.39	1	0.01	0.01	0.05	0.02	0.09	0.00	6.36	0.00	0.00	6.39
Backhoe	66	6	0.051	0.047	0.362	0.091	0.566	0.001	51.682	0.008	0.000	51.854	0.25	0.23	1.75	0.44	2.74	0.00	250.09	0.04	0.00	250.93	88	0.33	0.31	2.34	0.59	3.65	0.00	333.46	0.05	0.00	334.57
Compactor	42	6	0.064	0.059	0.417	0.120	0.738	0.001	58.936	0.011	0.000	59.163	0.20	0.18	1.28	0.37	2.27	0.00	181.49	0.03	0.00	182.19	53	0.25	0.23	1.62	0.47	2.87	0.00	229.02	0.04	0.00	229.91
Crane small	81	5	0.054	0.049	0.488	0.121	0.929	0.001	80.272	0.011	0.000	80.502	0.29	0.27	2.65	0.66	5.05	0.00	436.16	0.06	0.00	437.40	218	0.79	0.72	7.13	1.77	13.59	0.01	1173.86	0.16	0.00	1177.21
Crane large	19	7	0.068	0.063	0.662	0.182	1.771	0.002	179.940	0.016	0.000	180.284	0.12	0.11	1.13	0.31	3.01	0.00	305.78	0.03	0.00	306.37	35	0.21	0.20	2.07	0.57	5.54	0.01	563.28	0.05	0.00	564.36
Dozer	9	7	0.078	0.072	0.574	0.205	1.942	0.002	165.982	0.018	0.000	166.371	0.06	0.06	0.48	0.17	1.61	0.00	137.49	0.02	0.00	137.81	14	0.10	0.09	0.74	0.26	2.50	0.00	213.88	0.02	0.00	214.38
Generator	54	9	0.029	0.026	0.292	0.113	0.307	0.000	30.595	0.010	0.000	30.810	0.18	0.16	1.82	0.70	1.92	0.00	190.72	0.06	0.00	192.06	83	0.27	0.25	2.80	1.08	2.95	0.00	293.15	0.10	0.00	295.20
Grader	28	7	0.078	0.072	0.740	0.174	1.352	0.001	123.810	0.016	0.000	124.140	0.20	0.18	1.88	0.44	3.42	0.00	313.67	0.04	0.00	314.50	36	0.25	0.23	2.41	0.57	4.40	0.00	403.28	0.05	0.00	404.36
Light Tower	19	7	0.026	0.024	0.293	0.103	0.278	0.000	27.964	0.009	0.000	28.160	0.05	0.04	0.54	0.19	0.51	0.00	51.39	0.02	0.00	51.75	32	0.08	0.07	0.91	0.32	0.86	0.00	86.55	0.03	0.00	87.16
Loader	40	6	0.056	0.052	0.421	0.149	1.534	0.002	148.843	0.013	0.000	149.126	0.19	0.17	1.42	0.50	5.17	0.01	501.54	0.05	0.00	502.49	54	0.26	0.24	1.91	0.68	6.98	0.01	677.08	0.06	0.00	678.37
Maxi Sneeker (Trencher)	48	8	0.040	0.037	0.436	0.184	0.362	0.000	32.888	0.017	0.000	33.236	0.21	0.20	2.29	0.96	1.90	0.00	172.39	0.09	0.00	174.21	78	0.34	0.32	3.71	1.56	3.08	0.00	280.13	0.14	0.00	283.09
Skid Steer (Bobcat)	27	7	0.022	0.020	0.250	0.078	0.246	0.000	25.496	0.007	0.000	25.645	0.06	0.05	0.65	0.20	0.64	0.00	66.58	0.02	0.00	66.97	47	0.10	0.09	1.14	0.36	1.12	0.00	115.90	0.03	0.00	116.58
Welding Machine	49	5	0.029	0.027	0.304	0.124	0.273	0.000	25.935	0.011	0.000	26.171	0.10	0.09	1.05	0.43	0.94	0.00	89.21	0.04	0.00	90.02	63	0.13	0.12	1.35	0.55	1.21	0.00	114.70	0.05	0.00	115.74
Equipment fueled with Propane																																
Aerial Lift	54	6	0.003	0.003	1.417	0.005	0.203	0.000	31.235	0.042	0.000	32.107	0.01	0.01	6.09	0.02	0.87	0.00	134.19	0.18	0.00	137.94	159	0.04	0.04	17.93	0.06	2.57	0.00	395.12	0.53	0.00	406.15
Fork Lift	94	4	0.002	0.002	0.295	0.003	0.121	0.000	18.295	0.024	0.000	18.791	0.01	0.01	1.30	0.01	0.53	0.00	80.48	0.10	0.00	82.66	214	0.02	0.02	2.95	0.03	1.21	0.00	183.22	0.24	0.00	188.19
Telehandler	35	6	0.003	0.003	1.417	0.005	0.203	0.000	31.235	0.042	0.000	32.107	0.01	0.01	3.95	0.01	0.57	0.00	86.98	0.12	0.00	89.40	131	0.03	0.03	14.77	0.05	2.12	0.00	325.54	0.43	0.00	334.63
Vehicles with Onroad Engines for Emissions Estimates																																
Concrete Delivery Truck for general construction	12	12	0.002	0.002	0.016	0.008	0.036	0.000	4.067	0.000	0.000	4.069	0.00	0.00	0.03	0.01	0.07	0.00	7.61	0.00	0.00	7.62	14	0.00	0.00	0.04	0.02	0.08	0.00	8.88	0.00	0.00	8.89
Concrete Delivery Truck for bridge	10	12	0.000	0.000	0.004	0.002	0.008	0.000	0.930	0.000	0.000	0.930	0.00	0.00	0.01	0.00	0.01	0.00	1.45	0.00	0.00	1.45	11	0.00	0.00	0.01	0.00	0.01	0.00	1.60	0.00	0.00	1.60
Concrete Pump Truck for bridge	6	12	0.000	0.000	0.000	0.000	0.001	0.000	0.058	0.000	0.000	0.058	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	7	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06
Dump Truck	46	12	0.002	0.002	0.016	0.007	0.035	0.000	3.951	0.000	0.000	3.953	0.02	0.01	0.11	0.05	0.25	0.00	28.35	0.00	0.00	28.37	56	0.02	0.02	0.14	0.06	0.30	0.00	34.52	0.00	0.00	34.53
Flatbed Truck	120	12	0.003	0.003	0.026	0.002	0.046	0.000	7.514	0.000	0.000	7.517	0.05	0.05	0.49	0.04	0.87	0.00	140.66	0.00	0.00	140.71	310	0.14	0.13	1.26	0.11	2.25	0.00	363.37	0.00	0.00	363.51
Staff & Security Truck	72	24	0.000	0.000	0.009	0.000	0.000	0.000	1.437	0.000	0.000	1.558	0.00	0.00	0.21	0.01	0.00	0.00	32.29	0.01	0.01	35.00	246	0.00	0.00	0.71	0.02	0.01	0.00	110.33	0.03	0.03	119.58
Pickup Truck	132	12	0.000	0.000	0.006	0.000	0.001	0.000	0.901	0.000	0.000	0.928	0.00	0.00	0.13	0.01	0.01	0.00	18.56	0.00	0.00	19.11	451	0.01	0.00	0.44	0.03	0.04	0.00	63.41	0.01	0.01	65.30
Water/Soiltac Truck	79	12	0.004	0.004	0.031	0.015	0.070	0.000	7.902	0.000	0.000	7.906	0.05	0.05	0.38	0.18	0.86	0.00	97.38	0.00	0.00	97.43	160	0.11	0.09	0.78	0.37	1.74	0.00	197.23	0.00	0.00	197.33
General Materials Delivery Truck for general cons	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	24	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24
General Materials Delivery Truck for bridge	22	24	0.000	0.000	0.002	0.001	0.004	0.000	0.465	0.000	0.000	0.465	0.00	0.00	0.01	0.01	0.03	0.00	3.19	0.00	0.00	3.19	24	0.00	0.00	0.01	0.01	0.03	0.00	3.48	0.00	0.00	3.48
Suncatcher Pedestals Delivery Truck	13	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.00	0.00	0.03	0.02	0.07	0.00	8.25	0.00	0.00	8.25	28	0.01	0.01	0.07	0.03	0.16	0.00	17.77	0.00	0.00	17.77
Stirling Engines Delivery Truck	72	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.02	0.02	0.18	0.09	0.40	0.00	45.68	0.00	0.00	45.71	246	0.08	0.07	0.62	0.29	1.37	0.00	156.08	0.00	0.00	156.16
Suncatcher Metal Supports Delivery Truck	132	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.04	0.04	0.33	0.16	0.74	0.00	83.75	0.00	0.00	83.79	451	0.15	0.14	1.13	0.53	2.52	0.00	286.15	0.00	0.00	286.30
Suncatcher Mirrors Delivery Truck	84	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.03	0.03	0.21	0.10	0.47	0.00	53.30	0.00	0.00	53.32	287	0.10	0.09	0.72	0.34	1.60	0.00	182.10	0.00	0.00	182.19
Electrical and Control Systems Delivery Truck	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	82	0.03	0.02	0.21	0.10	0.46	0.00	52.03	0.00	0.00	52.05
Azimuth and Elevation Drive Delivery Truck	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	82	0.03	0.02	0.21	0.10	0.46	0.00	52.03	0.00	0.00	52.05
Water Delivery Trucks	468	24	0.000	0.000	0.003	0.000	0.005	0.000	0.829	0.000	0.000	0.829	0.05	0.04	0.42	0.04	0.75	0.00	121.01	0.00	0.00	121.05	1599	0.16	0.14	1.43	0.12	2.56	0.00	413.45	0.00	0.00	413.60
Worker Passenger Vehicles	3824	24	0.000	0.000	0.004	0.000	0.000	0.000	0.596	0.000	0.000	0.614	0.07	0.05	4.97	0.34	0.46	0.01	711.63	0.07	0.06	732.86	9762	0.18	0.14	12.68	0.87	1.18	0.02	1816.67	0.18	0.16	1870.85
Train																																
BNSF Locomotive Engine (in motion)	12	0.53	0.199	0.183	1.079	0.353	6.689	0.004	411.452	0.032	0.011	415.400	0.02	0.02	0.09	0.03	0.56	0.00	34.23	0.00	0.00	34.56	41	0.06	0.05	0.31	0.10	1.90	0.00	116.96	0.01	0.00	118.08
BNSF Locomotive Engine (idling)	48	1	0.006	0.006	0.094	0.092	0.119	0.004	411.452	0.032	0.011	415.400	0.00	0.00	0.06	0.06	0.07	0.00	256.75	0.02	0.01	259.21	164	0.01	0.01	0.20	0.20	0.25	0.01	877.21	0.07	0.02	885.63
	5868											Total	**2.38**	**2.18**	**36.69**	**6.89**	**37.73**	**0.05**	**4737.69**	**1.01**	**0.08**	**4784.26**		**4.38**	**3.99**	**85.61**	**12.59**	**72.45**	**0.10**	**10224.76**	**2.32**	**0.22**	**10342.77**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Calico Solar
Fugitive Dust Emissions (on-site)
Peak month = 6

Maximum annual construction on-site exhausted emissions occurs in months 2-13.

Travel on sealed roads (paved)

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
7.4 sL = road surface silt loading (grams per square meter) (g/m^2), from Table 13.2.1-4 for Municipal solid waste landfill
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants
Solar One Technicians

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	Number of Vehicles (month 6)	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on sealed roads	Max Daily Distance per Vehicle to drive on sealed roads (mile/day)	Max Daily VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Number of Vehicles per year (months 2-13)	Max Annual VMT (all vehicles)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Diesel Construction Equipment											
Air Compressor	3	0	0%	0.0	0	0.5	6	26	0	0.000	0.002
Asphalt Paver	0	0.2	0%	0.0	0	25	7	1	0	0.133	0.886
Backhoe	6	0	0%	0.0	0	11	6	66	0	0.038	0.258
Compactor	4	0	0%	0.0	0	10	6	42	0	0.033	0.224
Crane small	8	0.5	50%	0.3	2	10	5	81	526.5	0.033	0.224
Crane large	4	0.5	0%	0.0	0	35	7	19	0	0.220	1.468
Dozer	1	0	0%	0.0	0	20	7	9	0	0.095	0.634
Generator	5	0	0%	0.0	0	0.5	9	54	0	0.000	0.002
Grader	4	0	0%	0.0	0	20	7	28	0	0.095	0.634
Light Tower	2	0	0%	0.0	0	0.25	7	19	0	0.000	0.000
Loader	5	0	0%	0.0	0	25	6	40	0	0.133	0.886
Maxi Sneeker (Trencher)	5	0	0%	0.0	0	5	8	48	0	0.012	0.079
Skid Steer (Bobcat)	4	0	0%	0.0	0	2	7	27	0	0.003	0.020
Welding Machine	5	0	0%	0.0	0	0.5	5	49	0	0.000	0.002
Equipment fueled with Propane											
Aerial Lift	6	1	50%	0.5	3	4	6	54	702	0.008	0.056
Fork Lift	8	1	50%	0.5	4	3	4	94	1222	0.005	0.036
Telehandler	6	1	50%	0.5	3	3	6	35	455	0.005	0.036
Vehicles with Onroad Engines for Emissions Estimates											
Concrete Delivery Truck for general construction	0	7	90%	6.3	0	20	12	12	1965.6	0.095	0.634
Concrete Delivery Truck for bridge	5	1.6	90%	1.4	7	20	12	10	374.4	0.095	0.634
Concrete Pump Truck for bridge	1	0.1	90%	0.1	0	20	12	6	14.04	0.095	0.634
Dump Truck	5	6.8	50%	3.4	17	20	12	46	4066.4	0.095	0.634
Flatbed Truck	10	27.2	100%	27.2	272	10	12	120	84864	0.033	0.224
Staff & Security Truck	6	48	100%	48.0	288	2.25	24	72	89856	0.003	0.023
Pickup Truck	11	6.8	95%	6.5	71	4	12	132	22170.72	0.008	0.056
Water/Soiltac Truck	7	13.6	25%	3.4	24	20	12	79	6983.6	0.095	0.634
General Materials Delivery Truck for general cor	3	7	100%	7.0	21	20	24	24	4368	0.095	0.634
General Materials Delivery Truck for bridge	12	1.6	100%	1.6	19	20	24	22	915.2	0.095	0.634
Suncatcher Pedestals Delivery Truck	3	7	50%	3.5	11	20	24	13	1183	0.095	0.634
Stirling Engines Delivery Truck	6	7	100%	7.0	42	20	24	72	13104	0.095	0.634
Suncatcher Metal Supports Delivery Truck	11	7	100%	7.0	77	20	24	132	24024	0.095	0.634
Suncatcher Mirrors Delivery Truck	7	7	100%	7.0	49	20	24	84	15288	0.095	0.634
Electrical and Control Systems Delivery Truck	2	7	100%	7.0	14	20	24	24	4368	0.095	0.634
Azimuth and Elevation Drive Delivery Truck	2	7	100%	7.0	14	20	24	24	4368	0.095	0.634
Water Delivery Trucks	39	6	100%	6.0	234	11.7	24	468	73008	0.042	0.283
Worker Passenger Vehicles	479	9	100%	9.0	4311	2	24	3824	894816	0.003	0.020

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Diesel Construction Equipment															
Air Compressor	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	0%	0%	0.09	0.09	0.45	0.45	0.11%	0.06	0.06	0.01	0.01	0.07	0.07	0.01	0.01
Crane large	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dozer	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane															
Aerial Lift	0%	0%	0.03	0.03	0.17	0.17	0.04%	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
Fork Lift	0%	0%	0.04	0.04	0.15	0.15	0.04%	0.02	0.02	0.01	0.01	0.02	0.02	0.00	0.00
Telehandler	0%	0%	0.02	0.02	0.11	0.11	0.03%	0.01	0.01	0.00	0.00	0.02	0.02	0.00	0.00
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.62	0.62	0.00	0.00	0.00	0.00	0.09	0.09
Concrete Delivery Truck for bridge	0%	0%	0.38	0.38	4.56	4.56	1.11%	0.12	0.12	0.06	0.06	0.68	0.68	0.02	0.02
Concrete Pump Truck for bridge	0%	0%	0.00	0.00	0.06	0.06	0.01%	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Dump Truck	0%	0%	0.90	0.90	10.78	10.78	2.63%	1.29	1.29	0.13	0.13	1.61	1.61	0.19	0.19
Flatbed Truck	0%	0%	5.07	5.07	60.89	60.89	14.84%	9.50	9.50	0.75	0.75	9.06	9.06	1.41	1.41
Staff & Security Truck	0%	0%	0.28	0.28	6.76	6.76	1.65%	1.05	1.05	0.04	0.04	0.93	0.93	0.15	0.15
Pickup Truck	0%	0%	0.33	0.33	4.00	4.00	0.97%	0.62	0.62	0.05	0.05	0.58	0.58	0.09	0.09
Water/Soiltac Truck	0%	0%	1.26	1.26	15.09	15.09	3.68%	2.21	2.21	0.19	0.19	2.26	2.26	0.33	0.33
General Materials Delivery Truck for general cor	0%	0%	0.55	0.55	13.31	13.31	3.25%	1.38	1.38	0.08	0.08	1.99	1.99	0.21	0.21
General Materials Delivery Truck for bridge	0%	0%	0.51	0.51	12.17	12.17	2.97%	0.29	0.29	0.08	0.08	1.82	1.82	0.04	0.04
Suncatcher Pedestals Delivery Truck	0%	0%	0.28	0.28	6.66	6.66	1.62%	0.38	0.38	0.04	0.04	1.00	1.00	0.06	0.06
Stirling Engines Delivery Truck	0%	0%	1.11	1.11	26.63	26.63	6.49%	4.15	4.15	0.17	0.17	3.98	3.98	0.62	0.62
Suncatcher Metal Supports Delivery Truck	0%	0%	2.03	2.03	48.82	48.82	11.90%	7.62	7.62	0.30	0.30	7.30	7.30	1.14	1.14
Suncatcher Mirrors Delivery Truck	0%	0%	1.29	1.29	31.07	31.07	7.57%	4.85	4.85	0.19	0.19	4.65	4.65	0.72	0.72
Electrical and Control Systems Delivery Truck	0%	0%	0.37	0.37	8.88	8.88	2.16%	1.38	1.38	0.06	0.06	1.33	1.33	0.21	0.21
Azimuth and Elevation Drive Delivery Truck	0%	0%	0.37	0.37	8.88	8.88	2.16%	1.38	1.38	0.06	0.06	1.33	1.33	0.21	0.21
Water Delivery Trucks	0%	0%	2.76	2.76	66.32	66.32	16.17%	10.35	10.35	0.41	0.41	9.88	9.88	1.54	1.54
Worker Passenger Vehicles	0%	0%	3.52	3.52	84.50	84.50	20.60%	8.77	8.77	0.48	0.48	11.45	11.45	1.19	1.19
TOTAL Fugitive emissions for vehicles traveled on sealed road (paved)			**21.20**	**21.20**	**410.25**	**410.25**		**56.09**	**56.09**	**3.11**	**3.11**	**59.98**	**59.98**	**8.24**	**8.24**

Travel on unpaved surfaces

$E = k * (s/12)^a * (W/3)^b * [(365 - P)/365]$ EPA AP-42 Section 13.2.2 Unpaved Roads Equations 1a and 2

E = size-specific emission factor (lb/VMT)

k, a, b = empirical constants

8.5 s = surface material silt content (%) Construction sites - Scraper routes

W = mean vehicle weight (tons)

constants

	$PM_{2.5}$	PM_{10}	Industrial Roads
k	0.15	1.5	
a	0.9	0.9	
b	0.45	0.45	

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)

Vehicle Type	Number of Vehicles (month 6)	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on unpaved roads	Max Daily Distance per Vehicle to drive on unpaved roads (mile/day)	Max Daily VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Number of Vehicles per year (months 2-13)	Max Annual VMT (all vehicles)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Diesel Construction Equipment											
Air Compressor	3	0	100%	0	0	0.5	6	26	0	0.046	0.460
Asphalt Paver	0	0.2	100%	0.2	0	25	7	1	5.2	0.268	2.676
Backhoe	6	0	100%	0	0	11	6	66	0	0.185	1.849
Compactor	4	0	100%	0	0	10	6	42	0	0.177	1.771
Crane small	8	0.5	50%	0.25	2	10	5	81	526.5	0.177	1.771
Crane large	4	0.5	100%	0.5	2	35	7	19	247	0.311	3.113
Dozer	1	0	100%	0	0	20	7	9	0	0.242	2.420
Generator	5	0	100%	0	0	0.5	9	54	0	0.046	0.460
Grader	4	0	100%	0	0	20	7	28	0	0.242	2.420
Light Tower	2	0	100%	0	0	0.25	7	19	0	0.034	0.337
Loader	5	0	100%	0	0	25	6	40	0	0.268	2.676
Maxi Sneeker (Trencher)	5	0	100%	0	0	5	8	48	0	0.130	1.297
Skid Steer (Bobcat)	4	0	100%	0	0	2	7	27	0	0.086	0.859
Welding Machine	5	0	100%	0	0	0.5	5	49	0	0.046	0.460
Equipment fueled with Propane											
Aerial Lift	6	1	50%	0.5	3	4	6	54	702	0.117	1.173
Fork Lift	8	1	50%	0.5	4	3	4	94	1222	0.103	1.030
Telehandler	6	1	50%	0.5	3	3	6	35	455	0.103	1.030
Vehicles with Onroad Engines for Emissions Estimates											
Concrete Delivery Truck for general construction	0	7	10%	0.7	0	20	12	12	218.4	0.242	2.420
Concrete Delivery Truck for bridge	5	1.6	10%	0.16	1	20	12	10	41.6	0.242	2.420
Concrete Pump Truck for bridge	1	0.1	10%	0.01	0	20	12	6	1.56	0.242	2.420
Dump Truck	5	6.8	50%	3.4	17	20	12	46	4066.4	0.242	2.420
Flatbed Truck	10	27.2	0%	0	0	10	12	120	0	0.177	1.771
Staff & Security Truck	6	48	0%	0	0	2.25	24	72	0	0.091	0.905
Pickup Truck	11	6.8	5%	0.34	4	4	12	132	1166.88	0.117	1.173
Water/Soiltac Truck	7	13.6	75%	10.2	71	20	12	79	20950.8	0.242	2.420
General Materials Delivery Truck for general cor	3	7	0%	0	0	20	24	24	0	0.242	2.420
General Materials Delivery Truck for bridge	12	1.6	0%	0	0	20	24	22	0	0.242	2.420
Suncatcher Pedestals Delivery Truck	3	7	50%	3.5	11	20	24	13	1183	0.242	2.420
Stirling Engines Delivery Truck	6	7	0%	0	0	20	24	72	0	0.242	2.420
Suncatcher Metal Supports Delivery Truck	11	7	0%	0	0	20	24	132	0	0.242	2.420
Suncatcher Mirrors Delivery Truck	7	7	0%	0	0	20	24	84	0	0.242	2.420
Electrical and Control Systems Delivery Truck	2	7	0%	0	0	20	24	24	0	0.242	2.420
Azimuth and Elevation Drive Delivery Truck	2	7	0%	0	0	20	24	24	0	0.242	2.420
Water Delivery Trucks	39	6	0%	0	0	11.7	24	468	0	0.190	1.901
Worker Passenger Vehicles	479	9	0%	0	0	2	24	3824	0	0.086	0.859

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Diesel Construction Equipment															
Air Compressor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	0%	68%	0.69	0.22	3.54	1.13	1.33%	0.47	0.15	0.07	0.02	0.35	0.11	0.05	0.01
Crane large	0%	68%	0.90	0.29	6.23	1.99	2.34%	0.38	0.12	0.09	0.03	0.62	0.20	0.04	0.01
Dozer	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane															
Aerial Lift	0%	68%	0.57	0.18	3.52	1.13	1.32%	0.41	0.13	0.06	0.02	0.35	0.11	0.04	0.01
Fork Lift	0%	68%	1.14	0.37	4.12	1.32	1.55%	0.63	0.20	0.11	0.04	0.41	0.13	0.06	0.02
Telehandler	0%	68%	0.51	0.16	3.09	0.99	1.16%	0.23	0.08	0.05	0.02	0.31	0.10	0.02	0.01
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.26	0.08	0.00	0.00	0.00	0.00	0.03	0.01
Concrete Delivery Truck for bridge	0%	68%	0.16	0.05	1.94	0.62	0.73%	0.05	0.02	0.02	0.01	0.19	0.06	0.01	0.00
Concrete Pump Truck for bridge	0%	68%	0.00	0.00	0.02	0.01	0.01%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0%	68%	3.43	1.10	41.14	13.16	15.46%	4.92	1.57	0.34	0.11	4.11	1.32	0.49	0.16
Flatbed Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	0%	68%	0.37	0.12	4.39	1.40	1.65%	0.68	0.22	0.04	0.01	0.44	0.14	0.07	0.02
Water/Soiltac Truck	0%	68%	14.40	4.61	172.78	55.29	64.91%	25.35	8.11	1.44	0.46	17.28	5.53	2.53	0.81
General Materials Delivery Truck for general cor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Pedestals Delivery Truck	0%	68%	1.06	0.34	25.41	8.13	9.55%	1.43	0.46	0.11	0.03	2.54	0.81	0.14	0.05
Stirling Engines Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Metal Supports Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Mirrors Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electrical and Control Systems Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Azimuth and Elevation Drive Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Delivery Trucks	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL Fugitive emissions for vehicles traveled on unpaved surfaces			**23.23**	**7.43**	**266.18**	**85.18**		**34.84**	**11.15**	**2.32**	**0.74**	**26.62**	**8.52**	**3.48**	**1.11**

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily

Bulldozing & grading EPA AP-42 Section 11.9

$E = p * 1 * s^{1.5} / M^{1.4}$ PM10 Emissions from bulldozing (lb/hr) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.75 p = particle size multiplier for PM10
6.9 s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9 M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.75 lb/hr of PM10

$E = p * 5.7 * s^{1.2} / M^{1.3}$ PM2.5 Emissions from bulldozing (lb/hr) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.105 p = particle size multiplier for PM2.5
6.9 s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9 M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.41 lb/hr of PM2.5

$E = p * 0.051 * S^{2.0}$ PM10 Emissions from grading (lb/VMT) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.6 p = particle size multiplier for PM10
7.1 S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
1.54 lb/VMT of PM10

$E = p * 0.040 * S^{2.5}$ PM2.5 Emissions from grading (lb/VMT) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.031 p = particle size multiplier for PM2.5
7.1 S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
0.17 lb/VMT of PM2.5

Equipment	Quantity/ month	Hours/ Day	VMT/day/ vehicle	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	Number of Vehicles per year (months 2-13)	VMT/year/ vehicle	PM10 Emissions (ton/yr)	PM2.5 Emissions (ton/yr)
Compactor	4	6	2	68%	3.95	0.43	42	2184	0.539	0.058
Dozer	1	7		68%	1.71	0.94	9		0.200	0.110
Maxi Sneeker (Trencher)	5	8	2	68%	4.94	0.53	48	2496	0.616	0.067
Grader	4	7	4	68%	7.90	0.85	28	2912	0.719	0.078
Skid Steer (Bobcat)	4	7		68%	7.17	3.94	27		0.629	0.346
				Grading Total	**16.78**	**1.81**			**1.87**	**0.20**
				Bulldozing Total	**8.87**	**4.88**			**0.83**	**0.46**
				Total	**25.66**	**6.69**			**2.70**	**0.66**

12 months of earth work
12 total construction hours per work day
26 construction days per month

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily

Dirt Piling or Material Handling PM10 Emissions from Material Handling (lb/ton) from EPA AP-42 Chapter 13.2.4 Eq. 1

$E = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ E = Emission factor (lb/ton material handled)
7.45 U = Mean Wind speed (mph) (from 1991-1995 Imperial Co. airport data)
12 M = Moisture content of surface material (%) (from Table 13.2.4-1 for cover at municipal landfill)

	$PM_{2.5}$	PM_{10}
k	0.053	0.35

0.00003 lb/ton of PM2.5
0.00022 lb/ton of PM10

Equipment	Quantity/ month	Hours/ Day	Material Handled per Day (ton)	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	Number of Vehicles per year (months 2-13)	Material Handled per year (ton)	PM10 Emissions (ton/yr)	PM2.5 Emissions (ton/yr)
Backhoe	6	6	3,236	68%	0.2268	0.0343	66	1009503	0.035	0.005
Loader	5	6	3,236	68%	0.2268	0.0343	40	1009503	0.035	0.005
Dump Truck	5	12	6,471	68%	0.4536	0.0687	6	2,019,006	0.071	0.011
				Total	**0.91**	**0.14**			**0.14**	**0.02**

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily
Assume 50% soil movement from loaders and 50% from backhoes

4,654 yd3/day 6,471 ton/day
1,452,000 yd3/project 2,019,006 tons/project 2781 density of soil (lb/yd3)
(USDA NRCS Physical Soil Properti 0.5 depth of disturbance (yards)
for Niland Fine Sand and Rositas Fine Sand soil)
total project
600 acres = 1,452,000 cubic yds, assume depth of soils moved is
3000 total acres disturbed as described in Table 3-17 of Project Description
only a small portion of this soil is picked up and moved via dump druck

Cover Storage Pile

$E = 1.7 * G/1.5 * (365-H)/235 * I/15 * J$ SCAQMD Table A9-9-E
PM10 Emission factor from wind erosion of storage piles per day per acre
15 G = Silt content (%) (from CEQA Handbook Table A9-9-E-1 for blended ore and dirt)
23 H = Number of days with >= 0.01 inches of precipitation per year (from Daggett FAA Airport Station)
34 I = Percentage of time that the unobstructed wind speed exceeds 12 mph at mean pile height
0.5 J = Fraction of TSP that is PM10 = 0.5
28.039 lb/acre/day

wind speed percentage based on 2005 wind speed data as recorded at Daggett FAA Airport station

Source	Quantity	Size of Pile (acre)	Hours/Day	Days/Year per Pile	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)
Cover Storage Pile	2	1	24	182.5	68%	17.95	3.98	1.64	0.36

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily
pile size assumed
piles present only for 6 months

Construction on-site fugitive dust PM10 | **Month 6 construction on-site fugitive dust** | **Months 2-13 construction on-site fugitive dust**

Vehicle Type	Number of Vehicles (month 6)	Max Daily Distance per Vehicle (mile/day)	Sealed Road - PM_{10} Fugitive Emissions	Paved Road - PM_{10} Fugitive Emissions	Unpaved Road - PM_{10} Fugitive Emissions	Earthmoving Equipment - PM_{10} Fugitive Emissions	Total PM_{10} Fugitive Emissions	Sealed Road - PM_{10} Fugitive Emissions	Paved Road - PM_{10} Fugitive Emissions	Unpaved Road - PM_{10} Fugitive Emissions	Earthmoving Equipment - PM_{10} Fugitive Emissions	Total PM_{10} Fugitive Emissions
			lb/day					ton/year				
Diesel Construction Equipment												
Air Compressor	3	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Asphalt Paver	0	0.2	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Backhoe	6	0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.04	0.04
Compactor	4	0	0.00	0.00	0.00	3.95	3.95	0.00	0.00	0.00	0.54	0.54
Crane small	8	0.5	0.45	0.00	1.13		1.58	0.06	0.00	0.15		0.21
Crane large	4	0.5	0.00	0.00	1.99		1.99	0.00	0.00	0.12		0.12
Dozer	1	0	0.00	0.00	0.00	1.71	1.71	0.00	0.00	0.00	0.20	0.20
Generator	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Grader	4	0	0.00	0.00	0.00	7.90	7.90	0.00	0.00	0.00	0.72	0.72
Light Tower	2	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Loader	5	0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.04	0.04
Maxi Sneeker (Trencher)	5	0	0.00	0.00	0.00	4.94	4.94	0.00	0.00	0.00	0.62	0.62
Skid Steer (Bobcat)	4	0	0.00	0.00	0.00	7.17	7.17	0.00	0.00	0.00	0.63	0.63
Welding Machine	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Equipment fueled with Propane												
Aerial Lift	6	1	0.17	0.00	1.13		1.29	0.02	0.00	0.13		0.15
Fork Lift	8	1	0.15	0.00	1.32		1.46	0.02	0.00	0.20		0.22
Telehandler	6	1	0.11	0.00	0.99		1.10	0.01	0.00	0.08		0.08
Vehicles with Onroad Engines for Emissions Estimates												
Concrete Delivery Truck for general construction	0	7	0.00	0.00	0.00		0.00	0.62	0.00	0.08		0.71
Concrete Delivery Truck for bridge	5	1.6	4.56	0.00	0.62		5.18	0.12	0.00	0.02		0.13
Concrete Pump Truck for bridge	1	0.1	0.06	0.00	0.01		0.06	0.00	0.00	0.00		0.01
Dump Truck	5	6.8	10.78	0.00	13.16	0.45	24.40	1.29	0.00	1.57	0.07	2.93
Flatbed Truck	10	27.2	60.89	0.00	0.00		60.89	9.50	0.00	0.00		9.50
Staff & Security Truck	6	48	6.76	0.00	0.00		6.76	1.05	0.00	0.00		1.05
Pickup Truck	11	6.8	4.00	0.00	1.40		5.40	0.62	0.00	0.22		0.84
Water/Soiltac Truck	7	13.6	15.09	0.00	55.29		70.38	2.21	0.00	8.11		10.33
General Materials Delivery Truck for general cor	3	7	13.31	0.00	0.00		13.31	1.38	0.00	0.00		1.38
General Materials Delivery Truck for bridge	12	1.6	12.17	0.00	0.00		12.17	0.29	0.00	0.00		0.29
Suncatcher Pedestals Delivery Truck	3	7	6.66	0.00	8.13		14.79	0.38	0.00	0.46		0.83
Stirling Engines Delivery Truck	6	7	26.63	0.00	0.00		26.63	4.15	0.00	0.00		4.15
Suncatcher Metal Supports Delivery Truck	11	7	48.82	0.00	0.00		48.82	7.62	0.00	0.00		7.62
Suncatcher Mirrors Delivery Truck	7	7	31.07	0.00	0.00		31.07	4.85	0.00	0.00		4.85
Electrical and Control Systems Delivery Truck	2	7	8.88	0.00	0.00		8.88	1.38	0.00	0.00		1.38
Azimuth and Elevation Drive Delivery Truck	2	7	8.88	0.00	0.00		8.88	1.38	0.00	0.00		1.38
Water Delivery Trucks	39	6	66.32	0.00	0.00		66.32	10.35	0.00	0.00		10.35
Worker Passenger Vehicles	479	9	84.50	0.00	0.00		84.50	8.77	0.00	0.00		8.77
Storage piles						17.95	17.95				1.64	1.64
			410.25	**0.00**	**85.18**	**44.51**	**539.93**	**56.09**	**0.00**	**11.15**	**4.48**	**71.72**

Construction on-site fugitive dust PM2.5 | **Month 6 construction on-site fugitive dust** | **Months 2-13 construction on-site fugitive dust**

Vehicle Type	Number of Vehicles (month 6)	Max Daily Distance per Vehicle (mile/day)	Sealed Road - PM2.5 Fugitive Emissions	Paved Road - PM2.5 Fugitive Emissions	Unpaved Road - PM2.5 Fugitive Emissions	Earthmoving Equipment - PM2.5 Fugitive Emissions	Total PM2.5 Fugitive Emissions	Sealed Road - PM2.5 Fugitive Emissions	Paved Road - PM2.5 Fugitive Emissions	Unpaved Road - PM2.5 Fugitive Emissions	Earthmoving Equipment - PM2.5 Fugitive Emissions	Total PM2.5 Fugitive Emissions
			lb/day					ton/year				
Diesel Construction Equipment												
Air Compressor	3	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Asphalt Paver	0	0.2	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Backhoe	6	0	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01
Compactor	4	0	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.06	0.06
Crane small	8	0.5	0.07	0.00	0.11		0.18	0.01	0.00	0.01		0.02
Crane large	4	0.5	0.00	0.00	0.20		0.20	0.00	0.00	0.01		0.01
Dozer	1	0	0.00	0.00	0.00	0.94	0.94	0.00	0.00	0.00	0.11	0.11
Generator	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Grader	4	0	0.00	0.00	0.00	0.85	0.85	0.00	0.00	0.00	0.08	0.08
Light Tower	2	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Loader	5	0	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01
Maxi Sneeker (Trencher)	5	0	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.00	0.07	0.07
Skid Steer (Bobcat)	4	0	0.00	0.00	0.00	3.94	3.94	0.00	0.00	0.00	0.35	0.35
Welding Machine	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Equipment fueled with Propane												
Aerial Lift	6	1	0.02	0.00	0.11		0.14	0.00	0.00	0.01		0.02
Fork Lift	8	1	0.02	0.00	0.13		0.15	0.00	0.00	0.02		0.02
Telehandler	6	1	0.02	0.00	0.10		0.11	0.00	0.00	0.01		0.01
Vehicles with Onroad Engines for Emissions Estimates												
Concrete Delivery Truck for general construction	0	7	0.00	0.00	0.00		0.00	0.09	0.00	0.01		0.10
Concrete Delivery Truck for bridge	5	1.6	0.68	0.00	0.06		0.74	0.02	0.00	0.00		0.02
Concrete Pump Truck for bridge	1	0.1	0.01	0.00	0.00		0.01	0.00	0.00	0.00		0.00
Dump Truck	5	6.8	1.61	0.00	1.32	0.07	3.00	0.19	0.00	0.16	0.01	0.36
Flatbed Truck	10	27.2	9.06	0.00	0.00		9.06	1.41	0.00	0.00		1.41
Staff & Security Truck	6	48	0.93	0.00	0.00		0.93	0.15	0.00	0.00		0.15
Pickup Truck	11	6.8	0.58	0.00	0.14		0.72	0.09	0.00	0.02		0.11
Water/Soiltac Truck	7	13.6	2.26	0.00	5.53		7.79	0.33	0.00	0.81		1.14
General Materials Delivery Truck for general cor	3	7	1.99	0.00	0.00		1.99	0.21	0.00	0.00		0.21
General Materials Delivery Truck for bridge	12	1.6	1.82	0.00	0.00		1.82	0.04	0.00	0.00		0.04
Suncatcher Pedestals Delivery Truck	3	7	1.00	0.00	0.81		1.81	0.06	0.00	0.05		0.10
Stirling Engines Delivery Truck	6	7	3.98	0.00	0.00		3.98	0.62	0.00	0.00		0.62
Suncatcher Metal Supports Delivery Truck	11	7	7.30	0.00	0.00		7.30	1.14	0.00	0.00		1.14
Suncatcher Mirrors Delivery Truck	7	7	4.65	0.00	0.00		4.65	0.72	0.00	0.00		0.72
Electrical and Control Systems Delivery Truck	2	7	1.33	0.00	0.00		1.33	0.21	0.00	0.00		0.21
Azimuth and Elevation Drive Delivery Truck	2	7	1.33	0.00	0.00		1.33	0.21	0.00	0.00		0.21
Water Delivery Trucks	39	6	9.88	0.00	0.00		9.88	1.54	0.00	0.00		1.54
Worker Passenger Vehicles	479	9	11.45	0.00	0.00		11.45	1.19	0.00	0.00		1.19
Storage piles						3.98	3.98				0.36	0.36
			59.98	**0.00**	**8.52**	**10.81**	**79.30**	**8.24**	**0.00**	**1.11**	**1.04**	**10.39**

Calico Solar

Combustion Exhaust Emissions Off-site (short-term)

To be consistent with on-site emissions, months 6 was used to represent the daily/monthly construction off-site (on-road) emissions.
construction schedule = 12 hours per day 7 am to 7 pm pedestal installation = 16 hours per day
delivery trucks can arrive at the site anytime during the day or night

EMISSION FACTORS

				Emission factors (g/mile)										Emission rate per piece of equipment (lb/hr)									
Vehicles with Onroad Engines for Emissions Estimates	Off-site Miles per Day Travelled within MDAQMD jurisdictional area per Vehicle	Hours/Day	Vehicle Weight (lbs)	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Concrete Delivery Truck for general construction	74	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.30E-02	2.07E-02	1.70E-01	8.02E-02	3.79E-01	4.07E-04	4.30E+01	6.93E-05	6.52E-05	4.30E+01
Concrete Delivery Truck for bridge	74	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.30E-02	2.07E-02	1.70E-01	8.02E-02	3.79E-01	4.07E-04	4.30E+01	6.93E-05	6.52E-05	4.30E+01
Concrete Pump Truck for bridge	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dump Truck	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flatbed Truck	0	12	20,000	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Staff & Security Truck	0	24	4,500	1.00E-02	1.00E-02	2.10E+00	5.50E-02	3.00E-02	9.00E-03	3.26E+02	1.04E-01	8.13E-02	3.54E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pickup Truck	0	12	8,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	7.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water/Soiltac Truck	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
General Materials Delivery Truck for general cons	74	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.15E-02	1.03E-02	8.49E-02	4.01E-02	1.89E-01	2.04E-04	2.15E+01	3.46E-05	3.26E-05	2.15E+01
General Materials Delivery Truck for bridge	74	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.15E-02	1.03E-02	8.49E-02	4.01E-02	1.89E-01	2.04E-04	2.15E+01	3.46E-05	3.26E-05	2.15E+01
Suncatcher Pedestals Delivery Truck	200	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-02	2.79E-02	2.29E-01	1.08E-01	5.11E-01	5.51E-04	5.81E+01	9.36E-05	8.81E-05	5.81E+01
Stirling Engines Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Suncatcher Metal Supports Delivery Truck	180	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.80E-02	2.51E-02	2.06E-01	9.75E-02	4.60E-01	4.96E-04	5.23E+01	8.43E-05	7.93E-05	5.23E+01
Suncatcher Mirrors Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Electrical and Control Systems Delivery Truck	200	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-02	2.79E-02	2.29E-01	1.08E-01	5.11E-01	5.51E-04	5.81E+01	9.36E-05	8.81E-05	5.81E+01
Azimuth and Elevation Drive Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Water Delivery Trucks	0	24	23,400	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Worker Passenger Vehicles	74	24	4,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	3.54E+02	4.89E-04	3.72E-04	3.42E-02	2.36E-03	3.19E-03	4.75E-05	4.90E+00	4.78E-04	4.39E-04	5.05E+00
Train	**Load Factor**	**Hours/Day**	**Horsepower**	**Emission factors (g/bhp-hr)**																			
BNSF Locomotive Engine (in motion)	0.087	2.00	4,400	2.36E-01	2.17E-01	1.28E+00	4.18E-01	7.93E+00	4.62E-03	4.88E+02	3.85E-02	1.25E-02	4.93E+02	1.99E-01	1.83E-01	1.08E+00	3.53E-01	6.69E+00	3.89E-03	4.11E+02	3.24E-02	1.05E-02	4.15E+02
BNSF Locomotive Engine (idling)	0.087	1	4,400	7.27E-03	6.69E-03	1.12E-01	1.09E-01	1.41E-01	4.62E-03	4.88E+02	3.85E-02	1.25E-02	4.93E+02	6.13E-03	5.64E-03	9.43E-02	9.16E-02	1.19E-01	3.89E-03	4.11E+02	3.24E-02	1.05E-02	4.15E+02

Notes:

1. Onroad vehicle emissions from EMFAC2007 model. The vehicle description in EMFAC2007 model are as follows:
   - Flatbed Truck and Water Delivery Truck are Medium-Heavy-Duty (MHD-DSL).
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Worker Passenger Vehicle and Pickup Truck are Passenger Car (LDA-ALL)
   - Concrete Delivery Truck, Concrete Pump Truck, Dump Truck, Water/Soiltac Truck, General Materials Delivery Trucks, Suncatcher Pedestals Delivery Truck, Stirling Engines Delivery Truck, Suncatcher Metal Supports Delivery Truck, Suncatcher Mirrors Delivery Truck, Electrical and Control Systems Delivery Truck, and Azimuth & Elevation Drive Delivery Truck are all Heavy-Heavy-Duty (HHD-DSL)
2. The emissions of "Toyota Highlander Hybrid" (Staff & Security Truck) meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
3. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
4. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009. Hybrid Truck is assumed to be gasoline light truck here.
5. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)
   CO_2 GWP (SAR, 1996) = 1
   CH_4 GWP (SAR, 1996) = 21
   N_2O GWP (SAR, 1996) = 310
6. Off-site locomotive emission factors (both in motion and idling) are the same as on-site ones.
7. The average speed for off-site train is assumed to be 60 mph; the idling time at the Cadiz well station is assumed to be up to 1 hour (conservative) of the additional locomotive engine plus 3 (assumed) existing locomotive engines.
8. Off-site Miles per Day Travelled within MDAQMD jurisdictional area per Train equals 120

MONTHLY EMISSIONS (month 1-20)

	Month 1 Daily Emissions (lb/day)											Month 2 Daily Emissions (lb/day)										Month 3 Daily Emissions (lb/day)										Month 4 Daily Emissions (lb/day)									
	Quantity Mo 1	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 2	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 3	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 4	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																										
Concrete Delivery Truck for general construction	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	6.00	1.66	1.49	12.22	5.77	27.25	0.03	3,095.72	0.00	0.00	3,097.28	6.00	1.66	1.49	12.22	5.77	27.25	0.03	3,095.72	0.00	0.00	3,097.28	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Truck for bridge	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21
Concrete Pump Truck for bridge	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-
Dump Truck	3.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	7.00	-	-	-	-	-	-	-	-	-
Flatbed Truck	2.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-
Staff & Security Truck	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-
Pickup Truck	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-
Water/Soiltac Truck	5.00	-	-	-	-	-	-	-	-	-	-	14.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-
General Materials Delivery Truck for general cons	-	-	-	-	-	-	-	-	-	-	-	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
General Materials Delivery Truck for bridge	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43
Suncatcher Pedestals Delivery Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52
Stirling Engines Delivery Truck	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
Suncatcher Metal Supports Delivery Truck	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
Suncatcher Mirrors Delivery Truck	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
Electrical and Control Systems Delivery Truck	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
Azimuth and Elevation Drive Delivery Truck	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
Water Delivery Trucks	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-
Worker Passenger Vehicles	67.00	0.79	0.60	55.03	3.79	5.13	0.08	7,886.04	0.77	0.71	8,121.22	180.00	2.11	1.60	147.84	10.18	13.79	0.21	21,186.37	2.07	1.90	21,818.20	249.00	2.92	2.22	204.51	14.08	19.08	0.28	29,307.81	2.86	2.63	30,181.84	219.00	2.57	1.95	179.87	12.39	16.78	0.25	25,776.75	2.51	2.31	26,545.48
Train																																												
BNSF Locomotive Engine (in motion)	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
BNSF Locomotive Engine (idling)	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
Total	**168.00**	**20.42**	**18.23**	**199.30**	**71.85**	**335.09**	**0.44**	**46,262.35**	**1.02**	**0.82**	**46,539.32**	**310.00**	**23.68**	**20.98**	**306.37**	**84.97**	**375.54**	**0.60**	**63,174.36**	**2.32**	**2.02**	**63,849.80**	**373.00**	**24.49**	**21.59**	**363.04**	**88.88**	**380.82**	**0.68**	**71,295.80**	**3.12**	**2.75**	**72,213.44**	**339.00**	**24.72**	**21.85**	**342.70**	**89.21**	**388.10**	**0.66**	**68,852.43**	**2.77**	**2.43**	**69,665.31**

MONTHLY EMISSIONS (month 21-41)

	Month 21 Daily Emissions (lb/day)											Month 22 Daily Emissions (lb/day)										Month 23 Daily Emissions (lb/day)										Month 24 Daily Emissions (lb/day)									
	Quantity Mo 21	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 22	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 23	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 24	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																											
Concrete Delivery Truck for general construction	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Pump Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general cons	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Pedestals Delivery Truck	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52
Stirling Engines Delivery Truck	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
Suncatcher Metal Supports Delivery Truck	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
Suncatcher Mirrors Delivery Truck	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
Electrical and Control Systems Delivery Truck	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
Azimuth and Elevation Drive Delivery Truck	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
Water Delivery Trucks	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	209	2.45	1.86	171.66	11.82	16.01	0.24	24599.73	2.40	2.20	25333.36	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14
Train																																												
BNSF Locomotive Engine (in motion)	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
BNSF Locomotive Engine (idling)	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
Total	**309**	**23**	**20**	**322**	**83**	**360**	**1**	**64580**	**3**	**2**	**65356**	**308**	**23**	**20**	**321**	**83**	**360**	**1**	**64462**	**3**	**2**	**65235**	**306**	**23**	**20**	**321**	**83**	**360**	**1**	**64462**	**3**	**2**	**65235**	**306**	**23**	**20**	**321**	**83**	**360**	**1**	**64462**	**3**	**2**	**65235**

Month 5 Daily Emissions (lb/day)											Month 6 Daily Emissions (lb/day)											Month 7 Daily Emissions (lb/day)											Month 8 Daily Emissions (lb/day)										
Quantity Mo 5	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 6	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 7	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 8	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	5.00	1.38	1.24	10.18	4.81	22.71	0.02	2,579.77	0.00	0.00	2,581.07	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	-	-	-	-	-	-	-	-	-	-	-
1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	-
7.00	-	-	-	-	-	-	-	-	-	-	7.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	-
3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	12.00	3.31	2.97	24.44	11.55	54.50	0.06	6,191.45	0.01	0.01	6,194.57	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	-	-	-	-	-	-	-	-	-	-	-
3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	1.00	0.75	0.67	5.50	2.60	12.28	0.01	1,394.47	0.00	0.00	1,395.17
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	-
219.00	2.57	1.95	179.87	12.39	16.78	0.25	25,776.75	2.51	2.31	26,545.48	479.00	5.62	4.27	393.42	27.09	36.70	0.55	56,379.28	5.50	5.05	58,060.66	487.00	5.72	4.34	399.99	27.54	37.31	0.56	57,320.90	5.59	5.14	59,030.36	385.00	4.52	3.43	316.21	21.78	29.49	0.44	45,315.29	4.42	4.06	46,666.71
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
336.00	**24.72**	**21.85**	**342.70**	**89.21**	**388.10**	**0.66**	**68,852.43**	**2.77**	**2.43**	**69,665.31**	**610.00**	**31.64**	**27.64**	**584.76**	**117.39**	**471.61**	**1.02**	########	**5.77**	**5.19**	########	**602.00**	**27.87**	**24.24**	**562.81**	**104.37**	**408.63**	**0.96**	########	**5.85**	**5.26**	########	**494.00**	**24.35**	**21.24**	**461.92**	**90.51**	**362.64**	**0.81**	**84,054.17**	**4.67**	**4.18**	**85,447.55**

Month 25 Daily Emissions (lb/day)											Month 26 Daily Emissions (lb/day)											Month 27 Daily Emissions (lb/day)											Month 28 Daily Emissions (lb/day)										
Quantity Mo 25	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 26	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 27	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 28	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
306	**23**	**20**	**321**	**83**	**360**	**1**	**64462**	**3**	**2**	**65235**	**303**	**21**	**18**	**305**	**75**	**323**	**1**	**60279**	**3**	**2**	**61049**	**303**	**21**	**18**	**305**	**75**	**323**	**1**	**60279**	**3**	**2**	**61049**	**261**	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**

Month 9 Daily Emissions (lb/day)										
Quantity Mo 9	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
334.00	3.92	2.98	274.33	18.89	25.59	0.38	39,312.49	3.83	3.52	40,484.88
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
440.00	**23.01**	**20.12**	**414.53**	**85.02**	**346.46**	**0.73**	**76,656.89**	**4.08**	**3.64**	**77,870.55**

Month 10 Daily Emissions (lb/day)										
Quantity Mo 10	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
405.00	**21.84**	**19.12**	**384.60**	**80.49**	**330.61**	**0.69**	**71,695.67**	**3.75**	**3.33**	**72,806.76**

Month 11 Daily Emissions (lb/day)										
Quantity Mo 11	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
405.00	**21.84**	**19.12**	**384.60**	**80.49**	**330.61**	**0.69**	**71,695.67**	**3.75**	**3.33**	**72,806.76**

Month 12 Daily Emissions (lb/day)										
Quantity Mo 12	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
405.00	**21.84**	**19.12**	**384.60**	**80.49**	**330.61**	**0.69**	**71,695.67**	**3.75**	**3.33**	**72,806.76**

Month 29 Daily Emissions (lb/day)										
Quantity Mo 29	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2232.28	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
259	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**

Month 30 Daily Emissions (lb/day)										
Quantity Mo 30	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
259	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**

Month 31 Daily Emissions (lb/day)										
Quantity Mo 31	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
259	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**

Month 32 Daily Emissions (lb/day)										
Quantity Mo 32	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
259	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**

Month 13 Daily Emissions (lb/day)										
Quantity Mo 13	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
357.00	4.19	3.18	293.22	20.19	27.35	0.41	42,019.63	4.10	3.76	43,272.77
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
457.00	**22.45**	**19.58**	**427.31**	**83.44**	**334.59**	**0.75**	**77,816.18**	**4.34**	**3.88**	**79,109.79**

Month 14 Daily Emissions (lb/day)										
Quantity Mo 14	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
341.00	4.00	3.04	280.08	19.29	26.12	0.39	40,136.40	3.91	3.60	41,333.37
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
444.00	**22.26**	**19.44**	**414.17**	**82.53**	**333.37**	**0.73**	**75,932.94**	**4.16**	**3.71**	**77,170.40**

Month 15 Daily Emissions (lb/day)										
Quantity Mo 15	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
347.00	4.07	3.09	285.00	19.63	26.58	0.40	40,842.61	3.98	3.66	42,060.64
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
449.00	**22.33**	**19.49**	**419.09**	**82.87**	**333.83**	**0.74**	**76,639.16**	**4.23**	**3.77**	**77,897.67**

Month 16 Daily Emissions (lb/day)										
Quantity Mo 16	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
332.00	3.90	2.96	272.68	18.78	25.43	0.38	39,077.08	3.81	3.50	40,242.46
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
434.00	**22.15**	**19.36**	**406.77**	**82.02**	**332.68**	**0.72**	**74,873.63**	**4.06**	**3.61**	**76,079.49**

Month 17 Daily Emissions (lb/day)										
Quantity Mo 17	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
325.00	3.81	2.90	266.93	18.38	24.90	0.37	38,253.17	3.73	3.43	39,393.97
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
425.00	**22.07**	**19.30**	**401.02**	**81.63**	**332.14**	**0.71**	**74,049.71**	**3.98**	**3.54**	**75,231.00**

Month 33 Daily Emissions (lb/day)										
Quantity Mo 33	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
283	**20**	**18**	**290**	**74**	**322**	**1**	**58160**	**2**	**2**	**58867**

Month 34 Daily Emissions (lb/day)										
Quantity Mo 34	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
283	**20**	**18**	**290**	**74**	**322**	**1**	**58160**	**2**	**2**	**58867**

Month 35 Daily Emissions (lb/day)										
Quantity Mo 35	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
283	**20**	**18**	**290**	**74**	**322**	**1**	**58160**	**2**	**2**	**58867**

Month 36 Daily Emissions (lb/day)										
Quantity Mo 36	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
246	**20**	**18**	**260**	**72**	**319**	**1**	**53805**	**2**	**2**	**54382**

Month 37 Daily Emissions (lb/day)										
Quantity Mo 37	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
241	**20**	**18**	**260**	**72**	**319**	**1**	**53805**	**2**	**2**	**54382**

Month 18 Daily Emissions (lb/day)										
Quantity Mo 18	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
280.00	3.29	2.50	229.97	15.84	21.45	0.32	32,956.57	3.21	2.95	33,939.42
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
380.00	**21.54**	**18.89**	**364.06**	**79.08**	**328.69**	**0.66**	**68,753.12**	**3.46**	**3.07**	**69,776.45**

Month 19 Daily Emissions (lb/day)										
Quantity Mo 19	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
247.00	2.90	2.20	202.87	13.97	18.92	0.28	29,072.41	2.83	2.60	29,939.42
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
345.00	**21.16**	**18.60**	**336.96**	**77.21**	**326.17**	**0.62**	**64,868.95**	**3.08**	**2.72**	**65,776.45**

Month 20 Daily Emissions (lb/day)										
Quantity Mo 20	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
226.00	2.65	2.02	185.62	12.78	17.31	0.26	26,600.66	2.59	2.38	27,393.96
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
324.00	**20.91**	**18.41**	**319.71**	**76.03**	**324.56**	**0.60**	**62,397.21**	**2.84**	**2.50**	**63,230.99**

Month 38 Daily Emissions (lb/day)										
Quantity Mo 38	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
241	**20**	**18**	**260**	**72**	**319**	**1**	**53805**	**2**	**2**	**54382**

Month 39 Daily Emissions (lb/day)										
Quantity Mo 39	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
241	**20**	**18**	**260**	**72**	**319**	**1**	**53805**	**2**	**2**	**54382**

Month 40 Daily Emissions (lb/day)										
Quantity Mo 40	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
152	1.78	1.36	124.84	8.60	11.64	0.17	17890.71	1.74	1.60	18424.26
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
240	**20**	**18**	**259**	**72**	**319**	**1**	**53687**	**2**	**2**	**54261**

Month 41 Daily Emissions (lb/day)										
Quantity Mo 41	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
152	1.78	1.36	124.84	8.60	11.64	0.17	17890.71	1.74	1.60	18424.26
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
240	**20**	**18**	**259**	**72**	**319**	**1**	**53687**	**2**	**2**	**54261**

Monthly Comparison of Construction Equipment Emissions:

		Daily Emissions (lb/day)										
Month of Contruction	Total Equipment Quantity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	168	20.42	18.23	199.30	71.85	335.09	0.44	46262.35	1.02	0.824	46539.32
2	310	23.68	20.98	306.37	84.97	375.54	0.60	63174.36	2.32	2.021	63849.80
3	373	24.49	21.59	363.04	88.88	380.82	0.68	71295.80	3.12	2.749	72213.44
4	339	24.72	21.85	342.70	89.21	388.10	0.66	68852.43	2.77	2.434	69665.31
5	336	24.72	21.85	342.70	89.21	388.10	0.66	68852.43	2.77	2.434	69665.31
6	610	31.64	27.64	584.76	117.39	471.61	1.02	106678.32	5.77	5.187	108407.48
7	602	27.87	24.24	562.81	104.37	408.63	0.96	100396.58	5.85	5.261	102150.18
8	494	24.35	21.24	461.92	90.51	362.64	0.81	84054.17	4.67	4.178	85447.55
9	440	23.01	20.12	414.53	85.02	346.46	0.73	76656.89	4.08	3.638	77870.55
10	405	21.84	19.12	384.60	80.49	330.61	0.69	71695.67	3.75	3.330	72806.76
11	405	21.84	19.12	384.60	80.49	330.61	0.69	71695.67	3.75	3.330	72806.76
12	405	21.84	19.12	384.60	80.49	330.61	0.69	71695.67	3.75	3.330	72806.76
13	457	22.45	19.58	427.31	83.44	334.59	0.75	77816.18	4.34	3.879	79109.79
14	444	22.26	19.44	414.17	82.53	333.37	0.73	75932.94	4.16	3.710	77170.40
15	449	22.33	19.49	419.09	82.87	333.83	0.74	76639.16	4.23	3.773	77897.67
16	434	22.15	19.36	406.77	82.02	332.68	0.72	74873.63	4.06	3.615	76079.49
17	425	22.07	19.30	401.02	81.63	332.14	0.71	74049.71	3.98	3.541	75231.00
18	380	21.54	18.89	364.06	79.08	328.69	0.66	68753.12	3.46	3.067	69776.45
19	345	21.16	18.60	336.96	77.21	326.17	0.62	64868.95	3.08	2.719	65776.45
20	324	20.91	18.41	319.71	76.03	324.56	0.60	62397.21	2.84	2.497	63230.99
21	309	22.95	20.27	322.26	82.87	360.08	0.62	64579.68	2.65	2.324	65355.90
22	308	22.94	20.26	321.44	82.81	360.01	0.62	64461.98	2.64	2.314	65234.69
23	306	22.94	20.26	321.44	82.81	360.01	0.62	64461.98	2.64	2.314	65234.69
24	306	22.94	20.26	321.44	82.81	360.01	0.62	64461.98	2.64	2.314	65234.69
25	306	22.94	20.26	321.44	82.81	360.01	0.62	64461.98	2.64	2.314	65234.69
26	303	20.70	18.25	304.93	75.01	323.18	0.58	60278.57	2.64	2.307	61049.17
27	303	20.70	18.25	304.93	75.01	323.18	0.58	60278.57	2.64	2.307	61049.17
28	261	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
29	259	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
30	259	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
31	259	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
32	259	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
33	283	20.49	18.09	290.14	73.99	321.80	0.56	58159.93	2.43	2.117	58867.35
34	283	20.49	18.09	290.14	73.99	321.80	0.56	58159.93	2.43	2.117	58867.35
35	283	20.49	18.09	290.14	73.99	321.80	0.56	58159.93	2.43	2.117	58867.35
36	246	20.05	17.76	259.76	71.90	318.96	0.51	53804.96	2.00	1.727	54382.50
37	241	20.05	17.76	259.76	71.90	318.96	0.51	53804.96	2.00	1.727	54382.50
38	241	20.05	17.76	259.76	71.90	318.96	0.51	53804.96	2.00	1.727	54382.50
39	241	20.05	17.76	259.76	71.90	318.96	0.51	53804.96	2.00	1.727	54382.50
40	240	20.04	17.75	258.93	71.84	318.89	0.51	53687.26	1.99	1.717	54261.29
41	240	20.04	17.75	258.93	71.84	318.89	0.51	53687.26	1.99	1.717	54261.29
MAX VALUE (lb/day)	**610**	**31.64**	**27.64**	**584.76**	**117.39**	**471.61**	**1.02**	**106678.3**	**5.85**	**5.261**	**108407.5**

		Annual Emissions (ton/year)									
Months for Annual Contruction		PM_{10}	$PM_{2.5}$	CO	ROC	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	12	3.78	3.32	61.51	13.82	57.83	0.112	11717.03	0.57	0.5033	11884.98
2	13	3.80	3.33	64.48	13.97	57.83	0.116	12127.23	0.61	0.5431	12308.40
3	14	3.78	3.31	65.88	13.94	57.28	0.118	12293.10	0.63	0.5650	12481.56
4	15	3.76	3.29	66.61	13.86	56.67	0.119	12362.56	0.65	0.5783	12555.46
5	16	3.72	3.25	67.44	13.76	55.95	0.119	12440.83	0.67	0.5937	12638.84
6	17	3.69	3.22	68.20	13.67	55.22	0.120	12508.40	0.68	0.6081	12711.20
7	18	3.56	3.11	65.33	13.17	53.36	0.115	12015.37	0.65	0.5805	12208.99
8	19	3.47	3.03	62.40	12.82	52.29	0.111	11553.51	0.62	0.5474	11736.14
9	20	3.42	3.00	60.55	12.63	51.80	0.108	11271.97	0.59	0.5256	11447.32
10	21	3.42	3.00	59.35	12.60	51.97	0.107	11114.97	0.57	0.5085	11284.63
11	22	3.44	3.01	58.53	12.63	52.36	0.106	11020.93	0.56	0.4953	11186.19
12	23	3.45	3.03	57.71	12.66	52.74	0.105	10926.89	0.54	0.4821	11087.76
13	24	3.47	3.04	56.88	12.69	53.12	0.104	10832.85	0.53	0.4688	10989.32
14	25	3.47	3.05	55.51	12.68	53.45	0.102	10659.25	0.51	0.4485	10808.94
15	26	3.45	3.04	54.09	12.58	53.32	0.100	10455.74	0.49	0.4303	10599.37
16	27	3.43	3.02	52.60	12.48	53.18	0.098	10243.06	0.47	0.4112	10380.34
17	28	3.41	3.00	50.83	12.36	53.01	0.096	9989.05	0.44	0.3885	10118.76
18	29	3.38	2.98	49.13	12.24	52.86	0.093	9745.76	0.42	0.3667	9868.21
19	30	3.36	2.97	47.92	12.16	52.74	0.092	9571.33	0.40	0.3510	9688.58
20	31	3.35	2.96	47.05	12.10	52.66	0.090	9447.39	0.39	0.3399	9560.94
21	32	3.34	2.95	46.41	12.05	52.60	0.089	9355.58	0.38	0.3317	9466.40
22	33	3.31	2.93	45.99	11.94	52.10	0.089	9272.13	0.38	0.3290	9382.04
23	34	3.28	2.90	45.59	11.82	51.61	0.088	9190.20	0.37	0.3265	9299.27
24	35	3.25	2.87	45.18	11.71	51.11	0.087	9108.27	0.37	0.3239	9216.49
25	36	3.21	2.84	44.38	11.57	50.58	0.086	8969.73	0.36	0.3163	9075.42
26	37	3.17	2.80	43.58	11.43	50.04	0.084	8831.19	0.36	0.3087	8934.34
27	38	3.16	2.80	42.99	11.39	49.99	0.084	8747.03	0.35	0.3011	8847.67
28	39	3.16	2.79	42.40	11.35	49.93	0.083	8662.88	0.34	0.2936	8761.00
29	40	3.15	2.79	42.25	11.34	49.92	0.083	8641.45	0.34	0.2917	8738.94
30	41	3.15	2.79	42.10	11.32	49.91	0.082	8620.03	0.33	0.2897	8716.88
MAX VALUE (ton/year)		**3.80**	**3.33**	**68.20**	**13.97**	**57.83**	**0.12**	**12508.40**	**0.68**	**0.6081**	**12711.20**

Combustion Exhaust Emissions Off-site (annual)

To be consistency to on-site emissions, months 2-13 was used to represent the annual construction off-site (on-road) emissions.
Construction Assumptions - 26 days per month

Equipment	Number of Vehicles per year	Hours/Day	Emission rate per piece of equipment (lb/hr)										Annual Emissions (ton/year)										Number of Vehicles (entire construction period)	entire construction period emissions (ton)									
			PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																	
Concrete Delivery Truck for general construction	12	12	0.023	0.021	0.170	0.080	0.379	0.000	42.996	0.000	0.000	43.018	0.04	0.04	0.32	0.15	0.71	0.00	80.49	0.00	0.00	80.53	14	0.05	0.05	0.37	0.18	0.83	0.00	93.90	0.00	0.00	93.95
Concrete Delivery Truck for bridge	10	12	0.023	0.021	0.170	0.080	0.379	0.000	42.996	0.000	0.000	43.018	0.04	0.03	0.26	0.13	0.59	0.00	67.07	0.00	0.00	67.11	11	0.04	0.04	0.29	0.14	0.65	0.00	73.78	0.00	0.00	73.82
Concrete Pump Truck for bridge	6	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	46	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	120	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	310	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	72	24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	246	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	132	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	451	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	79	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general cons	24	24	0.012	0.010	0.085	0.040	0.189	0.000	21.498	0.000	0.000	21.509	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06	24	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06
General Materials Delivery Truck for bridge	22	24	0.012	0.010	0.085	0.040	0.189	0.000	21.498	0.000	0.000	21.509	0.08	0.07	0.58	0.28	1.30	0.00	147.56	0.00	0.00	147.64	24	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06
Suncatcher Pedestals Delivery Truck	13	24	0.031	0.028	0.229	0.108	0.511	0.001	58.103	0.000	0.000	58.132	0.13	0.11	0.93	0.44	2.07	0.00	235.67	0.00	0.00	235.78	28	0.27	0.24	2.00	0.95	4.47	0.00	507.59	0.00	0.00	507.84
Stirling Engines Delivery Truck	72	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.56	0.50	4.12	1.95	9.19	0.01	1044.18	0.00	0.00	1044.71	246	1.91	1.71	14.08	6.66	31.41	0.03	3567.61	0.01	0.01	3569.41
Suncatcher Metal Supports Delivery Truck	132	24	0.028	0.025	0.206	0.098	0.460	0.000	52.293	0.000	0.000	52.319	1.15	1.03	8.50	4.02	18.96	0.02	2153.62	0.00	0.00	2154.70	451	3.94	3.53	29.05	13.73	64.78	0.07	7358.20	0.01	0.01	7361.91
Suncatcher Mirrors Delivery Truck	84	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.65	0.59	4.81	2.27	10.72	0.01	1218.21	0.00	0.00	1218.82	287	2.23	2.00	16.43	7.76	36.64	0.04	4162.21	0.01	0.01	4164.31
Electrical and Control Systems Delivery Truck	24	24	0.031	0.028	0.229	0.108	0.511	0.001	58.103	0.000	0.000	58.132	0.23	0.21	1.72	0.81	3.83	0.00	435.07	0.00	0.00	435.29	82	0.80	0.71	5.87	2.77	13.09	0.01	1486.51	0.00	0.00	1487.25
Azimuth and Elevation Drive Delivery Truck	24	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.19	0.17	1.37	0.65	3.06	0.00	348.06	0.00	0.00	348.24	82	0.64	0.57	4.69	2.22	10.47	0.01	1189.20	0.00	0.00	1189.80
Water Delivery Trucks	468	24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1599	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	3824	24	0.000	0.000	0.034	0.002	0.003	0.000	4.904	0.000	0.000	5.051	0.58	0.44	40.83	2.81	3.81	0.06	5851.20	0.57	0.52	6025.70	9762	1.49	1.13	104.23	7.18	9.72	0.14	14937.10	1.46	1.34	15382.56
Train																																	
BNSF Locomotive Engine (in motion)	12	2.00	0.199	0.183	1.079	0.353	6.689	0.004	411.452	0.032	0.011	415.400	0.06	0.06	0.34	0.11	2.09	0.00	128.37	0.01	0.00	129.60	41	0.21	0.19	1.15	0.38	7.13	0.00	438.61	0.03	0.01	442.82
BNSF Locomotive Engine (idling)	48	1	0.006	0.006	0.094	0.092	0.119	0.004	411.452	0.032	0.011	415.400	0.00	0.00	0.06	0.06	0.07	0.00	256.75	0.02	0.01	259.21	164	0.01	0.01	0.20	0.20	0.25	0.01	877.21	0.07	0.02	885.63
												Total	**3.80**	**3.33**	**64.48**	**13.97**	**57.83**	**0.12**	**12127.23**	**0.61**	**0.54**	**12308.40**		**11.75**	**10.35**	**179.64**	**42.75**	**182.26**	**0.34**	**35013.88**	**1.59**	**1.40**	**35481.42**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Calico Solar

Fugitive Dust Emissions (offsite)

To be consistent to on-site emissions, months 6 was used to represent the daily/month construction off-site (on-road) emissions.
To be consistent to on-site emissions, months 2-13 was used to represent the annual construction off-site (on-road) emissions.

Travel on paved road

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
0.02 sL = road surface silt loading (grams per square meter) (g/m^2), Freeway Local Streets & Freeways (emission inventory code: 640-641-5400-0000), July 1997
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	Number of Vehicles (month 6)	Number of Vehicles per year (months 2 13)	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD Jurisdictional Area (mile/day)	Max Daily VMT (all vehicles)	Max Annual VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Vehicles with Onroad Engines for Emissions Estimates										
Concrete Delivery Truck for general construction	0	12	74	0	23088	20	12	26	0.002	0.013
Concrete Delivery Truck for bridge	5	10	74	370	19240	20	12	26	0.002	0.013
Concrete Pump Truck for bridge	1	6	0	0	0	20	12	26	0.002	0.013
Dump Truck	5	46	0	0	0	20	12	26	0.002	0.013
Flatbed Truck	10	120	0	0	0	10	12	26	0.000	0.004
Staff & Security Truck	6	72	0	0	0	2.25	24	26	0.000	0.000
Pickup Truck	11	132	0	0	0	4	12	26	0.000	0.001
Water/Soiltac Truck	7	79	0	0	0	20	12	26	0.002	0.013
General Materials Delivery Truck for general construc	3	24	74	222	46176	20	24	26	0.002	0.013
General Materials Delivery Truck for bridge	12	22	74	888	42328	20	24	26	0.002	0.013
Suncatcher Pedestals Delivery Truck	3	13	200	600	67600	20	24	26	0.002	0.013
Stirling Engines Delivery Truck	6	72	160	960	299520	20	24	26	0.002	0.013
Suncatcher Metal Supports Delivery Truck	11	132	180	1980	617760	20	24	26	0.002	0.013
Suncatcher Mirrors Delivery Truck	7	84	160	1120	349440	20	24	26	0.002	0.013
Electrical and Control Systems Delivery Truck	2	24	200	400	124800	20	24	26	0.002	0.013
Azimuth and Elevation Drive Delivery Truck	2	24	160	320	99840	20	24	26	0.002	0.013
Water Delivery Trucks	39	468	0	0	0	11.7	24	26	0.001	0.006
Worker Passenger Vehicles	479	3824	74	35446	7357376	2	24	26	6.44E-05	4.30E-04

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.15	0.15	0.00	0.00	0.00	0.00	0.02	0.02
Concrete Delivery Truck for bridge	0%	0%	0.40	0.40	4.86	4.86	4.61%	0.13	0.13	0.05	0.05	0.62	0.62	0.02	0.02
Concrete Pump Truck for bridge	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general construc	0%	0%	0.12	0.12	2.91	2.91	2.77%	0.30	0.30	0.02	0.02	0.37	0.37	0.04	0.04
General Materials Delivery Truck for bridge	0%	0%	0.49	0.49	11.65	11.65	11.07%	0.28	0.28	0.06	0.06	1.49	1.49	0.04	0.04
Suncatcher Pedestals Delivery Truck	0%	0%	0.33	0.33	7.87	7.87	7.48%	0.44	0.44	0.04	0.04	1.01	1.01	0.06	0.06
Stirling Engines Delivery Truck	0%	0%	0.52	0.52	12.60	12.60	11.97%	1.97	1.97	0.07	0.07	1.62	1.62	0.25	0.25
Suncatcher Metal Supports Delivery Truck	0%	0%	1.08	1.08	25.98	25.98	24.69%	4.05	4.05	0.14	0.14	3.33	3.33	0.52	0.52
Suncatcher Mirrors Delivery Truck	0%	0%	0.61	0.61	14.70	14.70	13.96%	2.29	2.29	0.08	0.08	1.89	1.89	0.29	0.29
Electrical and Control Systems Delivery Truck	0%	0%	0.22	0.22	5.25	5.25	4.99%	0.82	0.82	0.03	0.03	0.67	0.67	0.11	0.11
Azimuth and Elevation Drive Delivery Truck	0%	0%	0.17	0.17	4.20	4.20	3.99%	0.66	0.66	0.02	0.02	0.54	0.54	0.08	0.08
Water Delivery Trucks	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	0%	0%	0.63	0.63	15.23	15.23	14.47%	1.58	1.58	0.10	0.10	2.28	2.28	0.24	0.24
TOTAL Fugitive emissions for vehicle travel offsite paved roads			**4.59**	**4.59**	**105.25**	**105.25**		**12.67**	**12.67**	**0.60**	**0.60**	**13.83**	**13.83**	**1.66**	**1.66**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Attachment AQ-1b
Construction Emissions for Truck Transport
(Jan. 26, 2010)

Calico Solar

Construction Trade Projection (850 MW)

Discipline	Hours	Month After Construction Start																																										Highest Per Day Requirement by Solar One During Project
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
Carpenters	83,472	10	14	31	31	31	43	47	40	36	28	28	28	21	11	11	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	47
Concrete Crews	81,008	9	15	29	29	29	46	46	42	36	24	24	24	21	11	11	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	46
Electricians	212,010	17	28	57	57	57	84	84	60	54	54	54	54	69	69	113	105	105	88	48	48	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0	0	0	0	0	0	113
Ironworkers	100,330	19	23	41	41	41	44	48	36	32	24	24	24	36	26	26	25	25	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	48
Laborers	153,557	17	43	65	62	62	142	142	68	30	30	30	30	56	41	51	46	46	32	22	17	17	17	17	17	17	17	17	10	10	10	10	10	10	10	10	0	0	0	0	0	142
Miscellaneous Crews	10,000	0	0	0	0	0	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Operators	205,183	25	82	93	75	75	86	86	72	59	51	51	51	84	88	67	61	52	34	34	27	26	25	25	25	25	25	25	2	2	2	2	2	2	2	2	1	1	1	0	0	93
Plumbers	25,040	0	5	9	9	9	22	26	26	22	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Solar One Technicians	145,920	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
SunCatcher Assemblers	371,200	0	0	0	0	0	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
SunCatcher Electricians	92,800	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
SunCatcher Ironworkers	185,600	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
SunCatcher Laborers	58,880	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	16	16	16	16	16	16	16	16	16
SunCatcher Material Handlers	92,800	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
SunCatcher Operators	29,440	0	0	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8	8	8	8	8	8
SunCatcher Teamsters	44,160	0	0	0	0	0	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	12	12	12	12	12	12
SunCatcher Technicians	185,600	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Teamsters	65,160	4	60	49	24	24	25	25	7	5	5	5	5	31	53	29	28	26	24	24	4	4	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	0	60
Technicians	3,504	0	0	0	0	0	5	5	5	5	5	5	5	5	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Totals	**2,145,664**	**101**	**270**	**374**	**328**	**328**	**719**	**731**	**578**	**501**	**457**	**457**	**457**	**535**	**512**	**521**	**498**	**487**	**420**	**370**	**339**	**314**	**312**	**312**	**312**	**312**	**312**	**312**	**249**	**249**	**249**	**249**	**249**	**285**	**285**	**285**	**230**	**230**	**230**	**230**	**228**	**228**	**818**

Source: Bureau of Labor Statistics, 2008.

Note:

N/A = not applicable

14645 total personnel for 41 months
357 avg monthly personnel
731 max monthly personnel

Data from Appendix V Solar 1
Note does not match Solar 1 Table 3-15 from AFC

Calico Solar
Construction Equipment Projection (850 MW)

| Construction Equipment Description | HP | D | G | P | Month After Construction Start (number of equipment per day) | | |

Calico Solar

Description	Activity	Make / Model	Fuel	Quantity per day per month	Frequency	Horse-power	Vehicle Weight (tons)	Max Daily Onsite Distance per Vehicle (mile/day)	Assumed distance percentage to drive on onsite sealed roads	Assumed distance percentage to drive on onsite unpaved roads	Assumed distance percentage to drive on onsite paved roads	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD jurisdictional area (mile/day)	Offsite Travel to and from	Onsite Travel description
Concrete Delivery Truck for general construction			Diesel	variable - from construction equipment schedule	Daily	250	20	7	90%	10%	0%	74	Barstow	most concrete will be delivered to the MSC area
Concrete Delivery Truck for bridge			Diesel	variable - from construction equipment schedule	Daily	250	20	1.6	90%	10%	0%	74	Barstow	most concrete will be delivered to the bridge construction area
Concrete Pump Truck for bridge			Diesel	variable - from construction equipment schedule	Daily	250	20	0.1	90%	10%	0%	0	on-site only	concrete pump will be used mostly in the MSC area
Dump Truck			Diesel	variable - from construction equipment schedule	Daily	250	20	6.8	50%	50%	0%	0	on-site only	from the MSC area to the any construction area of the site
Flatbed Truck			Diesel	variable - from construction equipment schedule	Daily	250	10	27.2	100%	0%	0%	0	on-site only	delivers materials to installation location
Staff & Security Truck	Site Inspections & Security	Toyota Highlander or similar	Gasoline - Hybrid	6	Daily	187	2.25	48	100%	0%	0%	0	on-site only	travels mainly perimeter and main access road
Pickup Truck			Gasoline	variable - from construction equipment schedule	Daily	175	4	6.8	95%	5%	0%	0	on-site only	from the MSC area to the any construction area of the site
Water/Soiltac Truck			Diesel	variable - from construction equipment schedule	Daily	250	20	13.6	25%	75%	0%	0	on-site only	from the MSC area to the any construction area of the site
General Materials Delivery Truck for general construction	General Construction Materials	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	7	100%	0%	0%	74	Barstow	most materials will be delivered to the MSC area
General Materials Delivery Truck for bridge	General Construction Materials	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	1.6	100%	0%	0%	74	Barstow	most materials will be delivered to the bridge construction area
Suncatcher Delivery Trucks	Suncatcher Pedestals	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	7	50%	50%	0%	200	Phoenix	delivers pedestals to installation location
	Stirling Engines	transport truck	Diesel	6	Daily	250	20	7	100%	0%	0%	160	railroad from Detroit to LA and then tranported by truck	delivers materials to MSC
	Suncatcher Metal Supports	transport truck	Diesel	11	Daily	250	20	7	100%	0%	0%	180	from near Phoenix or Los Angeles area.	delivers materials to MSC
	Suncatcher Mirrors	transport truck	Diesel	7	Daily	250	20	7	100%	0%	0%	160	railroad from Detroit to LA and then tranported by truck	delivers materials to MSC
	Electrical and Control Systems	transport truck	Diesel	2	Daily	250	20	7	100%	0%	0%	200	Phoenix	delivers materials to MSC
	Azimuth and Elevation Drive	transport truck	Diesel	2	Daily	250	20	7	100%	0%	0%	160	railroad from Midwest to LA and then tranported by truck	delivers materials to MSC
Water Delivery Trucks	All onsite water will be delivered by truck	3700 gal truck	Diesel	39	Daily	300	11.7	7	100%	0%	0%	128	Cadiz Well	delivers water to tanks in MSC
Worker Passenger Vehicles	Community to Work	Passenger vehicles	Gasoline & diesel	variable - from construction equipment schedule	Daily	100	2	9	100%	0%	0%	74	Barstow	half to MSC and the other half to the main laydown area

Note:

1. Vehicles with variable quantities, the quantity per month can be found in Table 5.2-19 Revised Construction Equipment Projection
2. The average distance from the Project site entrance to bridge construction area, MSC, and the main laydown area is about 0.8, 3.5, and 5.5 miles, one-way, respectively.
3. The average distance between the MSC and the main laydown area is about 2 miles.
4. The fenceline perimeter is approximately 30 miles. Each security vehicle is assumed to travel from the MSC around the perimeter plus one trip to the center of north fenced property (1.8 miles) and the center of south fenced property (5 miles) and back (and plus additional 10% for misc trips) = approximately 48 miles.
5. Average distance from main service complex to center of north and south portion of the site is 1.8 and 5 miles, respectively. Thus, the average round trip distance for each dump truck, pickup truck, and concrete pump truck travels is 6.8 [=(1.8+5)/2*2] miles.
6. Distance for water delivery truck travels was provided by the applicant (about 64 miles one way trip from Cadiz well to Project site entrance).
7. The distance from the Project site to Barstow is about 37 miles.
8. Deliveries coming from Detroit will travel by rail to Los Angeles then by transport truck to the site.
9. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Los Angeles is about 80 miles.
10. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Phoenix is about 100 miles.
11. On-site travelling:

    Delivery Trucks: mostly from the Project site entrance to the MSC (3.5 miles).

    Worker Passenger Vehicles: from the Project site entrance to either the laydown area in the MSC (3.5 miles) or the main laydown area (5.5 miles).

    Concrete Pump Trucks: mostly in the bridge construction area (traveling less than 0.1 miles per day).

    Flatbed Truck: assumed to make 4 trips per day to SunCatcher installation locations delivering assembled dishes and misc parts

    Water/Soiltac Truck: assumed to make 2 trips per day to SunCatcher instalation locations to watering or seaing the soiltac product.

    Construction laydown area is sealed

Calico Solar

Combustion Exhaust Emissions On-site (short-term)

Highest activity and emissions occur in month 6.

construction schedule = 12 hours per day 7 am to 7 pm pedestal installation = 16 hours per day
delivery trucks can arrive at the site anytime during the day or night

EMISSION FACTORS

Equipment	Load Factor	Hours/Day	Horsepower	Emission factors (ton/hr) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Emission rate per piece of equipment (lb/hr) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																							
Air Compressor	0.48	6	50	1.33E-05	1.23E-05	1.42E-04	5.88E-05	1.20E-04	1.44E-07	1.11E-02	5.31E-06	0.00E+00	1.12E-02	2.67E-02	2.46E-02	2.83E-01	1.18E-01	2.39E-01	2.88E-04	2.23E+01	1.06E-02	0.00E+00	2.25E+01
Asphalt Paver	0.59	7	120	4.26E-05	3.92E-05	2.61E-04	8.18E-05	4.84E-04	4.05E-07	3.46E-02	7.38E-06	0.00E+00	3.47E-02	8.52E-02	7.84E-02	5.22E-01	1.64E-01	9.68E-01	8.11E-04	6.91E+01	1.48E-02	0.00E+00	6.94E+01
Backhoe	0.47	6	120	2.57E-05	2.37E-05	1.81E-04	4.54E-05	2.83E-04	3.03E-07	2.58E-02	4.10E-06	0.00E+00	2.59E-02	5.14E-02	4.73E-02	3.62E-01	9.08E-02	5.66E-01	6.06E-04	5.17E+01	8.19E-03	0.00E+00	5.19E+01
Compactor	0.47	6	120	3.20E-05	2.95E-05	2.09E-04	6.00E-05	3.69E-04	3.46E-07	2.95E-02	5.41E-06	0.00E+00	2.96E-02	6.41E-02	5.89E-02	4.17E-01	1.20E-01	7.38E-01	6.91E-04	5.89E+01	1.08E-02	0.00E+00	5.92E+01
Crane small	0.43	5	175	2.69E-05	2.47E-05	2.44E-04	6.05E-05	4.65E-04	4.52E-07	4.01E-02	5.46E-06	0.00E+00	4.03E-02	5.38E-02	4.95E-02	4.88E-01	1.21E-01	9.29E-01	9.03E-04	8.03E+01	1.09E-02	0.00E+00	8.05E+01
Crane large	0.43	7	500	3.42E-05	3.15E-05	3.31E-04	9.10E-05	8.85E-04	8.83E-07	9.00E-02	8.21E-06	0.00E+00	9.01E-02	6.85E-02	6.30E-02	6.62E-01	1.82E-01	1.77E+00	1.77E-03	1.80E+02	1.64E-02	0.00E+00	1.80E+02
Dozer	0.59	7	250	3.92E-05	3.61E-05	2.87E-04	1.03E-04	9.71E-04	9.34E-07	8.30E-02	9.25E-06	0.00E+00	8.32E-02	7.84E-02	7.21E-02	5.74E-01	2.05E-01	1.94E+00	1.87E-03	1.66E+02	1.85E-02	0.00E+00	1.66E+02
Generator	0.74	9	50	1.43E-05	1.32E-05	1.46E-04	5.65E-05	1.54E-04	1.98E-07	1.53E-02	5.10E-06	0.00E+00	1.54E-02	2.86E-02	2.63E-02	2.92E-01	1.13E-01	3.07E-01	3.96E-04	3.06E+01	1.02E-02	0.00E+00	3.08E+01
Grader	0.58	7	175	3.91E-05	3.60E-05	3.70E-04	8.70E-05	6.76E-04	6.97E-07	6.19E-02	7.85E-06	0.00E+00	6.21E-02	7.82E-02	7.19E-02	7.40E-01	1.74E-01	1.35E+00	1.39E-03	1.24E+02	1.57E-02	0.00E+00	1.24E+02
Light Tower	0.62	7	50	1.31E-05	1.21E-05	1.46E-04	5.16E-05	1.39E-04	1.81E-07	1.40E-02	4.66E-06	0.00E+00	1.41E-02	2.63E-02	2.42E-02	2.93E-01	1.03E-01	2.78E-01	3.62E-04	2.80E+01	9.31E-03	0.00E+00	2.82E+01
Loader	0.54	6	250	2.81E-05	2.59E-05	2.10E-04	7.46E-05	7.67E-04	8.37E-07	7.44E-02	6.73E-06	0.00E+00	7.46E-02	5.63E-02	5.18E-02	4.21E-01	1.49E-01	1.53E+00	1.67E-03	1.49E+02	1.35E-02	0.00E+00	1.49E+02
Maxi Sneeker (Trencher)	0.70	8	50	2.02E-05	1.86E-05	2.18E-04	9.18E-05	1.81E-04	2.13E-07	1.64E-02	8.28E-06	0.00E+00	1.66E-02	4.05E-02	3.72E-02	4.36E-01	1.84E-01	3.62E-01	4.25E-04	3.29E+01	1.66E-02	0.00E+00	3.32E+01
Skid Steer (Bobcat)	0.62	7	50	1.08E-05	9.96E-06	1.25E-04	3.92E-05	1.23E-04	1.65E-07	1.27E-02	3.54E-06	0.00E+00	1.28E-02	2.17E-02	1.99E-02	2.50E-01	7.84E-02	2.46E-01	3.30E-04	2.55E+01	7.07E-03	0.00E+00	2.56E+01
Welding Machine	0.45	5	50	1.45E-05	1.33E-05	1.52E-04	6.22E-05	1.36E-04	1.68E-07	1.30E-02	5.62E-06	0.00E+00	1.31E-02	2.90E-02	2.67E-02	3.04E-01	1.24E-01	2.73E-01	3.35E-04	2.59E+01	1.12E-02	0.00E+00	2.62E+01
Equipment fueled with Propane				Emission factors (ton/hr)																			
Aerial Lift	0.51	6	120	1.39E-06	1.39E-06	7.09E-04	2.48E-06	1.02E-04	0.00E+00	1.56E-02	2.08E-05	0.00E+00	1.61E-02	2.78E-03	2.78E-03	1.42E+00	4.95E-03	2.03E-01	0.00E+00	3.12E+01	4.15E-02	0.00E+00	3.21E+01
Fork Lift	0.30	4	50	8.14E-07	8.14E-07	1.48E-04	1.41E-06	6.05E-05	0.00E+00	9.15E-03	1.18E-05	0.00E+00	9.40E-03	1.63E-03	1.63E-03	2.95E-01	2.82E-03	1.21E-01	0.00E+00	1.83E+01	2.36E-02	0.00E+00	1.88E+01
Telehandler	0.51	6	120	1.39E-06	1.39E-06	7.09E-04	2.48E-06	1.02E-04	0.00E+00	1.56E-02	2.08E-05	0.00E+00	1.61E-02	2.78E-03	2.78E-03	1.42E+00	4.95E-03	2.03E-01	0.00E+00	3.12E+01	4.15E-02	0.00E+00	3.21E+01
Vehicles with Onroad Engines for Emissions Estimates	Onsite Miles per Day Travelled per Vehicle	Hours/Day	Vehicle Weight (lbs)	Emission factors (g/mile)																			
Concrete Delivery Truck for general construction	7	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.18E-03	1.95E-03	1.61E-02	7.59E-03	3.58E-02	3.85E-05	4.07E+00	6.55E-06	6.17E-06	4.07E+00
Concrete Delivery Truck for bridge	1.6	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	4.98E-04	4.47E-04	3.67E-03	1.73E-03	8.18E-03	8.81E-06	9.30E-01	1.50E-06	1.41E-06	9.30E-01
Concrete Pump Truck for bridge	0.1	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-05	2.79E-05	2.29E-04	1.08E-04	5.11E-04	5.51E-07	5.81E-02	9.36E-08	8.81E-08	5.81E-02
Dump Truck	6.8	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.11E-03	1.90E-03	1.56E-02	7.37E-03	3.48E-02	3.74E-05	3.95E+00	6.37E-06	5.99E-06	3.95E+00
Flatbed Truck	27.2	12	20,000	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	2.90E-03	2.59E-03	2.61E-02	2.26E-03	4.65E-02	6.99E-05	7.51E+00	5.49E-06	8.49E-06	7.52E+00
Staff & Security Truck	48	24	4,500	1.00E-02	1.00E-02	2.10E+00	5.50E-02	3.00E-02	9.00E-03	3.26E+02	1.04E-01	8.13E-02	3.54E+02	4.41E-05	4.41E-05	9.25E-03	2.42E-04	1.32E-04	3.96E-05	1.44E+00	4.56E-04	3.58E-04	1.56E+00
Pickup Truck	6.8	12	8,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	7.44E+02	8.99E-05	6.83E-05	6.29E-03	4.33E-04	5.87E-04	8.74E-06	9.01E-01	8.79E-05	8.08E-05	9.28E-01
Water/Soiltac Truck	13.6	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	4.23E-03	3.80E-03	3.12E-02	1.47E-02	6.96E-02	7.49E-05	7.90E+00	1.27E-05	1.20E-05	7.91E+00
General Materials Delivery Truck for general cons	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
General Materials Delivery Truck for bridge	1.6	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-04	2.23E-04	1.83E-03	8.67E-04	4.09E-03	4.41E-06	4.65E-01	7.49E-07	7.05E-07	4.65E-01
Suncatcher Pedestals Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Stirling Engines Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Suncatcher Metal Supports Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Suncatcher Mirrors Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Electrical and Control Systems Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Azimuth and Elevation Drive Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Water Delivery Trucks	7	24	23,400	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	3.73E-04	3.34E-04	3.35E-03	2.91E-04	5.98E-03	8.99E-06	9.67E-01	7.07E-07	1.09E-06	9.67E-01
Worker Passenger Vehicles	9	24	4,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	3.54E+02	5.95E-05	4.52E-05	4.16E-03	2.87E-04	3.88E-04	5.78E-06	5.96E-01	5.81E-05	5.34E-05	6.14E-01

Notes:

1. Emission factors from CARB Off-road Mobile Source Emission Factors (2006-2020) for diesel and propane equipment. (2009 data used).
   Dozer = Crawler Tractor
   Loader = Rubber Tired Loader
   Backhoe = Tractors/Loaders/Backhoes
   Light Tower = Other Construction Equipment
2. Utilization Load Factors from SCAQMD
3. $PM_{2.5}$ emission factors obtained by multiplying the PM_{10} emissions by $PM_{2.5}$ fraction in SCAQMD CEIDARS list for onroad or offroad diesel vehicles.
4. For propane equipment assumed $PM_{2.5}$ and PM_{10} Fraction of total PM is 1.000
5. Onroad vehicle emissions from EMFAC2007 model. The vehicle description in EMFAC2007 model are as follows:
   - Flatbed Truck and Water Delivery Truck are Medium-Heavy-Duty (MHD-DSL).
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Worker Passenger Vehicle and Pickup Truck are Passenger Car (LDA-ALL)
   - Concrete Delivery Truck, Concrete Pump Truck, Dump Truck, Water/Soiltac Truck, General Materials Delivery Trucks, Suncatcher Pedestals Delivery Truck, Stirling Engines Delivery Truck, Suncatcher Metal Supports Delivery Truck, Suncatcher Mirrors Delivery Truck, Electrical and Control Systems Delivery Truck, and Azimuth & Elevation Drive Delivery Truck are all Heavy-Heavy-Duty (HHD-DSL)
6. The emissions of "Toyota Highlander Hybrid" (Staff & Security Truck) meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
7. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
8. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009. Hybrid Truck is assumed to be gasoline light truck here.
9. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)

CO_2 GWP (SAR, 1996)	=	1
CH_4 GWP (SAR, 1996)	=	21
N_2O GWP (SAR, 1996)	=	310

MONTHLY EMISSIONS (month 1-20)

	Month 1 Daily Emissions (lb/day)											Month 2 Daily Emissions (lb/day)											Month 3 Daily Emissions (lb/day)											Month 4 Daily Emissions (lb/day)										
	Quantity Mo 1	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 2	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 3	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 4	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																												
Air Compressor	1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
Asphalt Paver	-	-	-	-	-	-	-	-	-	-	-	1.00	0.60	0.56	3.69	1.16	6.86	0.01	489.47	0.10	-	491.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe	3.00	0.87	0.80	6.12	1.54	9.57	0.01	874.45	0.14	-	877.36	9.00	2.61	2.40	18.37	4.61	28.72	0.03	2,623.36	0.42	-	2,632.09	6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
Compactor	2.00	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36	4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72
Crane small	1.00	0.28	0.26	2.52	0.62	4.79	0.00	414.21	0.06	-	415.39	3.00	0.83	0.77	7.55	1.87	14.38	0.01	1,242.62	0.17	-	1,246.16	5.00	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94	6.00	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
Crane large	1.00	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	1.00	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	1.00	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43
Dozer	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
Generator	1.00	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	1.00	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	1.00	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	2.00	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
Grader	2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03	4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06
Light Tower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
Loader	2.00	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67	4.00	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	4.00	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	6.00	2.19	2.01	16.36	5.80	59.64	0.07	5,787.01	0.52	-	5,798.01
Mavi Sneeker (Trencher)	-	-	-	-	-	-	-	-	-	-	-	2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
Skid Steer (Bobcat)	-	-	-	-	-	-	-	-	-	-	-	1.00	0.16	0.15	1.86	0.58	1.83	0.00	189.69	0.05	-	190.80	1.00	0.16	0.15	1.86	0.58	1.83	0.00	189.69	0.05	-	190.80	2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
Welding Machine	-	-	-	-	-	-	-	-	-	-	-	1.00	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32	2.00	0.31	0.29	3.29	1.34	2.95	0.00	280.10	0.12	-	282.64	3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
Equipment fueled with Propane																																												
Aerial Lift	2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
Fork Lift	2.00	0.01	0.01	2.12	0.02	0.87	-	131.72	0.17	-	135.29	6.00	0.04	0.04	6.37	0.06	2.62	-	395.16	0.51	-	405.88	8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
Telehandler	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	0.02	0.02	8.67	0.03	1.24	-	191.16	0.25	-	196.49	1.00	0.02	0.02	8.67	0.03	1.24	-	191.16	0.25	-	196.49
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Truck for bridge	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16
Concrete Pump Truck for bridge	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70
Dump Truck	3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31	8.00	0.20	0.18	1.50	0.71	3.34	0.00	379.30	0.00	0.00	379.49	8.00	0.20	0.18	1.50	0.71	3.34	0.00	379.30	0.00	0.00	379.49	7.00	0.18	0.16	1.31	0.62	2.92	0.00	331.88	0.00	0.00	332.05
Flatbed Truck	2.00	0.07	0.06	0.63	0.05	1.12	0.00	180.33	0.00	0.00	180.40	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
Staff & Security Truck	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
Pickup Truck	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
Water/Soiltac Truck	5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36	14.00	0.71	0.64	5.24	2.48	11.69	0.01	1,327.54	0.00	0.00	1,328.20	8.00	0.41	0.36	2.99	1.42	6.68	0.01	758.59	0.00	0.00	758.97	8.00	0.41	0.36	2.99	1.42	6.68	0.01	758.59	0.00	0.00	758.97
General Materials Delivery Truck for general cons	-	-	-	-	-	-	-	-	-	-	-	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
General Materials Delivery Truck for bridge	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32
Suncatcher Pedestals Delivery Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
Stirling Engines Delivery Truck	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
Suncatcher Metal Supports Delivery Truck	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
Suncatcher Mirrors Delivery Truck	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
Electrical and Control Systems Delivery Truck	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
Azimuth and Elevation Drive Delivery Truck	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
Water Delivery Trucks	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
Worker Passenger Vehicles	67.00	0.10	0.07	6.69	0.46	0.62	0.01	959.11	0.09	0.09	987.72	180.00	0.26	0.20	17.98	1.24	1.68	0.02	2,576.72	0.25	0.23	2,653.56	249.00	0.36	0.27	24.87	1.71	2.32	0.03	3,564.46	0.35	0.32	3,670.76	219.00	0.31	0.24	21.88	1.51	2.04	0.03	3,135.01	0.31	0.28	3,226.50
Total	**185.00**	**6.83**	**6.24**	**82.38**	**17.16**	**120.83**	**0.14**	**13,418.04**	**1.96**	**0.15**	**13,506.49**	**354.00**	**14.56**	**13.31**	**193.03**	**36.52**	**237.65**	**0.27**	**26,483.47**	**4.88**	**0.30**	**26,679.05**	**419.00**	**13.63**	**12.44**	**205.33**	**35.21**	**230.03**	**0.27**	**26,829.68**	**5.33**	**0.39**	**27,061.87**	**395.00**	**16.67**	**15.24**	**231.48**	**43.98**	**297.38**	**0.34**	**33,073.04**	**6.13**	**0.35**	**33,310.03**

MONTHLY EMISSIONS (month 21-41)

	Month 21 Daily Emissions (lb/day)											Month 22 Daily Emissions (lb/day)											Month 23 Daily Emissions (lb/day)											Month 24 Daily Emissions (lb/day)										
	Quantity Mo 21	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 22	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 23	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 24	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																												
Air Compressor	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94
Crane large	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07
Dozer	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	0.00	273.59
Grader	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mavi Sneeker (Trencher)	1	0.34	0.31	3.66	1.54	3.04	0.00	276.26	0.14	0.00	279.18	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane																																												
Aerial Lift	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99
Fork Lift	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88
Telehandler	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Pump Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 5 Daily Emissions (lb/day)										
Quantity Mo 5	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-
6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72
6.00	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
2.00	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
6.00	2.19	2.01	16.36	5.80	59.64	0.07	5,787.01	0.52	-	5,798.01
2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
-	-	-	-	-	-	-	-	-	-	-
1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16
1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70
5.00	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
7.00	0.36	0.32	2.62	1.24	5.84	0.01	663.77	0.00	0.00	664.10
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
219.00	0.31	0.24	21.88	1.51	2.04	0.03	3,135.01	0.31	0.28	3,228.50
398.00	**17.40**	**15.92**	**248.13**	**47.12**	**304.72**	**0.35**	**33,819.04**	**6.69**	**0.35**	**34,067.83**

Month 6 Daily Emissions (lb/day)										
Quantity Mo 6	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-
6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72
8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
5.00	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
3.00	1.63	1.50	15.45	3.63	28.22	0.03	2,585.16	0.33	-	2,592.05
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
4.00	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
3.00	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
-	-	-	-	-	-	-	-	-	-	-
5.00	0.03	0.03	0.22	0.10	0.49	0.00	55.78	0.00	0.00	55.81
1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70
5.00	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
7.00	0.36	0.32	2.62	1.24	5.84	0.01	663.77	0.00	0.00	664.10
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
12.00	0.07	0.06	0.53	0.25	1.18	0.00	133.87	0.00	0.00	133.94
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
479.00	0.68	0.52	47.85	3.29	4.46	0.07	6,856.94	0.67	0.61	7,065.43
685.00	**20.21**	**18.46**	**334.20**	**58.41**	**334.11**	**0.41**	**40,348.92**	**8.89**	**0.68**	**40,747.34**

Month 7 Daily Emissions (lb/day)										
Quantity Mo 7	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-
6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72
8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
5.00	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
3.00	1.63	1.50	15.45	3.63	28.22	0.03	2,585.16	0.33	-	2,592.05
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
4.00	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
3.00	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16
1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70
5.00	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
487.00	0.70	0.53	52.45	3.35	4.54	0.07	6,971.46	0.68	0.62	7,179.37
673.00	**18.95**	**17.30**	**315.22**	**55.02**	**308.72**	**0.38**	**37,910.54**	**8.40**	**0.69**	**38,301.64**

Month 8 Daily Emissions (lb/day)										
Quantity Mo 8	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-
6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72
8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
5.00	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
3.00	1.63	1.50	15.45	3.63	28.22	0.03	2,585.16	0.33	-	2,592.05
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
4.00	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
3.00	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16
-	-	-	-	-	-	-	-	-	-	-
5.00	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
-	-	-	-	-	-	-	-	-	-	-
1.00	0.03	0.02	0.19	0.09	0.43	0.00	48.81	0.00	0.00	48.83
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
385.00	0.55	0.42	38.46	2.65	3.59	0.05	5,511.32	0.54	0.49	5,675.68
559.00	**16.06**	**14.66**	**280.61**	**47.47**	**246.55**	**0.31**	**30,446.05**	**7.66**	**0.56**	**30,781.01**

Month 25 Daily Emissions (lb/day)										
Quantity Mo 25	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94
3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	0.00	273.59
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 9 Daily Emissions (lb/day)										
Quantity Mo 9	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-
5.00	1.45	1.33	10.21	2.56	15.95	0.02	1,457.42	0.23	-	1,462.27
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
5.00	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
3.00	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
334.00	0.48	0.36	33.36	2.30	3.11	0.05	4,781.25	0.47	0.43	4,923.84
498.00	**15.06**	**13.75**	**224.99**	**44.93**	**223.22**	**0.28**	**27,087.09**	**6.16**	**0.50**	**27,370.18**

Month 10 Daily Emissions (lb/day)										
Quantity Mo 10	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
7.00	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
1.00	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
2.00	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
305.00	0.44	0.33	30.47	2.10	2.84	0.04	4,366.11	0.43	0.39	4,496.32
460.00	**13.86**	**12.65**	**212.73**	**42.25**	**200.13**	**0.26**	**24,491.11**	**5.94**	**0.46**	**24,757.99**

Month 11 Daily Emissions (lb/day)										
Quantity Mo 11	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7.00	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
7.00	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
-	-	-	-	-	-	-	-	-	-	-
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1.00	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
305.00	0.44	0.33	30.47	2.10	2.84	0.04	4,366.11	0.43	0.39	4,496.32
455.00	**12.10**	**11.03**	**189.60**	**37.96**	**160.99**	**0.22**	**20,884.37**	**5.31**	**0.46**	**21,137.85**

Month 12 Daily Emissions (lb/day)										
Quantity Mo 12	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7.00	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
7.00	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
-	-	-	-	-	-	-	-	-	-	-
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1.00	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
334.00	0.48	0.36	33.36	2.30	3.11	0.05	4,781.25	0.47	0.43	4,923.84
498.00	**15.06**	**13.75**	**224.99**	**44.93**	**223.22**	**0.28**	**27,087.09**	**6.16**	**0.50**	**27,370.18**

Month 29 Daily Emissions (lb/day)										
Quantity Mo 29	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 13 Daily Emissions (lb/day)										
Quantity Mo 13	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7.00	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
7.00	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
-	-	-	-	-	-	-	-	-	-	-
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1.00	0.36	0.24	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
357.00	0.51	0.39	35.66	2.46	3.33	0.05	5,110.50	0.50	0.46	5,262.90
505.00	**11.86**	**10.80**	**191.51**	**36.98**	**158.53**	**0.22**	**21,348.66**	**5.26**	**0.52**	**21,621.80**

Month 14 Daily Emissions (lb/day)										
Quantity Mo 14	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
9.00	2.50	2.30	22.64	5.62	43.15	0.04	3,727.85	0.51	-	3,738.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
347.00	0.50	0.38	34.66	2.39	3.23	0.05	4,881.45	0.48	0.44	5,027.03
502.00	**14.23**	**12.99**	**252.04**	**41.49**	**220.62**	**0.27**	**27,166.28**	**6.89**	**0.50**	**27,467.32**

Month 15 Daily Emissions (lb/day)										
Quantity Mo 15	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2.00	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
9.00	2.50	2.30	22.64	5.62	43.15	0.04	3,727.85	0.51	-	3,738.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
9.00	0.05	0.05	9.56	0.09	3.92	-	592.75	0.77	-	608.81
8.00	0.14	0.14	69.38	0.24	9.95	-	1,529.25	2.03	-	1,571.95
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
347.00	0.50	0.38	34.66	2.39	3.23	0.05	4,967.34	0.48	0.45	5,115.48
511.00	**13.93**	**12.72**	**285.85**	**40.90**	**221.51**	**0.27**	**27,702.85**	**7.93**	**0.51**	**28,028.27**

Month 16 Daily Emissions (lb/day)										
Quantity Mo 16	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2.00	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
7.00	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
332.00	0.47	0.36	33.16	2.28	3.09	0.05	4,752.62	0.46	0.43	4,894.35
489.00	**12.76**	**11.64**	**254.70**	**38.26**	**199.02**	**0.25**	**25,283.96**	**7.01**	**0.49**	**25,584.07**

Month 17 Daily Emissions (lb/day)										
Quantity Mo 17	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2.00	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
6.00	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
1.00	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
2.00	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
2.00	0.31	0.29	3.29	1.34	2.95	0.00	280.10	0.12	-	282.64
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
153.00	0.22	0.17	15.28	1.05	1.43	0.02	2190.21	0.21	0.20	2255.53
253.00	**2.70**	**2.43**	**115.09**	**6.97**	**51.47**	**0.07**	**8440.14**	**2.81**	**0.26**	**8580.26**

Month 33 Daily Emissions (lb/day)										
Quantity Mo 33	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 18 Daily Emissions (lb/day)										
Quantity Mo 18	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
-	-	-	-	-	-	-	-	-	-	-
1.00	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
6.00	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
-	-	-	-	-	-	-	-	-	-	-
1.00	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
1.00	0.36	0.34	2.72	0.97	9.94	0.01	964.50	0.09	-	966.33
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
1.00	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
280.00	0.40	0.30	27.97	1.93	2.61	0.04	4,008.23	0.39	0.36	4,127.77
418.00	**8.23**	**7.48**	**188.01**	**26.73**	**121.85**	**0.17**	**17,335.63**	**5.19**	**0.43**	**17,576.83**

Month 19 Daily Emissions (lb/day)										
Quantity Mo 19	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
-	-	-	-	-	-	-	-	-	-	-
1.00	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
5.00	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
-	-	-	-	-	-	-	-	-	-	-
1.00	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
-	-	-	-	-	-	-	-	-	-	-
2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
-	-	-	-	-	-	-	-	-	-	-
1.00	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	0.28	0.25	2.50	0.22	4.46	0.01	721.34	0.00	0.00	721.60
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
247.00	0.35	0.27	24.67	1.70	2.30	0.03	3,535.83	0.34	0.32	3,641.28
369.00	**5.48**	**4.96**	**123.12**	**16.78**	**81.55**	**0.12**	**12,680.32**	**3.27**	**0.38**	**12,867.92**

Month 20 Daily Emissions (lb/day)										
Quantity Mo 20	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
5.00	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
-	-	-	-	-	-	-	-	-	-	-
1.00	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
-	-	-	-	-	-	-	-	-	-	-
2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
-	-	-	-	-	-	-	-	-	-	-
1.00	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	0.28	0.25	2.50	0.22	4.46	0.01	721.34	0.00	0.00	721.60
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
226.00	0.32	0.25	22.58	1.55	2.11	0.03	3,235.22	0.32	0.29	3,331.70
347.00	**5.30**	**4.79**	**119.39**	**15.95**	**79.98**	**0.12**	**12,251.53**	**3.18**	**0.36**	**12,428.89**

Month 38 Daily Emissions (lb/day)										
Quantity Mo 38	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Monthly Comparison of Construction Equipment Emissions:

Month of Contruction	Total Equipment Quantity	Daily Emissions (lb/day)									
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	185	6.83	6.24	82.38	17.16	120.83	0.14	13418.04	1.96	0.153	13506.49
2	354	14.56	13.31	193.03	36.52	237.65	0.27	26483.47	4.88	0.301	26679.05
3	419	13.63	12.44	205.33	35.21	230.03	0.27	26829.68	5.33	0.388	27061.87
4	395	16.67	15.24	231.48	43.98	297.38	0.34	33073.04	6.13	0.349	33310.03
5	398	17.40	15.92	248.13	47.12	304.72	0.35	33819.04	6.69	0.349	34067.83
6	685	20.21	18.46	334.20	58.41	334.11	0.41	40348.92	8.89	0.683	40747.34
7	673	18.95	17.30	315.22	55.02	308.72	0.38	37910.54	8.40	0.693	38301.64
8	559	16.06	14.66	280.61	47.47	246.55	0.31	30446.05	7.66	0.562	30781.01
9	498	15.06	13.75	224.99	44.93	223.22	0.28	27087.09	6.16	0.496	27370.18
10	460	13.86	12.65	212.73	42.25	200.13	0.26	24491.11	5.94	0.458	24757.99
11	455	12.10	11.03	189.60	37.96	160.99	0.22	20884.37	5.31	0.458	21137.85
12	455	12.10	11.03	189.60	37.96	160.99	0.22	20884.37	5.31	0.458	21137.85
13	505	11.86	10.80	191.51	36.98	158.53	0.22	21348.66	5.26	0.525	21621.80
14	502	14.23	12.99	252.04	41.49	220.62	0.27	27166.28	6.89	0.505	27467.32
15	511	13.93	12.72	285.85	40.90	221.51	0.27	27702.85	7.93	0.512	28028.27
16	489	12.76	11.64	254.70	38.26	199.02	0.25	25283.96	7.01	0.493	25584.07
17	476	11.89	10.84	238.07	35.74	180.67	0.23	23379.02	6.54	0.484	23666.47
18	418	8.23	7.48	188.01	26.73	121.85	0.17	17335.63	5.19	0.426	17576.83
19	369	5.48	4.96	123.12	16.78	81.55	0.12	12680.32	3.27	0.384	12867.92
20	347	5.30	4.79	119.39	15.95	79.98	0.12	12251.53	3.18	0.357	12428.89
21	331	5.94	5.38	123.22	17.10	108.96	0.14	15004.73	3.16	0.335	15175.03
22	329	5.59	5.07	119.45	15.56	105.91	0.14	14714.15	3.02	0.334	14881.10
23	326	5.30	4.80	116.53	14.43	102.17	0.13	14316.45	2.95	0.333	14481.85
24	325	5.04	4.56	113.93	13.43	99.44	0.13	14044.76	2.86	0.333	14208.26
25	325	5.04	4.56	113.93	13.43	99.44	0.13	14044.76	2.86	0.333	14208.26
26	318	3.27	2.94	97.17	8.78	56.81	0.09	9770.18	2.47	0.333	9925.31
27	317	3.02	2.71	94.58	7.77	54.08	0.08	9498.49	2.38	0.333	9651.72
28	275	2.96	2.66	90.39	7.48	53.69	0.08	8897.26	2.32	0.279	9032.56
29	273	2.86	2.57	89.64	7.13	52.02	0.08	8707.61	2.32	0.279	8842.81
30	273	2.86	2.57	89.64	7.13	52.02	0.08	8707.61	2.32	0.279	8842.81
31	273	2.86	2.57	89.64	7.13	52.02	0.08	8707.61	2.32	0.279	8842.81
32	267	2.82	2.53	83.27	7.07	49.40	0.08	8312.45	1.81	0.279	8436.94
33	291	2.86	2.56	85.66	7.24	49.63	0.08	8656.01	1.84	0.310	8790.75
34	291	2.86	2.56	85.66	7.24	49.63	0.08	8656.01	1.84	0.310	8790.75
35	295	2.93	2.63	120.35	7.36	54.60	0.08	9420.64	2.86	0.310	9576.72
36	258	2.87	2.59	116.66	7.10	54.26	0.07	8890.98	2.81	0.262	9031.26
37	253	2.70	2.43	115.09	6.97	51.47	0.07	8440.14	2.81	0.262	8580.26
38	253	2.70	2.43	115.09	6.97	51.47	0.07	8440.14	2.81	0.262	8580.26
39	253	2.70	2.43	115.09	6.97	51.47	0.07	8440.14	2.81	0.262	8580.26
40	252	2.70	2.43	114.99	6.96	51.46	0.07	8425.82	2.80	0.261	8565.52
41	252	2.70	2.43	114.99	6.96	51.46	0.07	8425.82	2.80	0.261	8565.52
MAX VALUE (lb/day)	**685**	**20.21**	**18.46**	**334.20**	**58.41**	**334.11**	**0.41**	**40348.9**	**8.89**	**0.693**	**40747.3**

Months for Annual Contruction		Annual Emissions (ton/year)									
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	12	2.31	2.11	35.19	6.55	36.73	0.045	4363.78	0.94	0.0695	4405.17
2	13	2.37	2.17	36.61	6.81	37.22	0.046	4466.88	0.99	0.0744	4510.67
3	14	2.37	2.16	37.38	6.87	37.00	0.046	4475.76	1.01	0.0770	4520.92
4	15	2.37	2.17	38.43	6.95	36.89	0.046	4487.11	1.05	0.0786	4533.48
5	16	2.32	2.12	38.73	6.87	35.61	0.045	4385.85	1.06	0.0805	4433.04
6	17	2.25	2.05	38.60	6.73	34.00	0.043	4250.13	1.06	0.0822	4297.82
7	18	2.09	1.91	36.70	6.31	31.24	0.040	3950.96	1.01	0.0789	3996.61
8	19	1.92	1.75	34.20	5.82	28.28	0.037	3622.97	0.94	0.0749	3665.97
9	20	1.78	1.62	32.10	5.41	26.12	0.034	3386.44	0.88	0.0722	3427.39
10	21	1.66	1.51	30.78	5.05	24.63	0.032	3229.37	0.84	0.0701	3268.85
11	22	1.55	1.41	29.57	4.70	23.41	0.031	3102.27	0.81	0.0685	3140.45
12	23	1.46	1.33	28.62	4.39	22.64	0.030	3016.88	0.78	0.0669	3053.93
13	24	1.37	1.25	27.64	4.07	21.84	0.029	2927.97	0.74	0.0653	2963.84
14	25	1.28	1.17	26.63	3.77	21.07	0.027	2833.02	0.71	0.0628	2867.47
15	26	1.14	1.04	24.61	3.34	18.95	0.025	2606.87	0.66	0.0606	2639.42
16	27	1.00	0.91	22.13	2.91	16.77	0.023	2370.21	0.58	0.0582	2400.52
17	28	0.87	0.79	19.99	2.51	14.88	0.020	2157.18	0.52	0.0555	2185.35
18	29	0.75	0.68	18.06	2.14	13.21	0.018	1966.46	0.47	0.0528	1992.65
19	30	0.68	0.62	16.78	1.88	12.30	0.017	1854.29	0.43	0.0509	1879.10
20	31	0.65	0.59	16.35	1.76	11.92	0.017	1802.65	0.42	0.0495	1826.78
21	32	0.62	0.56	15.88	1.64	11.52	0.016	1751.44	0.40	0.0485	1774.88
22	33	0.58	0.52	15.39	1.52	10.75	0.015	1668.91	0.38	0.0482	1691.89
23	34	0.54	0.49	14.95	1.41	10.01	0.014	1590.15	0.37	0.0479	1612.71
24	35	0.51	0.46	15.00	1.32	9.40	0.014	1526.50	0.37	0.0476	1548.95
25	36	0.48	0.43	15.04	1.23	8.81	0.013	1459.50	0.37	0.0466	1481.65
26	37	0.45	0.41	15.05	1.15	8.19	0.012	1386.64	0.37	0.0457	1408.48
27	38	0.45	0.40	15.28	1.13	8.12	0.012	1369.35	0.37	0.0448	1391.00
28	39	0.44	0.40	15.55	1.12	8.08	0.012	1355.60	0.38	0.0439	1377.07
29	40	0.44	0.39	15.87	1.11	8.05	0.012	1349.47	0.38	0.0436	1371.00
30	41	0.44	0.39	16.20	1.11	8.05	0.012	1345.80	0.39	0.0434	1367.39
MAX VALUE (ton/year)		**2.37**	**2.17**	**38.73**	**6.95**	**37.22**	**0.05**	**4487.11**	**1.06**	**0.0822**	**4533.48**

Combustion Exhaust Emissions On-site (annual)

Maximum annual construction on-site exhausted emissions occurs in months 2-13.
Construction Assumptions - 26 days per month

Equipment	Number of Vehicles per year	Hours/Day	Emission rate per piece of equipment (lb/hr)										Annual Emissions (ton/year)										Number of Vehicles (entire construction period)	entire construction period emissions (ton)									
			PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																	
Air Compressor	26	6	0.027	0.025	0.283	0.118	0.239	0.000	22.251	0.011	0.000	22.474	0.05	0.05	0.55	0.23	0.47	0.00	43.32	0.02	0.00	43.75	37	0.07	0.07	0.78	0.33	0.66	0.00	61.65	0.03	0.00	62.27
Asphalt Paver	1	7	0.085	0.078	0.522	0.164	0.968	0.001	69.134	0.015	0.000	69.444	0.01	0.01	0.05	0.02	0.09	0.00	6.36	0.00	0.00	6.39	1	0.01	0.01	0.05	0.02	0.09	0.00	6.36	0.00	0.00	6.39
Backhoe	66	6	0.051	0.047	0.362	0.091	0.566	0.001	51.682	0.008	0.000	51.854	0.25	0.23	1.75	0.44	2.74	0.00	250.09	0.04	0.00	250.93	88	0.33	0.31	2.34	0.59	3.65	0.00	333.46	0.05	0.00	334.57
Compactor	42	6	0.064	0.059	0.417	0.120	0.738	0.001	58.936	0.011	0.000	59.163	0.20	0.18	1.28	0.37	2.27	0.00	181.49	0.03	0.00	182.19	53	0.25	0.23	1.62	0.47	2.87	0.00	229.02	0.04	0.00	229.91
Crane small	81	5	0.054	0.049	0.488	0.121	0.929	0.001	80.272	0.011	0.000	80.502	0.29	0.27	2.65	0.66	5.05	0.00	436.16	0.06	0.00	437.40	218	0.79	0.72	7.13	1.77	13.59	0.01	1173.86	0.16	0.00	1177.21
Crane large	19	7	0.068	0.063	0.662	0.182	1.771	0.002	179.940	0.016	0.000	180.284	0.12	0.11	1.13	0.31	3.01	0.00	305.78	0.03	0.00	306.37	35	0.21	0.20	2.07	0.57	5.54	0.01	563.28	0.05	0.00	564.36
Dozer	9	7	0.078	0.072	0.574	0.205	1.942	0.002	165.982	0.018	0.000	166.371	0.06	0.06	0.48	0.17	1.61	0.00	137.49	0.02	0.00	137.81	14	0.10	0.09	0.74	0.26	2.50	0.00	213.88	0.02	0.00	214.38
Generator	54	9	0.029	0.026	0.292	0.113	0.307	0.000	30.595	0.010	0.000	30.810	0.18	0.16	1.82	0.70	1.92	0.00	190.72	0.06	0.00	192.06	83	0.27	0.25	2.80	1.08	2.95	0.00	293.15	0.10	0.00	295.20
Grader	28	7	0.078	0.072	0.740	0.174	1.352	0.001	123.810	0.016	0.000	124.140	0.20	0.18	1.88	0.44	3.42	0.00	313.67	0.04	0.00	314.50	36	0.25	0.23	2.41	0.57	4.40	0.00	403.28	0.05	0.00	404.36
Light Tower	19	7	0.026	0.024	0.293	0.103	0.278	0.000	27.964	0.009	0.000	28.160	0.05	0.04	0.54	0.19	0.51	0.00	51.39	0.02	0.00	51.75	32	0.08	0.07	0.91	0.32	0.86	0.00	86.55	0.03	0.00	87.16
Loader	40	6	0.056	0.052	0.421	0.149	1.534	0.002	148.843	0.013	0.000	149.126	0.19	0.17	1.42	0.50	5.17	0.01	501.54	0.05	0.00	502.49	54	0.26	0.24	1.91	0.68	6.98	0.01	677.08	0.06	0.00	678.37
Maxi Sneeker (Trencher)	48	8	0.040	0.037	0.436	0.184	0.362	0.000	32.888	0.017	0.000	33.236	0.21	0.20	2.29	0.96	1.90	0.00	172.39	0.09	0.00	174.21	78	0.34	0.32	3.71	1.56	3.08	0.00	280.13	0.14	0.00	283.09
Skid Steer (Bobcat)	27	7	0.022	0.020	0.250	0.078	0.246	0.000	25.496	0.007	0.000	25.645	0.06	0.05	0.65	0.20	0.64	0.00	66.58	0.02	0.00	66.97	47	0.10	0.09	1.14	0.36	1.12	0.00	115.90	0.03	0.00	116.58
Welding Machine	49	5	0.029	0.027	0.304	0.124	0.273	0.000	25.935	0.011	0.000	26.171	0.10	0.09	1.05	0.43	0.94	0.00	89.21	0.04	0.00	90.02	63	0.13	0.12	1.35	0.55	1.21	0.00	114.70	0.05	0.00	115.74
Equipment fueled with Propane																																	
Aerial Lift	54	6	0.003	0.003	1.417	0.005	0.203	0.000	31.235	0.042	0.000	32.107	0.01	0.01	6.09	0.02	0.87	0.00	134.19	0.18	0.00	137.94	159	0.04	0.04	17.93	0.06	2.57	0.00	395.12	0.53	0.00	406.15
Fork Lift	94	4	0.002	0.002	0.295	0.003	0.121	0.000	18.295	0.024	0.000	18.791	0.01	0.01	1.30	0.01	0.53	0.00	80.48	0.10	0.00	82.66	214	0.02	0.02	2.95	0.03	1.21	0.00	183.22	0.24	0.00	188.19
Telehandler	35	6	0.003	0.003	1.417	0.005	0.203	0.000	31.235	0.042	0.000	32.107	0.01	0.01	3.95	0.01	0.57	0.00	86.98	0.12	0.00	89.40	131	0.03	0.03	14.77	0.05	2.12	0.00	325.54	0.43	0.00	334.63
Vehicles with Onroad Engines for Emissions Estimates																																	
Concrete Delivery Truck for general construction	12	12	0.002	0.002	0.016	0.008	0.036	0.000	4.067	0.000	0.000	4.069	0.00	0.00	0.03	0.01	0.07	0.00	7.61	0.00	0.00	7.62	14	0.00	0.00	0.04	0.02	0.08	0.00	8.88	0.00	0.00	8.89
Concrete Delivery Truck for bridge	10	12	0.000	0.000	0.004	0.002	0.008	0.000	0.930	0.000	0.000	0.930	0.00	0.00	0.01	0.00	0.01	0.00	1.45	0.00	0.00	1.45	11	0.00	0.00	0.01	0.00	0.01	0.00	1.60	0.00	0.00	1.60
Concrete Pump Truck for bridge	6	12	0.000	0.000	0.000	0.000	0.001	0.000	0.058	0.000	0.000	0.058	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	7	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06
Dump Truck	46	12	0.002	0.002	0.016	0.007	0.035	0.000	3.951	0.000	0.000	3.953	0.02	0.01	0.11	0.05	0.25	0.00	28.35	0.00	0.00	28.37	56	0.02	0.02	0.14	0.06	0.30	0.00	34.52	0.00	0.00	34.53
Flatbed Truck	120	12	0.003	0.003	0.026	0.002	0.046	0.000	7.514	0.000	0.000	7.517	0.05	0.05	0.49	0.04	0.87	0.00	140.66	0.00	0.00	140.71	310	0.14	0.13	1.26	0.11	2.25	0.00	363.37	0.00	0.00	363.51
Staff & Security Truck	72	24	0.000	0.000	0.009	0.000	0.000	0.000	1.437	0.000	0.000	1.558	0.00	0.00	0.21	0.01	0.00	0.00	32.29	0.01	0.01	35.00	246	0.00	0.00	0.71	0.02	0.01	0.00	110.33	0.03	0.03	119.58
Pickup Truck	132	12	0.000	0.000	0.006	0.000	0.001	0.000	0.901	0.000	0.000	0.928	0.00	0.00	0.13	0.01	0.01	0.00	18.56	0.00	0.00	19.11	451	0.01	0.00	0.44	0.03	0.04	0.00	63.41	0.01	0.01	65.30
Water/Soiltac Truck	79	12	0.004	0.004	0.031	0.015	0.070	0.000	7.902	0.000	0.000	7.906	0.05	0.05	0.38	0.18	0.86	0.00	97.38	0.00	0.00	97.43	160	0.11	0.09	0.78	0.37	1.74	0.00	197.23	0.00	0.00	197.33
General Materials Delivery Truck for general cons	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	24	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24
General Materials Delivery Truck for bridge	22	24	0.000	0.000	0.002	0.001	0.004	0.000	0.465	0.000	0.000	0.465	0.00	0.00	0.01	0.01	0.03	0.00	3.19	0.00	0.00	3.19	24	0.00	0.00	0.01	0.01	0.03	0.00	3.48	0.00	0.00	3.48
Suncatcher Pedestals Delivery Truck	13	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.00	0.00	0.03	0.02	0.07	0.00	8.25	0.00	0.00	8.25	28	0.01	0.01	0.07	0.03	0.16	0.00	17.77	0.00	0.00	17.77
Stirling Engines Delivery Truck	72	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.02	0.02	0.18	0.09	0.40	0.00	45.68	0.00	0.00	45.71	246	0.08	0.07	0.62	0.29	1.37	0.00	156.08	0.00	0.00	156.16
Suncatcher Metal Supports Delivery Truck	132	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.04	0.04	0.33	0.16	0.74	0.00	83.75	0.00	0.00	83.79	451	0.15	0.14	1.13	0.53	2.52	0.00	286.15	0.00	0.00	286.30
Suncatcher Mirrors Delivery Truck	84	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.03	0.03	0.21	0.10	0.47	0.00	53.30	0.00	0.00	53.32	287	0.10	0.09	0.72	0.34	1.60	0.00	182.10	0.00	0.00	182.19
Electrical and Control Systems Delivery Truck	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	82	0.03	0.02	0.21	0.10	0.46	0.00	52.03	0.00	0.00	52.05
Azimuth and Elevation Drive Delivery Truck	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	82	0.03	0.02	0.21	0.10	0.46	0.00	52.03	0.00	0.00	52.05
Water Delivery Trucks	468	24	0.000	0.000	0.003	0.000	0.006	0.000	0.967	0.000	0.000	0.967	0.05	0.05	0.49	0.04	0.87	0.00	141.18	0.00	0.00	141.23	1599	0.19	0.17	1.67	0.15	2.98	0.00	482.36	0.00	0.00	482.54
Worker Passenger Vehicles	3824	24	0.000	0.000	0.004	0.000	0.000	0.000	0.596	0.000	0.000	0.614	0.07	0.05	4.97	0.34	0.46	0.01	711.63	0.07	0.06	732.86	9762	0.18	0.14	12.68	0.87	1.18	0.02	1816.67	0.18	0.16	1870.85
	5856										Total		**2.37**	**2.17**	**36.61**	**6.81**	**37.22**	**0.05**	**4466.88**	**0.99**	**0.07**	**4510.67**		**4.34**	**3.95**	**85.34**	**12.31**	**70.73**	**0.09**	**9299.49**	**2.24**	**0.20**	**9407.99**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Calico Solar
Fugitive Dust Emissions (on-site)
Peak month = 6

Maximum annual construction on-site exhausted emissions occurs in months 2-13.

Travel on sealed roads (paved)

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
7.4 sL = road surface silt loading (grams per square meter) (g/m^2), from Table 13.2.1-4 for Municipal solid waste landfill
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants
Solar One Technicians

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	Number of Vehicles (month 6)	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on sealed roads	Max Daily Distance per Vehicle to drive on sealed roads (mile/day)	Max Daily VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Number of Vehicles per year (months 2-13)	Max Annual VMT (all vehicles)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Diesel Construction Equipment											
Air Compressor	3	0	0%	0.0	0	0.5	6	26	0	0.000	0.002
Asphalt Paver	0	0.2	0%	0.0	0	25	7	1	0	0.133	0.886
Backhoe	6	0	0%	0.0	0	11	6	66	0	0.038	0.258
Compactor	4	0	0%	0.0	0	10	6	42	0	0.033	0.224
Crane small	8	0.5	50%	0.3	2	10	5	81	526.5	0.033	0.224
Crane large	4	0.5	0%	0.0	0	35	7	19	0	0.220	1.468
Dozer	1	0	0%	0.0	0	20	7	9	0	0.095	0.634
Generator	5	0	0%	0.0	0	0.5	9	54	0	0.000	0.002
Grader	4	0	0%	0.0	0	20	7	28	0	0.095	0.634
Light Tower	2	0	0%	0.0	0	0.25	7	19	0	0.000	0.000
Loader	5	0	0%	0.0	0	25	6	40	0	0.133	0.886
Maxi Sneeker (Trencher)	5	0	0%	0.0	0	5	8	48	0	0.012	0.079
Skid Steer (Bobcat)	4	0	0%	0.0	0	2	7	27	0	0.003	0.020
Welding Machine	5	0	0%	0.0	0	0.5	5	49	0	0.000	0.002
Equipment fueled with Propane											
Aerial Lift	6	1	50%	0.5	3	4	6	54	702	0.008	0.056
Fork Lift	8	1	50%	0.5	4	3	4	94	1222	0.005	0.036
Telehandler	6	1	50%	0.5	3	3	6	35	455	0.005	0.036
Vehicles with Onroad Engines for Emissions Estimates											
Concrete Delivery Truck for general construction	0	7	90%	6.3	0	20	12	12	1965.6	0.095	0.634
Concrete Delivery Truck for bridge	5	1.6	90%	1.4	7	20	12	10	374.4	0.095	0.634
Concrete Pump Truck for bridge	1	0.1	90%	0.1	0	20	12	6	14.04	0.095	0.634
Dump Truck	5	6.8	50%	3.4	17	20	12	46	4066.4	0.095	0.634
Flatbed Truck	10	27.2	100%	27.2	272	10	12	120	84864	0.033	0.224
Staff & Security Truck	6	48	100%	48.0	288	2.25	24	72	89856	0.003	0.023
Pickup Truck	11	6.8	95%	6.5	71	4	12	132	22170.72	0.008	0.056
Water/Soiltac Truck	7	13.6	25%	3.4	24	20	12	79	6983.6	0.095	0.634
General Materials Delivery Truck for general cor	3	7	100%	7.0	21	20	24	24	4368	0.095	0.634
General Materials Delivery Truck for bridge	12	1.6	100%	1.6	19	20	24	22	915.2	0.095	0.634
Suncatcher Pedestals Delivery Truck	3	7	50%	3.5	11	20	24	13	1183	0.095	0.634
Stirling Engines Delivery Truck	6	7	100%	7.0	42	20	24	72	13104	0.095	0.634
Suncatcher Metal Supports Delivery Truck	11	7	100%	7.0	77	20	24	132	24024	0.095	0.634
Suncatcher Mirrors Delivery Truck	7	7	100%	7.0	49	20	24	84	15288	0.095	0.634
Electrical and Control Systems Delivery Truck	2	7	100%	7.0	14	20	24	24	4368	0.095	0.634
Azimuth and Elevation Drive Delivery Truck	2	7	100%	7.0	14	20	24	24	4368	0.095	0.634
Water Delivery Trucks	39	7	100%	7.0	273	11.7	24	468	85176	0.042	0.283
Worker Passenger Vehicles	479	9	100%	9.0	4311	2	24	3824	894816	0.003	0.020

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Diesel Construction Equipment															
Air Compressor	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	0%	0%	0.09	0.09	0.45	0.45	0.11%	0.06	0.06	0.01	0.01	0.07	0.07	0.01	0.01
Crane large	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dozer	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane															
Aerial Lift	0%	0%	0.03	0.03	0.17	0.17	0.04%	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
Fork Lift	0%	0%	0.04	0.04	0.15	0.15	0.03%	0.02	0.02	0.01	0.01	0.02	0.02	0.00	0.00
Telehandler	0%	0%	0.02	0.02	0.11	0.11	0.03%	0.01	0.01	0.00	0.00	0.02	0.02	0.00	0.00
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.62	0.62	0.00	0.00	0.00	0.00	0.09	0.09
Concrete Delivery Truck for bridge	0%	0%	0.38	0.38	4.56	4.56	1.08%	0.12	0.12	0.06	0.06	0.68	0.68	0.02	0.02
Concrete Pump Truck for bridge	0%	0%	0.00	0.00	0.06	0.06	0.01%	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Dump Truck	0%	0%	0.90	0.90	10.78	10.78	2.56%	1.29	1.29	0.13	0.13	1.61	1.61	0.19	0.19
Flatbed Truck	0%	0%	5.07	5.07	60.89	60.89	14.45%	9.50	9.50	0.75	0.75	9.06	9.06	1.41	1.41
Staff & Security Truck	0%	0%	0.28	0.28	6.76	6.76	1.60%	1.05	1.05	0.04	0.04	0.93	0.93	0.15	0.15
Pickup Truck	0%	0%	0.33	0.33	4.00	4.00	0.95%	0.62	0.62	0.05	0.05	0.58	0.58	0.09	0.09
Water/Soiltac Truck	0%	0%	1.26	1.26	15.09	15.09	3.58%	2.21	2.21	0.19	0.19	2.26	2.26	0.33	0.33
General Materials Delivery Truck for general cor	0%	0%	0.55	0.55	13.31	13.31	3.16%	1.38	1.38	0.08	0.08	1.99	1.99	0.21	0.21
General Materials Delivery Truck for bridge	0%	0%	0.51	0.51	12.17	12.17	2.89%	0.29	0.29	0.08	0.08	1.82	1.82	0.04	0.04
Suncatcher Pedestals Delivery Truck	0%	0%	0.28	0.28	6.66	6.66	1.58%	0.38	0.38	0.04	0.04	1.00	1.00	0.06	0.06
Stirling Engines Delivery Truck	0%	0%	1.11	1.11	26.63	26.63	6.32%	4.15	4.15	0.17	0.17	3.98	3.98	0.62	0.62
Suncatcher Metal Supports Delivery Truck	0%	0%	2.03	2.03	48.82	48.82	11.59%	7.62	7.62	0.30	0.30	7.30	7.30	1.14	1.14
Suncatcher Mirrors Delivery Truck	0%	0%	1.29	1.29	31.07	31.07	7.37%	4.85	4.85	0.19	0.19	4.65	4.65	0.72	0.72
Electrical and Control Systems Delivery Truck	0%	0%	0.37	0.37	8.88	8.88	2.11%	1.38	1.38	0.06	0.06	1.33	1.33	0.21	0.21
Azimuth and Elevation Drive Delivery Truck	0%	0%	0.37	0.37	8.88	8.88	2.11%	1.38	1.38	0.06	0.06	1.33	1.33	0.21	0.21
Water Delivery Trucks	0%	0%	3.22	3.22	77.38	77.38	18.37%	12.07	12.07	0.48	0.48	11.53	11.53	1.80	1.80
Worker Passenger Vehicles	0%	0%	3.52	3.52	84.50	84.50	20.06%	8.77	8.77	0.48	0.48	11.45	11.45	1.19	1.19
TOTAL Fugitive emissions for vehicles traveled on sealed road (paved)			**21.66**	**21.66**	**421.30**	**421.30**		**57.81**	**57.81**	**3.18**	**3.18**	**61.62**	**61.62**	**8.49**	**8.49**

Travel on unpaved surfaces

$E = k * (s/12)^a * (W/3)^b * [(365 - P)/365]$ EPA AP-42 Section 13.2.2 Unpaved Roads Equations 1a and 2

E = size-specific emission factor (lb/VMT)

k, a, b = empirical constants

8.5 s = surface material silt content (%) Construction sites - Scraper routes

W = mean vehicle weight (tons)

constants

	$PM_{2.5}$	PM_{10}	Industrial Roads
k	0.15	1.5	
a	0.9	0.9	
b	0.45	0.45	

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)

Vehicle Type	Number of Vehicles (month 6)	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on unpaved roads	Max Daily Distance per Vehicle to drive on unpaved roads (mile/day)	Max Daily VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Number of Vehicles per year (months 2-13)	Max Annual VMT (all vehicles)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Diesel Construction Equipment											
Air Compressor	3	0	100%	0	0	0.5	6	26	0	0.046	0.460
Asphalt Paver	0	0.2	100%	0.2	0	25	7	1	5.2	0.268	2.676
Backhoe	6	0	100%	0	0	11	6	66	0	0.185	1.849
Compactor	4	0	100%	0	0	10	6	42	0	0.177	1.771
Crane small	8	0.5	50%	0.25	2	10	5	81	526.5	0.177	1.771
Crane large	4	0.5	100%	0.5	2	35	7	19	247	0.311	3.113
Dozer	1	0	100%	0	0	20	7	9	0	0.242	2.420
Generator	5	0	100%	0	0	0.5	9	54	0	0.046	0.460
Grader	4	0	100%	0	0	20	7	28	0	0.242	2.420
Light Tower	2	0	100%	0	0	0.25	7	19	0	0.034	0.337
Loader	5	0	100%	0	0	25	6	40	0	0.268	2.676
Maxi Sneeker (Trencher)	5	0	100%	0	0	5	8	48	0	0.130	1.297
Skid Steer (Bobcat)	4	0	100%	0	0	2	7	27	0	0.086	0.859
Welding Machine	5	0	100%	0	0	0.5	5	49	0	0.046	0.460
Equipment fueled with Propane											
Aerial Lift	6	1	50%	0.5	3	4	6	54	702	0.117	1.173
Fork Lift	8	1	50%	0.5	4	3	4	94	1222	0.103	1.030
Telehandler	6	1	50%	0.5	3	3	6	35	455	0.103	1.030
Vehicles with Onroad Engines for Emissions Estimates											
Concrete Delivery Truck for general construction	0	7	10%	0.7	0	20	12	12	218.4	0.242	2.420
Concrete Delivery Truck for bridge	5	1.6	10%	0.16	1	20	12	10	41.6	0.242	2.420
Concrete Pump Truck for bridge	1	0.1	10%	0.01	0	20	12	6	1.56	0.242	2.420
Dump Truck	5	6.8	50%	3.4	17	20	12	46	4066.4	0.242	2.420
Flatbed Truck	10	27.2	0%	0	0	10	12	120	0	0.177	1.771
Staff & Security Truck	6	48	0%	0	0	2.25	24	72	0	0.091	0.905
Pickup Truck	11	6.8	5%	0.34	4	4	12	132	1166.88	0.117	1.173
Water/Soiltac Truck	7	13.6	75%	10.2	71	20	12	79	20950.8	0.242	2.420
General Materials Delivery Truck for general cor	3	7	0%	0	0	20	24	24	0	0.242	2.420
General Materials Delivery Truck for bridge	12	1.6	0%	0	0	20	24	22	0	0.242	2.420
Suncatcher Pedestals Delivery Truck	3	7	50%	3.5	11	20	24	13	1183	0.242	2.420
Stirling Engines Delivery Truck	6	7	0%	0	0	20	24	72	0	0.242	2.420
Suncatcher Metal Supports Delivery Truck	11	7	0%	0	0	20	24	132	0	0.242	2.420
Suncatcher Mirrors Delivery Truck	7	7	0%	0	0	20	24	84	0	0.242	2.420
Electrical and Control Systems Delivery Truck	2	7	0%	0	0	20	24	24	0	0.242	2.420
Azimuth and Elevation Drive Delivery Truck	2	7	0%	0	0	20	24	24	0	0.242	2.420
Water Delivery Trucks	39	7	0%	0	0	11.7	24	468	0	0.190	1.901
Worker Passenger Vehicles	479	9	0%	0	0	2	24	3824	0	0.086	0.859

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Diesel Construction Equipment															
Air Compressor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	0%	68%	0.69	0.22	3.54	1.13	1.33%	0.47	0.15	0.07	0.02	0.35	0.11	0.05	0.01
Crane large	0%	68%	0.90	0.29	6.23	1.99	2.34%	0.38	0.12	0.09	0.03	0.62	0.20	0.04	0.01
Dozer	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane															
Aerial Lift	0%	68%	0.57	0.18	3.52	1.13	1.32%	0.41	0.13	0.06	0.02	0.35	0.11	0.04	0.01
Fork Lift	0%	68%	1.14	0.37	4.12	1.32	1.55%	0.63	0.20	0.11	0.04	0.41	0.13	0.06	0.02
Telehandler	0%	68%	0.51	0.16	3.09	0.99	1.16%	0.23	0.08	0.05	0.02	0.31	0.10	0.02	0.01
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.26	0.08	0.00	0.00	0.00	0.00	0.03	0.01
Concrete Delivery Truck for bridge	0%	68%	0.16	0.05	1.94	0.62	0.73%	0.05	0.02	0.02	0.01	0.19	0.06	0.01	0.00
Concrete Pump Truck for bridge	0%	68%	0.00	0.00	0.02	0.01	0.01%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0%	68%	3.43	1.10	41.14	13.16	15.46%	4.92	1.57	0.34	0.11	4.11	1.32	0.49	0.16
Flatbed Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	0%	68%	0.37	0.12	4.39	1.40	1.65%	0.68	0.22	0.04	0.01	0.44	0.14	0.07	0.02
Water/Soiltac Truck	0%	68%	14.40	4.61	172.78	55.29	64.91%	25.35	8.11	1.44	0.46	17.28	5.53	2.53	0.81
General Materials Delivery Truck for general cor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Pedestals Delivery Truck	0%	68%	1.06	0.34	25.41	8.13	9.55%	1.43	0.46	0.11	0.03	2.54	0.81	0.14	0.05
Stirling Engines Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Metal Supports Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Mirrors Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electrical and Control Systems Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Azimuth and Elevation Drive Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Delivery Trucks	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL Fugitive emissions for vehicles traveled on unpaved surfaces			**23.23**	**7.43**	**266.18**	**85.18**		**34.84**	**11.15**	**2.32**	**0.74**	**26.62**	**8.52**	**3.48**	**1.11**

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily

Bulldozing & grading EPA AP-42 Section 11.9

$E = p * 1 * s^{1.5} / M^{1.4}$ PM10 Emissions from bulldozing (lb/hr) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.75 p = particle size multiplier for PM10
6.9 s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9 M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.75 lb/hr of PM10

$E = p * 5.7 * s^{1.2} / M^{1.3}$ PM2.5 Emissions from bulldozing (lb/hr) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.105 p = particle size multiplier for PM2.5
6.9 s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9 M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.41 lb/hr of PM2.5

$E = p * 0.051 * S^{2.0}$ PM10 Emissions from grading (lb/VMT) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.6 p = particle size multiplier for PM10
7.1 S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
1.54 lb/VMT of PM10

$E = p * 0.040 * S^{2.5}$ PM2.5 Emissions from grading (lb/VMT) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.031 p = particle size multiplier for PM2.5
7.1 S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
0.17 lb/VMT of PM2.5

Equipment	Quantity/ month	Hours/ Day	VMT/day/ vehicle	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	Number of Vehicles per year (months 2-13)	VMT/year/ vehicle	PM10 Emissions (ton/yr)	PM2.5 Emissions (ton/yr)
Compactor	4	6	2	68%	3.95	0.43	42	2184	0.539	0.058
Dozer	1	7		68%	1.71	0.94	9		0.200	0.110
Maxi Sneeker (Trencher)	5	8	2	68%	4.94	0.53	48	2496	0.616	0.067
Grader	4	7	4	68%	7.90	0.85	28	2912	0.719	0.078
Skid Steer (Bobcat)	4	7		68%	7.17	3.94	27		0.629	0.346
				Grading Total	**16.78**	**1.81**			**1.87**	**0.20**
				Bulldozing Total	**8.87**	**4.88**			**0.83**	**0.46**
				Total	**25.66**	**6.69**			**2.70**	**0.66**

12 months of earth work
12 total construction hours per work day
26 construction days per month

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily

Dirt Piling or Material Handling PM10 Emissions from Material Handling (lb/ton) from EPA AP-42 Chapter 13.2.4 Eq. 1

$E = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ E = Emission factor (lb/ton material handled)
7.45 U = Mean Wind speed (mph) (from 1991-1995 Imperial Co. airport data)
12 M = Moisture content of surface material (%) (from Table 13.2.4-1 for cover at municipal landfill)

	$PM_{2.5}$	PM_{10}
k	0.053	0.35

0.00003 lb/ton of PM2.5
0.00022 lb/ton of PM10

Equipment	Quantity/ month	Hours/ Day	Material Handled per Day (ton)	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	Number of Vehicles per year (months 2-13)	Material Handled per year (ton)	PM10 Emissions (ton/yr)	PM2.5 Emissions (ton/yr)
Backhoe	6	6	3,236	68%	0.2268	0.0343	66	1009503	0.035	0.005
Loader	5	6	3,236	68%	0.2268	0.0343	40	1009503	0.035	0.005
Dump Truck	5	12	6,471	68%	0.4536	0.0687	6	2,019,006	0.071	0.011
				Total	**0.91**	**0.14**			**0.14**	**0.02**

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily
Assume 50% soil movement from loaders and 50% from backhoes

4,654 yd3/day 6,471 ton/day
1,452,000 yd3/project 2,019,006 tons/project 2781 density of soil (lb/yd3)
(USDA NRCS Physical Soil Properti 0.5 depth of disturbance (yards)
for Niland Fine Sand and Rositas Fine Sand soil)
total project
600 acres = 1,452,000 cubic yds, assume depth of soils moved is
3000 total acres disturbed as described in Table 3-17 of Project Description
only a small portion of this soil is picked up and moved via dump druck

Cover Storage Pile

$E = 1.7 * G/1.5 * (365-H)/235 * I/15 * J$ SCAQMD Table A9-9-E
PM10 Emission factor from wind erosion of storage piles per day per acre
15 G = Silt content (%) (from CEQA Handbook Table A9-9-E-1 for blended ore and dirt)
23 H = Number of days with >= 0.01 inches of precipitation per year (from Daggett FAA Airport Station)
34 I = Percentage of time that the unobstructed wind speed exceeds 12 mph at mean pile height
0.5 J = Fraction of TSP that is PM10 = 0.5
28.039 lb/acre/day

wind speed percentage based on 2005 wind speed data as recorded at Daggett FAA Airport station

Source	Quantity	Size of Pile (acre)	Hours/Day	Days/Year per Pile	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)
Cover Storage Pile	2	1	24	182.5	68%	17.95	3.98	1.64	0.36

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily
pile size assumed
piles present only for 6 months

Construction on-site fugitive dust PM10 | **Month 6 construction on-site fugitive dust** | **Months 2-13 construction on-site fugitive dust**

Vehicle Type	Number of Vehicles (month 6)	Max Daily Distance per Vehicle (mile/day)	Sealed Road - PM_{10} Fugitive Emissions	Paved Road - PM_{10} Fugitive Emissions	Unpaved Road - PM_{10} Fugitive Emissions	Earthmoving Equipment - PM_{10} Fugitive Emissions	Total PM_{10} Fugitive Emissions	Sealed Road - PM_{10} Fugitive Emissions	Paved Road - PM_{10} Fugitive Emissions	Unpaved Road - PM_{10} Fugitive Emissions	Earthmoving Equipment - PM_{10} Fugitive Emissions	Total PM_{10} Fugitive Emissions
			lb/day					ton/year				
Diesel Construction Equipment												
Air Compressor	3	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Asphalt Paver	0	0.2	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Backhoe	6	0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.04	0.04
Compactor	4	0	0.00	0.00	0.00	3.95	3.95	0.00	0.00	0.00	0.54	0.54
Crane small	8	0.5	0.45	0.00	1.13		1.58	0.06	0.00	0.15		0.21
Crane large	4	0.5	0.00	0.00	1.99		1.99	0.00	0.00	0.12		0.12
Dozer	1	0	0.00	0.00	0.00	1.71	1.71	0.00	0.00	0.00	0.20	0.20
Generator	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Grader	4	0	0.00	0.00	0.00	7.90	7.90	0.00	0.00	0.00	0.72	0.72
Light Tower	2	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Loader	5	0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.04	0.04
Maxi Sneeker (Trencher)	5	0	0.00	0.00	0.00	4.94	4.94	0.00	0.00	0.00	0.62	0.62
Skid Steer (Bobcat)	4	0	0.00	0.00	0.00	7.17	7.17	0.00	0.00	0.00	0.63	0.63
Welding Machine	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Equipment fueled with Propane												
Aerial Lift	6	1	0.17	0.00	1.13		1.29	0.02	0.00	0.13		0.15
Fork Lift	8	1	0.15	0.00	1.32		1.46	0.02	0.00	0.20		0.22
Telehandler	6	1	0.11	0.00	0.99		1.10	0.01	0.00	0.08		0.08
Vehicles with Onroad Engines for Emissions Estimates												
Concrete Delivery Truck for general construction	0	7	0.00	0.00	0.00		0.00	0.62	0.00	0.08		0.71
Concrete Delivery Truck for bridge	5	1.6	4.56	0.00	0.62		5.18	0.12	0.00	0.02		0.13
Concrete Pump Truck for bridge	1	0.1	0.06	0.00	0.01		0.06	0.00	0.00	0.00		0.01
Dump Truck	5	6.8	10.78	0.00	13.16	0.45	24.40	1.29	0.00	1.57	0.07	2.93
Flatbed Truck	10	27.2	60.89	0.00	0.00		60.89	9.50	0.00	0.00		9.50
Staff & Security Truck	6	48	6.76	0.00	0.00		6.76	1.05	0.00	0.00		1.05
Pickup Truck	11	6.8	4.00	0.00	1.40		5.40	0.62	0.00	0.22		0.84
Water/Soiltac Truck	7	13.6	15.09	0.00	55.29		70.38	2.21	0.00	8.11		10.33
General Materials Delivery Truck for general cor	3	7	13.31	0.00	0.00		13.31	1.38	0.00	0.00		1.38
General Materials Delivery Truck for bridge	12	1.6	12.17	0.00	0.00		12.17	0.29	0.00	0.00		0.29
Suncatcher Pedestals Delivery Truck	3	7	6.66	0.00	8.13		14.79	0.38	0.00	0.46		0.83
Stirling Engines Delivery Truck	6	7	26.63	0.00	0.00		26.63	4.15	0.00	0.00		4.15
Suncatcher Metal Supports Delivery Truck	11	7	48.82	0.00	0.00		48.82	7.62	0.00	0.00		7.62
Suncatcher Mirrors Delivery Truck	7	7	31.07	0.00	0.00		31.07	4.85	0.00	0.00		4.85
Electrical and Control Systems Delivery Truck	2	7	8.88	0.00	0.00		8.88	1.38	0.00	0.00		1.38
Azimuth and Elevation Drive Delivery Truck	2	7	8.88	0.00	0.00		8.88	1.38	0.00	0.00		1.38
Water Delivery Trucks	39	7	77.38	0.00	0.00		77.38	12.07	0.00	0.00		12.07
Worker Passenger Vehicles	479	9	84.50	0.00	0.00		84.50	8.77	0.00	0.00		8.77
Storage piles						17.95	17.95				1.64	1.64
			421.30	**0.00**	**85.18**	**44.51**	**550.99**	**57.81**	**0.00**	**11.15**	**4.48**	**73.44**

Construction on-site fugitive dust PM2.5 | **Month 6 construction on-site fugitive dust** | **Months 2-13 construction on-site fugitive dust**

Vehicle Type	Number of Vehicles (month 6)	Max Daily Distance per Vehicle (mile/day)	Sealed Road - PM2.5 Fugitive Emissions	Paved Road - PM2.5 Fugitive Emissions	Unpaved Road - PM2.5 Fugitive Emissions	Earthmoving Equipment - PM2.5 Fugitive Emissions	Total PM2.5 Fugitive Emissions	Sealed Road - PM2.5 Fugitive Emissions	Paved Road - PM2.5 Fugitive Emissions	Unpaved Road - PM2.5 Fugitive Emissions	Earthmoving Equipment - PM2.5 Fugitive Emissions	Total PM2.5 Fugitive Emissions
			lb/day					ton/year				
Diesel Construction Equipment												
Air Compressor	3	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Asphalt Paver	0	0.2	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Backhoe	6	0	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01
Compactor	4	0	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.06	0.06
Crane small	8	0.5	0.07	0.00	0.11		0.18	0.01	0.00	0.01		0.02
Crane large	4	0.5	0.00	0.00	0.20		0.20	0.00	0.00	0.01		0.01
Dozer	1	0	0.00	0.00	0.00	0.94	0.94	0.00	0.00	0.00	0.11	0.11
Generator	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Grader	4	0	0.00	0.00	0.00	0.85	0.85	0.00	0.00	0.00	0.08	0.08
Light Tower	2	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Loader	5	0	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01
Maxi Sneeker (Trencher)	5	0	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.00	0.07	0.07
Skid Steer (Bobcat)	4	0	0.00	0.00	0.00	3.94	3.94	0.00	0.00	0.00	0.35	0.35
Welding Machine	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Equipment fueled with Propane												
Aerial Lift	6	1	0.02	0.00	0.11		0.14	0.00	0.00	0.01		0.02
Fork Lift	8	1	0.02	0.00	0.13		0.15	0.00	0.00	0.02		0.02
Telehandler	6	1	0.02	0.00	0.10		0.11	0.00	0.00	0.01		0.01
Vehicles with Onroad Engines for Emissions Estimates												
Concrete Delivery Truck for general construction	0	7	0.00	0.00	0.00		0.00	0.09	0.00	0.01		0.10
Concrete Delivery Truck for bridge	5	1.6	0.68	0.00	0.06		0.74	0.02	0.00	0.00		0.02
Concrete Pump Truck for bridge	1	0.1	0.01	0.00	0.00		0.01	0.00	0.00	0.00		0.00
Dump Truck	5	6.8	1.61	0.00	1.32	0.07	3.00	0.19	0.00	0.16	0.01	0.36
Flatbed Truck	10	27.2	9.06	0.00	0.00		9.06	1.41	0.00	0.00		1.41
Staff & Security Truck	6	48	0.93	0.00	0.00		0.93	0.15	0.00	0.00		0.15
Pickup Truck	11	6.8	0.58	0.00	0.14		0.72	0.09	0.00	0.02		0.11
Water/Soiltac Truck	7	13.6	2.26	0.00	5.53		7.79	0.33	0.00	0.81		1.14
General Materials Delivery Truck for general cor	3	7	1.99	0.00	0.00		1.99	0.21	0.00	0.00		0.21
General Materials Delivery Truck for bridge	12	1.6	1.82	0.00	0.00		1.82	0.04	0.00	0.00		0.04
Suncatcher Pedestals Delivery Truck	3	7	1.00	0.00	0.81		1.81	0.06	0.00	0.05		0.10
Stirling Engines Delivery Truck	6	7	3.98	0.00	0.00		3.98	0.62	0.00	0.00		0.62
Suncatcher Metal Supports Delivery Truck	11	7	7.30	0.00	0.00		7.30	1.14	0.00	0.00		1.14
Suncatcher Mirrors Delivery Truck	7	7	4.65	0.00	0.00		4.65	0.72	0.00	0.00		0.72
Electrical and Control Systems Delivery Truck	2	7	1.33	0.00	0.00		1.33	0.21	0.00	0.00		0.21
Azimuth and Elevation Drive Delivery Truck	2	7	1.33	0.00	0.00		1.33	0.21	0.00	0.00		0.21
Water Delivery Trucks	39	7	11.53	0.00	0.00		11.53	1.80	0.00	0.00		1.80
Worker Passenger Vehicles	479	9	11.45	0.00	0.00		11.45	1.19	0.00	0.00		1.19
Storage piles						3.98	3.98				0.36	0.36
			61.62	**0.00**	**8.52**	**10.81**	**80.95**	**8.49**	**0.00**	**1.11**	**1.04**	**10.65**

Calico Solar

Combustion Exhaust Emissions Off-site (short-term)

To be consistent with on-site emissions, months 6 was used to represent the daily/monthly construction off-site (on-road) emissions.
construction schedule = 12 hours per day 7 am to 7 pm pedestal installation = 16 hours per day
delivery trucks can arrive at the site anytime during the day or night

EMISSION FACTORS

				Emission factors (g/mile)										Emission rate per piece of equipment (lb/hr)									
Vehicles with Onroad Engines for Emissions Estimates	Off-site Miles per Day Travelled within MDAQMD jurisdictional area per Vehicle	Hours/Day	Vehicle Weight (lbs)	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Concrete Delivery Truck for general construction	74	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.30E-02	2.07E-02	1.70E-01	8.02E-02	3.79E-01	4.07E-04	4.30E+01	6.93E-05	6.52E-05	4.30E+01
Concrete Delivery Truck for bridge	74	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.30E-02	2.07E-02	1.70E-01	8.02E-02	3.79E-01	4.07E-04	4.30E+01	6.93E-05	6.52E-05	4.30E+01
Concrete Pump Truck for bridge	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dump Truck	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flatbed Truck	0	12	20,000	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Staff & Security Truck	0	24	4,500	1.00E-02	1.00E-02	2.10E+00	5.50E-02	3.00E-02	9.00E-03	3.26E+02	1.04E-01	8.13E-02	3.54E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pickup Truck	0	12	8,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	7.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water/Soiltac Truck	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
General Materials Delivery Truck for general cons	74	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.15E-02	1.03E-02	8.49E-02	4.01E-02	1.89E-01	2.04E-04	2.15E+01	3.46E-05	3.26E-05	2.15E+01
General Materials Delivery Truck for bridge	74	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.15E-02	1.03E-02	8.49E-02	4.01E-02	1.89E-01	2.04E-04	2.15E+01	3.46E-05	3.26E-05	2.15E+01
Suncatcher Pedestals Delivery Truck	200	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-02	2.79E-02	2.29E-01	1.08E-01	5.11E-01	5.51E-04	5.81E+01	9.36E-05	8.81E-05	5.81E+01
Stirling Engines Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Suncatcher Metal Supports Delivery Truck	180	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.80E-02	2.51E-02	2.06E-01	9.75E-02	4.60E-01	4.96E-04	5.23E+01	8.43E-05	7.93E-05	5.23E+01
Suncatcher Mirrors Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Electrical and Control Systems Delivery Truck	200	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-02	2.79E-02	2.29E-01	1.08E-01	5.11E-01	5.51E-04	5.81E+01	9.36E-05	8.81E-05	5.81E+01
Azimuth and Elevation Drive Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Water Delivery Trucks	128	24	23,400	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	6.81E-03	6.10E-03	6.13E-02	5.32E-03	1.09E-01	1.64E-04	1.77E+01	1.29E-05	2.00E-05	1.77E+01
Worker Passenger Vehicles	74	24	4,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	3.54E+02	4.89E-04	3.72E-04	3.42E-02	2.36E-03	3.19E-03	4.75E-05	4.90E+00	4.78E-04	4.39E-04	5.05E+00

Notes:

1. Onroad vehicle emissions from EMFAC2007 model. The vehicle description in EMFAC2007 model are as follows:
   - Flatbed Truck and Water Delivery Truck are Medium-Heavy-Duty (MHD-DSL).
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Worker Passenger Vehicle and Pickup Truck are Passenger Car (LDA-ALL)
   - Concrete Delivery Truck, Concrete Pump Truck, Dump Truck, Water/Soiltac Truck, General Materials Delivery Trucks, Suncatcher Pedestals Delivery Truck, Stirling Engines Delivery Truck, Suncatcher Metal Supports Delivery Truck, Suncatcher Mirrors Delivery Truck, Electrical and Control Systems Delivery Truck, and Azimuth & Elevation Drive Delivery Truck are all Heavy-Heavy-Duty (HHD-DSL)
2. The emissions of "Toyota Highlander Hybrid" (Staff & Security Truck) meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
3. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
4. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009. Hybrid Truck is assumed to be gasoline light truck here.
5. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)
   CO_2 GWP (SAR, 1996) = 1
   CH_4 GWP (SAR, 1996) = 21
   N_2O GWP (SAR, 1996) = 310

MONTHLY EMISSIONS (month 1-20)

	Month 1 Daily Emissions (lb/day)											Month 2 Daily Emissions (lb/day)											Month 3 Daily Emissions (lb/day)											Month 4 Daily Emissions (lb/day)										
	Quantity Mo 1	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 2	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 3	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 4	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	6.00	1.66	1.49	12.22	5.77	27.25	0.03	3,095.72	0.00	0.00	3,097.28	6.00	1.66	1.49	12.22	5.77	27.25	0.03	3,095.72	0.00	0.00	3,097.28	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Truck for bridge	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21
Concrete Pump Truck for bridge	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-
Dump Truck	3.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	7.00	-	-	-	-	-	-	-	-	-	-
Flatbed Truck	2.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-
Staff & Security Truck	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-
Pickup Truck	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-
Water/Soiltac Truck	5.00	-	-	-	-	-	-	-	-	-	-	14.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-
General Materials Delivery Truck for general cons	-	-	-	-	-	-	-	-	-	-	-	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
General Materials Delivery Truck for bridge	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43
Suncatcher Pedestals Delivery Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52
Stirling Engines Delivery Truck	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
Suncatcher Metal Supports Delivery Truck	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
Suncatcher Mirrors Delivery Truck	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
Electrical and Control Systems Delivery Truck	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
Azimuth and Elevation Drive Delivery Truck	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
Water Delivery Trucks	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
Worker Passenger Vehicles	67.00	0.79	0.60	55.03	3.79	5.13	0.08	7,886.04	0.77	0.71	8,121.22	180.00	2.11	1.60	147.84	10.18	13.79	0.21	21,186.37	2.07	1.90	21,818.20	249.00	2.92	2.22	204.51	14.08	19.08	0.28	29,307.81	2.86	2.63	30,181.84	219.00	2.57	1.95	179.87	12.39	16.78	0.25	25,776.75	2.51	2.31	26,545.48
Total	**167.00**	**26.38**	**23.56**	**254.18**	**75.75**	**423.57**	**0.57**	**60,342.01**	**0.84**	**0.78**	**60,601.34**	**309.00**	**29.64**	**26.30**	**361.24**	**88.88**	**464.02**	**0.73**	**77,254.02**	**2.14**	**1.98**	**77,911.82**	**372.00**	**30.45**	**26.91**	**417.92**	**92.79**	**469.31**	**0.81**	**85,375.46**	**2.93**	**2.70**	**86,275.46**	**338.00**	**30.68**	**27.17**	**397.57**	**93.12**	**476.58**	**0.79**	**82,932.09**	**2.59**	**2.39**	**83,727.33**

MONTHLY EMISSIONS (month 21-41)

	Month 21 Daily Emissions (lb/day)											Month 22 Daily Emissions (lb/day)											Month 23 Daily Emissions (lb/day)											Month 24 Daily Emissions (lb/day)										
	Quantity Mo 21	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 22	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 23	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 24	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Pump Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general cons	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Pedestals Delivery Truck	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52
Stirling Engines Delivery Truck	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
Suncatcher Metal Supports Delivery Truck	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
Suncatcher Mirrors Delivery Truck	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
Electrical and Control Systems Delivery Truck	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
Azimuth and Elevation Drive Delivery Truck	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
Water Delivery Trucks	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
Worker Passenger Vehicles	209	2.45	1.86	171.66	11.82	16.01	0.24	24599.73	2.40	2.20	25333.36	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14
Total	**308**	**28.90**	**25.59**	**377.14**	**86.78**	**448.57**	**0.75**	**78659.34**	**2.47**	**2.28**	**79417.92**	**307**	**28.89**	**25.58**	**376.31**	**86.72**	**448.49**	**0.75**	**78541.64**	**2.46**	**2.27**	**79296.71**	**305**	**28.89**	**25.58**	**376.31**	**86.72**	**448.49**	**0.75**	**78541.64**	**2.46**	**2.27**	**79296.71**	**305**	**28.89**	**25.58**	**376.31**	**86.72**	**448.49**	**0.75**	**78541.64**	**2.46**	**2.27**	**79296.71**

Month 5 Daily Emissions (lb/day)											Month 6 Daily Emissions (lb/day)											Month 7 Daily Emissions (lb/day)											Month 8 Daily Emissions (lb/day)										
Quantity Mo 5	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 6	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 7	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 8	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	5.00	1.38	1.24	10.18	4.81	22.71	0.02	2,579.77	0.00	0.00	2,581.07	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	-	-	-	-	-	-	-	-	-	-	-
1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	-
7.00	-	-	-	-	-	-	-	-	-	-	7.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	-
3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	12.00	3.31	2.97	24.44	11.55	54.50	0.06	6,191.45	0.01	0.01	6,194.57	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	-	-	-	-	-	-	-	-	-	-	-
3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	1.00	0.75	0.67	5.50	2.60	12.28	0.01	1,394.47	0.00	0.00	1,395.17
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
219.00	2.57	1.95	179.87	12.39	16.78	0.25	25,776.75	2.51	2.31	26,545.48	479.00	5.62	4.27	393.42	27.09	36.70	0.55	56,379.28	5.50	5.05	58,060.66	487.00	5.72	4.34	399.99	27.54	37.31	0.56	57,320.90	5.59	5.14	59,030.36	385.00	4.52	3.43	316.21	21.78	29.49	0.44	45,315.29	4.42	4.06	46,666.71
335.00	**30.68**	**27.17**	**397.57**	**93.12**	**476.58**	**0.79**	**82,932.09**	**2.59**	**2.39**	**83,727.33**	**609.00**	**37.60**	**32.96**	**639.63**	**121.30**	**560.09**	**1.15**	########	**5.59**	**5.14**	########	**601.00**	**33.82**	**29.56**	**617.69**	**108.28**	**497.11**	**1.09**	########	**5.67**	**5.22**	########	**493.00**	**30.31**	**26.56**	**516.79**	**94.42**	**451.12**	**0.94**	**98,133.83**	**4.49**	**4.13**	**99,509.57**

Month 25 Daily Emissions (lb/day)											Month 26 Daily Emissions (lb/day)											Month 27 Daily Emissions (lb/day)											Month 28 Daily Emissions (lb/day)										
Quantity Mo 25	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 26	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 27	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 28	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
305	**28.89**	**25.58**	**376.31**	**86.72**	**448.49**	**0.75**	**78541.64**	**2.46**	**2.27**	**79296.71**	**302**	**26.65**	**23.57**	**359.80**	**78.92**	**411.66**	**0.71**	**74358.23**	**2.45**	**2.26**	**75111.19**	**302**	**26.65**	**23.57**	**359.80**	**78.92**	**411.66**	**0.71**	**74358.23**	**2.45**	**2.26**	**75111.19**	**260**	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**

Month 9 Daily Emissions (lb/day)												Month 10 Daily Emissions (lb/day)												Month 11 Daily Emissions (lb/day)												Month 12 Daily Emissions (lb/day)											
Quantity Mo 9	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 10	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 11	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 12	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
3.00	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
10.00	-	-	-	-	-	-	-	-	-	-		10.00	-	-	-	-	-	-	-	-	-	-		10.00	-	-	-	-	-	-	-	-	-	-		10.00	-	-	-	-	-	-	-	-	-	-	
6.00	-	-	-	-	-	-	-	-	-	-		6.00	-	-	-	-	-	-	-	-	-	-		6.00	-	-	-	-	-	-	-	-	-	-		6.00	-	-	-	-	-	-	-	-	-	-	
11.00	-	-	-	-	-	-	-	-	-	-		11.00	-	-	-	-	-	-	-	-	-	-		11.00	-	-	-	-	-	-	-	-	-	-		11.00	-	-	-	-	-	-	-	-	-	-	
5.00	-	-	-	-	-	-	-	-	-	-		5.00	-	-	-	-	-	-	-	-	-	-		5.00	-	-	-	-	-	-	-	-	-	-		5.00	-	-	-	-	-	-	-	-	-	-	
3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
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6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83		6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83		6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83		6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21		11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21		11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21		11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97		7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97		7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97		7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35		2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35		2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35		2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28		2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28		2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28		2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42		39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42		39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42		39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	
334.00	3.92	2.98	274.33	18.89	25.59	0.38	39,312.49	3.83	3.52	40,484.88		305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73		305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73		305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73	
439.00	**28.96**	**25.44**	**469.40**	**88.93**	**434.94**	**0.87**	**90,736.55**	**3.90**	**3.59**	**91,932.57**		**404.00**	**27.79**	**24.44**	**439.47**	**84.40**	**419.09**	**0.82**	**85,775.33**	**3.57**	**3.29**	**86,868.78**		**404.00**	**27.79**	**24.44**	**439.47**	**84.40**	**419.09**	**0.82**	**85,775.33**	**3.57**	**3.29**	**86,868.78**		**404.00**	**27.79**	**24.44**	**439.47**	**84.40**	**419.09**	**0.82**	**85,775.33**	**3.57**	**3.29**	**86,868.78**	

Month 29 Daily Emissions (lb/day)												Month 30 Daily Emissions (lb/day)												Month 31 Daily Emissions (lb/day)												Month 32 Daily Emissions (lb/day)											
Quantity Mo 29	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 30	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 31	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 32	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83		6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83		6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83		6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21		11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21		11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21		11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97		7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97		7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97		7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35		2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35		2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35		2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28		2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28		2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28		2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42		39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42		39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42		39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	
166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23		166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23		166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23		166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23	
258	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**		**258**	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**		**258**	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**		**258**	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**	

Month 13 Daily Emissions (lb/day)										
Quantity Mo 13	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
357.00	4.19	3.18	293.22	20.19	27.35	0.41	42,019.63	4.10	3.76	43,272.77
456.00	**28.40**	**24.90**	**482.18**	**87.34**	**423.08**	**0.88**	**91,895.84**	**4.16**	**3.83**	**93,171.81**

Month 14 Daily Emissions (lb/day)										
Quantity Mo 14	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
341.00	4.00	3.04	280.08	19.29	26.12	0.39	40,136.40	3.91	3.60	41,333.37
443.00	**28.21**	**24.76**	**469.04**	**86.44**	**421.85**	**0.86**	**90,012.60**	**3.98**	**3.67**	**91,232.42**

Month 15 Daily Emissions (lb/day)										
Quantity Mo 15	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
347.00	4.07	3.09	285.00	19.63	26.58	0.40	40,842.61	3.98	3.66	42,060.64
448.00	**28.29**	**24.81**	**473.97**	**86.78**	**422.31**	**0.87**	**90,718.82**	**4.05**	**3.73**	**91,959.69**

Month 16 Daily Emissions (lb/day)										
Quantity Mo 16	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
332.00	3.90	2.96	272.68	18.78	25.43	0.38	39,077.08	3.81	3.50	40,242.46
433.00	**28.11**	**24.68**	**461.65**	**85.93**	**421.16**	**0.85**	**88,953.29**	**3.88**	**3.57**	**90,141.51**

Month 17 Daily Emissions (lb/day)										
Quantity Mo 17	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
325.00	3.81	2.90	266.93	18.38	24.90	0.37	38,253.17	3.73	3.43	39,393.97
424.00	**28.03**	**24.62**	**455.90**	**85.53**	**420.62**	**0.84**	**88,129.37**	**3.80**	**3.50**	**89,293.02**

Month 33 Daily Emissions (lb/day)										
Quantity Mo 33	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
282	**26.44**	**23.41**	**345.02**	**77.90**	**410.28**	**0.69**	**72239.59**	**2.25**	**2.07**	**72929.37**

Month 34 Daily Emissions (lb/day)										
Quantity Mo 34	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
282	**26.44**	**23.41**	**345.02**	**77.90**	**410.28**	**0.69**	**72239.59**	**2.25**	**2.07**	**72929.37**

Month 35 Daily Emissions (lb/day)										
Quantity Mo 35	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
282	**26.44**	**23.41**	**345.02**	**77.90**	**410.28**	**0.69**	**72239.59**	**2.25**	**2.07**	**72929.37**

Month 36 Daily Emissions (lb/day)										
Quantity Mo 36	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
245	**26.01**	**23.08**	**314.63**	**75.81**	**407.45**	**0.64**	**67884.62**	**1.82**	**1.68**	**68444.52**

Month 37 Daily Emissions (lb/day)										
Quantity Mo 37	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
240	**26.01**	**23.08**	**314.63**	**75.81**	**407.45**	**0.64**	**67884.62**	**1.82**	**1.68**	**68444.52**

Month 18 Daily Emissions (lb/day)												Month 19 Daily Emissions (lb/day)												Month 20 Daily Emissions (lb/day)											
Quantity Mo 18	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 19	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 20	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
10.00	-	-	-	-	-	-	-	-	-	-		8.00	-	-	-	-	-	-	-	-	-	-		8.00	-	-	-	-	-	-	-	-	-	-	
6.00	-	-	-	-	-	-	-	-	-	-		6.00	-	-	-	-	-	-	-	-	-	-		6.00	-	-	-	-	-	-	-	-	-	-	
11.00	-	-	-	-	-	-	-	-	-	-		11.00	-	-	-	-	-	-	-	-	-	-		11.00	-	-	-	-	-	-	-	-	-	-	
5.00	-	-	-	-	-	-	-	-	-	-		5.00	-	-	-	-	-	-	-	-	-	-		5.00	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83		6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83		6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21		11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21		11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97		7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97		7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35		2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35		2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28		2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28		2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42		39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42		39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	
280.00	3.29	2.50	229.97	15.84	21.45	0.32	32,956.57	3.21	2.95	33,939.42		247.00	2.90	2.20	202.87	13.97	18.92	0.28	29,072.41	2.83	2.60	29,939.42		226.00	2.65	2.02	185.62	12.78	17.31	0.26	26,600.66	2.59	2.38	27,393.96	
379.00	**27.50**	**24.22**	**418.94**	**82.99**	**417.18**	**0.79**	**82,832.78**	**3.28**	**3.02**	**83,838.47**		**344.00**	**27.11**	**23.92**	**391.83**	**81.12**	**414.65**	**0.75**	**78,948.61**	**2.90**	**2.67**	**79,838.47**		**323.00**	**26.87**	**23.73**	**374.58**	**79.94**	**413.04**	**0.73**	**76,476.87**	**2.66**	**2.45**	**77,293.01**	

Month 38 Daily Emissions (lb/day)												Month 39 Daily Emissions (lb/day)												Month 40 Daily Emissions (lb/day)											
Quantity Mo 38	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 39	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 40	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83		6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83		6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21		11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21		11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97		7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97		7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35		2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35		2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28		2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28		2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42		39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42		39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47		153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47		152	1.78	1.36	124.84	8.60	11.64	0.17	17890.71	1.74	1.60	18424.26	
240	**26.01**	**23.08**	**314.63**	**75.81**	**407.45**	**0.64**	**67884.62**	**1.82**	**1.68**	**68444.52**		**240**	**26.01**	**23.08**	**314.63**	**75.81**	**407.45**	**0.64**	**67884.62**	**1.82**	**1.68**	**68444.52**		**239**	**26.00**	**23.07**	**313.81**	**75.75**	**407.37**	**0.64**	**67766.92**	**1.81**	**1.67**	**68323.31**	

Month 41 Daily Emissions (lb/day)											
Quantity Mo 41	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	
152	1.78	1.36	124.84	8.60	11.64	0.17	17890.71	1.74	1.60	18424.26	
239	**26.00**	**23.07**	**313.81**	**75.75**	**407.37**	**0.64**	**67766.92**	**1.81**	**1.67**	**68323.31**	

Monthly Comparison of Construction Equipment Emissions:

Month of Contruction	Total Equipment Quantity	Daily Emissions (lb/day)										
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	167	26.38	23.56	254.18	75.75	423.57	0.57	60342.01	0.84	0.780	60601.34
2	309	29.64	26.30	361.24	88.88	464.02	0.73	77254.02	2.14	1.977	77911.82
3	372	30.45	26.91	417.92	92.79	469.31	0.81	85375.46	2.93	2.705	86275.46
4	338	30.68	27.17	397.57	93.12	476.58	0.79	82932.09	2.59	2.390	83727.33
5	335	30.68	27.17	397.57	93.12	476.58	0.79	82932.09	2.59	2.390	83727.33
6	609	37.60	32.96	639.63	121.30	560.09	1.15	120757.98	5.59	5.143	122469.50
7	601	33.82	29.56	617.69	108.28	497.11	1.09	114476.24	5.67	5.216	116212.20
8	493	30.31	26.56	516.79	94.42	451.12	0.94	98133.83	4.49	4.134	99509.57
9	439	28.96	25.44	469.40	88.93	434.94	0.87	90736.55	3.90	3.594	91932.57
10	404	27.79	24.44	439.47	84.40	419.09	0.82	85775.33	3.57	3.286	86868.78
11	404	27.79	24.44	439.47	84.40	419.09	0.82	85775.33	3.57	3.286	86868.78
12	404	27.79	24.44	439.47	84.40	419.09	0.82	85775.33	3.57	3.286	86868.78
13	456	28.40	24.90	482.18	87.34	423.08	0.88	91895.84	4.16	3.834	93171.81
14	443	28.21	24.76	469.04	86.44	421.85	0.86	90012.60	3.98	3.665	91232.42
15	448	28.29	24.81	473.97	86.78	422.31	0.87	90718.82	4.05	3.729	91959.69
16	433	28.11	24.68	461.65	85.93	421.16	0.85	88953.29	3.88	3.570	90141.51
17	424	28.03	24.62	455.90	85.53	420.62	0.84	88129.37	3.80	3.497	89293.02
18	379	27.50	24.22	418.94	82.99	417.18	0.79	82832.78	3.28	3.022	83838.47
19	344	27.11	23.92	391.83	81.12	414.65	0.75	78948.61	2.90	2.674	79838.47
20	323	26.87	23.73	374.58	79.94	413.04	0.73	76476.87	2.66	2.453	77293.01
21	308	28.90	25.59	377.14	86.78	448.57	0.75	78659.34	2.47	2.280	79417.92
22	307	28.89	25.58	376.31	86.72	448.49	0.75	78541.64	2.46	2.269	79296.71
23	305	28.89	25.58	376.31	86.72	448.49	0.75	78541.64	2.46	2.269	79296.71
24	305	28.89	25.58	376.31	86.72	448.49	0.75	78541.64	2.46	2.269	79296.71
25	305	28.89	25.58	376.31	86.72	448.49	0.75	78541.64	2.46	2.269	79296.71
26	302	26.65	23.57	359.80	78.92	411.66	0.71	74358.23	2.45	2.263	75111.19
27	302	26.65	23.57	359.80	78.92	411.66	0.71	74358.23	2.45	2.263	75111.19
28	260	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
29	258	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
30	258	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
31	258	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
32	258	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
33	282	26.44	23.41	345.02	77.90	410.28	0.69	72239.59	2.25	2.073	72929.37
34	282	26.44	23.41	345.02	77.90	410.28	0.69	72239.59	2.25	2.073	72929.37
35	282	26.44	23.41	345.02	77.90	410.28	0.69	72239.59	2.25	2.073	72929.37
36	245	26.01	23.08	314.63	75.81	407.45	0.64	67884.62	1.82	1.683	68444.52
37	240	26.01	23.08	314.63	75.81	407.45	0.64	67884.62	1.82	1.683	68444.52
38	240	26.01	23.08	314.63	75.81	407.45	0.64	67884.62	1.82	1.683	68444.52
39	240	26.01	23.08	314.63	75.81	407.45	0.64	67884.62	1.82	1.683	68444.52
40	239	26.00	23.07	313.81	75.75	407.37	0.64	67766.92	1.81	1.672	68323.31
41	239	26.00	23.07	313.81	75.75	407.37	0.64	67766.92	1.81	1.672	68323.31
MAX VALUE (lb/day)	**609**	**37.60**	**32.96**	**639.63**	**121.30**	**560.09**	**1.15**	**120758.0**	**5.67**	**5.216**	**122469.5**

Months for Annual Contruction		Annual Emissions (ton/year)									
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	12	4.70	4.15	70.08	14.43	71.64	0.133	13913.46	0.54	0.4964	14078.65
2	13	4.73	4.16	73.04	14.58	71.63	0.137	14323.66	0.58	0.5361	14502.07
3	14	4.71	4.14	74.44	14.55	71.08	0.138	14489.52	0.61	0.5581	14675.24
4	15	4.68	4.12	75.17	14.47	70.47	0.139	14558.99	0.62	0.5714	14749.13
5	16	4.65	4.08	76.00	14.37	69.75	0.140	14637.26	0.64	0.5867	14832.52
6	17	4.62	4.05	76.76	14.28	69.02	0.140	14704.83	0.65	0.6011	14904.87
7	18	4.49	3.94	73.89	13.78	67.17	0.136	14211.80	0.62	0.5735	14402.67
8	19	4.40	3.86	70.96	13.43	66.09	0.131	13749.94	0.59	0.5405	13929.81
9	20	4.35	3.83	69.11	13.24	65.60	0.128	13468.40	0.56	0.5186	13640.99
10	21	4.35	3.83	67.91	13.21	65.78	0.127	13311.40	0.54	0.5015	13478.30
11	22	4.37	3.84	67.09	13.24	66.16	0.126	13217.36	0.53	0.4883	13379.87
12	23	4.38	3.86	66.27	13.27	66.54	0.125	13123.32	0.52	0.4751	13281.43
13	24	4.40	3.87	65.44	13.30	66.92	0.124	13029.28	0.50	0.4619	13182.99
14	25	4.40	3.88	64.07	13.29	67.25	0.122	12855.68	0.48	0.4416	13002.62
15	26	4.38	3.87	62.65	13.19	67.12	0.120	12652.17	0.46	0.4233	12793.04
16	27	4.36	3.85	61.16	13.09	66.98	0.118	12439.48	0.44	0.4043	12574.01
17	28	4.33	3.83	59.39	12.97	66.82	0.116	12185.48	0.41	0.3815	12312.43
18	29	4.31	3.81	57.69	12.85	66.66	0.114	11942.19	0.39	0.3597	12061.89
19	30	4.29	3.80	56.48	12.77	66.55	0.112	11767.76	0.37	0.3441	11882.25
20	31	4.28	3.79	55.61	12.71	66.46	0.111	11643.82	0.36	0.3330	11754.62
21	32	4.27	3.78	54.97	12.66	66.40	0.110	11552.01	0.35	0.3247	11660.07
22	33	4.24	3.76	54.55	12.55	65.91	0.109	11468.55	0.35	0.3221	11575.72
23	34	4.21	3.73	54.15	12.43	65.41	0.108	11386.63	0.35	0.3195	11492.94
24	35	4.18	3.70	53.74	12.32	64.91	0.107	11304.70	0.34	0.3170	11410.17
25	36	4.14	3.67	52.94	12.18	64.38	0.106	11166.16	0.34	0.3093	11269.09
26	37	4.10	3.63	52.14	12.04	63.85	0.105	11027.62	0.33	0.3017	11128.01
27	38	4.09	3.63	51.55	12.00	63.79	0.104	10943.46	0.32	0.2942	11041.35
28	39	4.08	3.62	50.96	11.96	63.74	0.103	10859.30	0.31	0.2866	10954.68
29	40	4.08	3.62	50.81	11.94	63.72	0.103	10837.88	0.31	0.2847	10932.62
30	41	4.08	3.62	50.66	11.93	63.71	0.103	10816.46	0.31	0.2828	10910.56
MAX VALUE (ton/year)		**4.73**	**4.16**	**76.76**	**14.58**	**71.64**	**0.14**	**14704.83**	**0.65**	**0.6011**	**14904.87**

Combustion Exhaust Emissions Off-site (annual)

To be consistency to on-site emissions, months 2-13 was used to represent the annual construction off-site (on-road) emissions.
Construction Assumptions - 26 days per month

Equipment	Number of Vehicles per year	Hours/Day	Emission rate per piece of equipment (lb/hr)										Annual Emissions (ton/year)										Number of Vehicles (entire construction period)	entire construction period emissions (ton)									
			PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																	
Concrete Delivery Truck for general construction	12	12	0.023	0.021	0.170	0.080	0.379	0.000	42.996	0.000	0.000	43.018	0.04	0.04	0.32	0.15	0.71	0.00	80.49	0.00	0.00	80.53	14	0.05	0.05	0.37	0.18	0.83	0.00	93.90	0.00	0.00	93.95
Concrete Delivery Truck for bridge	10	12	0.023	0.021	0.170	0.080	0.379	0.000	42.996	0.000	0.000	43.018	0.04	0.03	0.26	0.13	0.59	0.00	67.07	0.00	0.00	67.11	11	0.04	0.04	0.29	0.14	0.65	0.00	73.78	0.00	0.00	73.82
Concrete Pump Truck for bridge	6	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	46	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	120	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	310	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	72	24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	246	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	132	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	451	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	79	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general cons	24	24	0.012	0.010	0.085	0.040	0.189	0.000	21.498	0.000	0.000	21.509	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06	24	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06
General Materials Delivery Truck for bridge	22	24	0.012	0.010	0.085	0.040	0.189	0.000	21.498	0.000	0.000	21.509	0.08	0.07	0.58	0.28	1.30	0.00	147.56	0.00	0.00	147.64	24	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06
Suncatcher Pedestals Delivery Truck	13	24	0.031	0.028	0.229	0.108	0.511	0.001	58.103	0.000	0.000	58.132	0.13	0.11	0.93	0.44	2.07	0.00	235.67	0.00	0.00	235.78	28	0.27	0.24	2.00	0.95	4.47	0.00	507.59	0.00	0.00	507.84
Stirling Engines Delivery Truck	72	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.56	0.50	4.12	1.95	9.19	0.01	1044.18	0.00	0.00	1044.71	246	1.91	1.71	14.08	6.66	31.41	0.03	3567.61	0.01	0.01	3569.41
Suncatcher Metal Supports Delivery Truck	132	24	0.028	0.025	0.206	0.098	0.460	0.000	52.293	0.000	0.000	52.319	1.15	1.03	8.50	4.02	18.96	0.02	2153.62	0.00	0.00	2154.70	451	3.94	3.53	29.05	13.73	64.78	0.07	7358.20	0.01	0.01	7361.91
Suncatcher Mirrors Delivery Truck	84	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.65	0.59	4.81	2.27	10.72	0.01	1218.21	0.00	0.00	1218.82	287	2.23	2.00	16.43	7.76	36.64	0.04	4162.21	0.01	0.01	4164.31
Electrical and Control Systems Delivery Truck	24	24	0.031	0.028	0.229	0.108	0.511	0.001	58.103	0.000	0.000	58.132	0.23	0.21	1.72	0.81	3.83	0.00	435.07	0.00	0.00	435.29	82	0.80	0.71	5.87	2.77	13.09	0.01	1486.51	0.00	0.00	1487.25
Azimuth and Elevation Drive Delivery Truck	24	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.19	0.17	1.37	0.65	3.06	0.00	348.06	0.00	0.00	348.24	82	0.64	0.57	4.69	2.22	10.47	0.01	1189.20	0.00	0.00	1189.80
Water Delivery Trucks	468	24	0.007	0.006	0.061	0.005	0.109	0.000	17.680	0.000	0.000	17.686	0.99	0.89	8.96	0.78	15.96	0.02	2581.55	0.00	0.00	2582.49	1599	3.40	3.04	30.60	2.65	54.55	0.08	8820.28	0.01	0.01	8823.51
Worker Passenger Vehicles	3824	24	0.000	0.000	0.034	0.002	0.003	0.000	4.904	0.000	0.000	5.051	0.58	0.44	40.83	2.81	3.81	0.06	5851.20	0.57	0.52	6025.70	9762	1.49	1.13	104.23	7.18	9.72	0.14	14937.10	1.46	1.34	15382.56
											Total		**4.73**	**4.16**	**73.04**	**14.58**	**71.63**	**0.14**	**14323.66**	**0.58**	**0.54**	**14502.07**		**14.93**	**13.19**	**208.89**	**44.83**	**229.42**	**0.40**	**42518.34**	**1.49**	**1.38**	**42976.48**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Calico Solar

Fugitive Dust Emissions (offsite)

To be consistent to on-site emissions, months 6 was used to represent the daily/month construction off-site (on-road) emissions.
To be consistent to on-site emissions, months 2-13 was used to represent the annual construction off-site (on-road) emissions.

Travel on paved road

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
0.02 sL = road surface silt loading (grams per square meter) (g/m^2), Freeway Local Streets & Freeways (emission inventory code: 640-641-5400-0000), July 1997
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	Number of Vehicles (month 6)	Number of Vehicles per year (months 2 13)	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD Jurisdictional Area (mile/day)	Max Daily VMT (all vehicles)	Max Annual VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Vehicles with Onroad Engines for Emissions Estimates										
Concrete Delivery Truck for general construction	0	12	74	0	23088	20	12	26	0.002	0.013
Concrete Delivery Truck for bridge	5	10	74	370	19240	20	12	26	0.002	0.013
Concrete Pump Truck for bridge	1	6	0	0	0	20	12	26	0.002	0.013
Dump Truck	5	46	0	0	0	20	12	26	0.002	0.013
Flatbed Truck	10	120	0	0	0	10	12	26	0.000	0.004
Staff & Security Truck	6	72	0	0	0	2.25	24	26	0.000	0.000
Pickup Truck	11	132	0	0	0	4	12	26	0.000	0.001
Water/Soiltac Truck	7	79	0	0	0	20	12	26	0.002	0.013
General Materials Delivery Truck for general construc	3	24	74	222	46176	20	24	26	0.002	0.013
General Materials Delivery Truck for bridge	12	22	74	888	42328	20	24	26	0.002	0.013
Suncatcher Pedestals Delivery Truck	3	13	200	600	67600	20	24	26	0.002	0.013
Stirling Engines Delivery Truck	6	72	160	960	299520	20	24	26	0.002	0.013
Suncatcher Metal Supports Delivery Truck	11	132	180	1980	617760	20	24	26	0.002	0.013
Suncatcher Mirrors Delivery Truck	7	84	160	1120	349440	20	24	26	0.002	0.013
Electrical and Control Systems Delivery Truck	2	24	200	400	124800	20	24	26	0.002	0.013
Azimuth and Elevation Drive Delivery Truck	2	24	160	320	99840	20	24	26	0.002	0.013
Water Delivery Trucks	39	468	128	4992	1557504	11.7	24	26	0.001	0.006
Worker Passenger Vehicles	479	3824	74	35446	7357376	2	24	26	6.44E-05	4.30E-04

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.15	0.15	0.00	0.00	0.00	0.00	0.02	0.02
Concrete Delivery Truck for bridge	0%	0%	0.40	0.40	4.86	4.86	3.64%	0.13	0.13	0.05	0.05	0.62	0.62	0.02	0.02
Concrete Pump Truck for bridge	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general construc	0%	0%	0.12	0.12	2.91	2.91	2.19%	0.30	0.30	0.02	0.02	0.37	0.37	0.04	0.04
General Materials Delivery Truck for bridge	0%	0%	0.49	0.49	11.65	11.65	8.74%	0.28	0.28	0.06	0.06	1.49	1.49	0.04	0.04
Suncatcher Pedestals Delivery Truck	0%	0%	0.33	0.33	7.87	7.87	5.91%	0.44	0.44	0.04	0.04	1.01	1.01	0.06	0.06
Stirling Engines Delivery Truck	0%	0%	0.52	0.52	12.60	12.60	9.45%	1.97	1.97	0.07	0.07	1.62	1.62	0.25	0.25
Suncatcher Metal Supports Delivery Truck	0%	0%	1.08	1.08	25.98	25.98	19.49%	4.05	4.05	0.14	0.14	3.33	3.33	0.52	0.52
Suncatcher Mirrors Delivery Truck	0%	0%	0.61	0.61	14.70	14.70	11.03%	2.29	2.29	0.08	0.08	1.89	1.89	0.29	0.29
Electrical and Control Systems Delivery Truck	0%	0%	0.22	0.22	5.25	5.25	3.94%	0.82	0.82	0.03	0.03	0.67	0.67	0.11	0.11
Azimuth and Elevation Drive Delivery Truck	0%	0%	0.17	0.17	4.20	4.20	3.15%	0.66	0.66	0.02	0.02	0.54	0.54	0.08	0.08
Water Delivery Trucks	0%	0%	1.17	1.17	28.04	28.04	21.03%	4.37	4.37	0.12	0.12	2.78	2.78	0.43	0.43
Worker Passenger Vehicles	0%	0%	0.63	0.63	15.23	15.23	11.42%	1.58	1.58	0.10	0.10	2.28	2.28	0.24	0.24
TOTAL Fugitive emissions for vehicle travel offsite paved roads			**5.76**	**5.76**	**133.29**	**133.29**		**17.04**	**17.04**	**0.72**	**0.72**	**16.62**	**16.62**	**2.09**	**2.09**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Attachment AQ-2a
Operational Emissions for Rail Transport
(Jan. 26, 2010)

Calico Solar

Emissions from Emergency Diesel Generator

Rated Horsepower	**335**	**BHP**
Testing duration	**20**	**min/month**
Yearly testing	**12**	**month/year**
Expected non-emergency usage	**4**	**hr/yr**

Pollutant	Emision Factor	Emission Rate	Emission Rate per Testing	Yearly Emissions	Hourly Emission Rate	Annual Emission Rate
	g/HP/Hr	lb/hr	lb	lb/yr	g/s	g/s
NO_X	4.61	3.41	1.14	13.63	0.143	1.96E-04
CO	0.39	0.29	0.10	1.15	0.012	1.66E-05
VOC (Total Hydrocarbons)	0.15	0.11	0.04	0.44	0.005	6.38E-06
SO_X	0.12	0.09	0.03	0.35	0.004	5.10E-06
PM_{10}	0.06	0.04	0.01	0.18	0.002	2.55E-06
$PM_{2.5}$	0.06	0.04	0.01	0.18	0.002	2.55E-06
CO_2		447.54	149.18	1790.15	18.797	2.57E-02
CH_4		0.02	0.01	0.07	0.001	1.01E-06
N_2O		0.004	0.0015	0.02	0.0002	2.54E-07
CO_2e		449.28	149.76	1797.10	18.870	2.58E-02

Engine parameters

Flow Rate (acfm)	1218	17.726 m/s
Exhaust Temp (degrees C)	465	738.15 K
Stack Diameter (feet)	0.6667	0.2032 m
Stack height (feet) above ground	6.5	1.981 m
Fuel Use (gal/hr)[2]	20	20.000 gal/hr

Note:

1. The stack will be in outdoor enclosures, not in buildings.
2. Fuel use value is based on the engine parameter data in CARB Table 1 of "Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines", Oct 2000.
3. Emission rates for the criteria pollutant are based on vendor data (to meet Tier 3 requirements).
4. Greenhouse gas emission factors from CCAR General Reporting Protocol V3.1 January 2009 Tables C.7 and C.9
5. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)

   - CO_2 GWP (SAR, 1996) = 1
   - CH_4 GWP (SAR, 1996) = 21
   - N_2O GWP (SAR, 1996) = 310

6. PM2.5 emissions are assumed to be the same as the PM10 emissions

Calico Solar

Equipment = 5000-gal above ground storage tank
Fuel = Gasoline
Dimension= 88" W x 299" L x 67" H
Throughput (gal/year) = 120,000
Days of Operations (days/year) = 365

Description	TOG Emission Factor[2] (lbs/1000 gal)	TOG Emissions[1] (tons/Year)	TOG Emissions[1] (lbs/day)
Working Loss[3]		0.409	2.242
Breathing Loss[3]		0.536	2.935
Vehicle Refueling - Vapor Displacement	0.74	0.044	0.243
Vehicle Refueling - Spillage	0.42	0.025	0.138
Total Vehicle Refueling		0.070	0.381
Total TOG Emissions		**1.014**	**5.558**

Note:

1. Emission estimate based on 120,000 gallon per year tank throughput.
2. Emission factors from CARB Emission Inventory Estimation Guidelines Section 4.10 GASOLINE DISPENSING FACILITIES (Revised May 1999)
3. Emission estimates from EPA Tank4.0.9d model results

Calico Solar

Table 5.2-17 Revised

Estimated maximum potential sulfur hexafluoride (SF_6) emissions leakage emissions from proposed circuit breakers and other transmissions system equipment

Breaker	Qty	Typical Make	Typical Model	SF6 Lbs/Bkr	Leakage Rate	Leakage Lbs/Yr (per Bkr)	Leakage Lbs/Yr (All Bkrs)	CO_2e emissions (metric tons/Yr)
34.5kV Solar Group Breaker (3000A)	6	GE-Hitachi HVB	HS Series	31	1%	0.31	1.86	20.16
242kV Power Circuit Breaker (2000A)	8	GE-Hitachi HVB	HP Series	240	1%	2.4	19.2	208.14
242kV Coupling Capacitor Voltage Transformer (900A)	6	GE-Hitachi HVB	HP Series	240	1%	2.4	14.4	156.11
							CO_2e emissions (metric tons/Yr)	384.42

Note:

Greenhouse Gas Global Warming Potentials (GWPs) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)

Greenhouse Gas	GWP (SAR, 1996)
SF_6	23,900

OPERATIONS AND MAINTENANCE VEHICLES REQUIREMENTS

Description	Activity	Make / Model	Fuel	Quantity	Frequency	Horse-power	Vehicle Weight (tons)	Assumed idle time on site during washing & maintaining the sunchachers per vehicle (idle hr/day)	Max Daily Onsite Distance per Vehicle (mile/day)	Assumed distance percentage to drive on onsite sealed roads	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD jurisdictional area (mile/day)	Travel to and from	Max Daily Total Distance per Vehicle (mile/day)	Max. Operating Hours / Day	Max. Operating Days / Month
Washing Vehicle	Mirror Washing	12 ton Truck	Gasoline	50	Daily	225	12	4.0	6.8	100%	0	on-site only	6.8	8	30
LRU Maintenance Truck with Boom	Field Servicing & Maintenance	10 ton Truck	Gasoline	28	Daily	200	10	4.0	6.8	100%	0	on-site only	6.8	8	30
Staff & Security Truck	Site Inspections & Security	Toyota Highlander or similar	Gasoline - Hybrid	7	Daily	187	2.25		48	100%	0	on-site only	48	24	30
Rubber-wheeled forklift with telescoping boom	SunCatcher PCU & Mirror Maintenance	Telehandler	Propane	3	Daily	50	4		10	100%	0	on-site only	10	8	30
Forklift	Warehousing of supplies		Propane	3	Daily	50	3		10	50%	0	on-site only	10	8	30
Telescoping Man Lift	Facility Maintenance and SunCatcher PCU & Mirror Maintenance		Propane	10	Daily	50	3		10	100%	0	on-site only	10	8	30
Staff Cars	Community to Work	Passenger vehicles	Gasoline & diesel	120	Daily	100	2		7	94%	74	Barstow	81	2	30
Van Pooling		Passenger Truck/Van	Gasoline	5	Daily	150	4		7	94%	74	Barstow	81	2	30
Visitor Cars	Sales, Deliveries, Services	Passenger vehicles	Gasoline & diesel	10	Daily	100	2		7	94%	74	Barstow	81	8	22
Delivery Trucks	Operations and Maintenance Supplies	5 ton Cargo	Diesel	1	Weekly	200	5		7	94%	124	Barstow/ Detroit	131	2	5
	Waste Management	20 ton	Diesel	1	Weekly	250	20		7	94%	130	Class III sites	137	2	5
	Hazardous Waste	20 ton	Diesel	1	Weekly	250	20		7	94%	156	Class I sites	163	2	5
Transport Tractor Trailers	Spare Parts, Building Supplies, Temporary Rental Equipment	40-foot	Diesel	1	Weekly	250	20		7	94%	124	Barstow/ Detroit	131	2	5
Water Delivery Trucks	All onsite water will be delivered by train and truck	3700 gal truck	Diesel	20	Daily	300	11.7		6	94%	0	on-site only, delivers water from on-site train station to tanks in MSC	6	2	15
Hydrogen Delivery Trucks	delivery hydrogen to hydrogen tank in MSC	tanker truck	Diesel	1	Monthly	250	20		7	94%	160	Ontario	167	8	3
BNSF Locomotive Engine	All onsite water will be delivered by train and truck	GE Dash-9, GE ES44, or equivalent	Diesel	1	Daily	4400	220		8	0%	120	from Cadiz Well to on-site train station	128		15

Note:

1. **Bold** are offroad equipment
2. All other vehicles and equipment will use on-road engines
3. Average distance from main service complex to center of north and south portion of the site is 1.8 and 5 miles, respectively. Thus, the average round trip distance each maintenance and washing vehicle travels is 6.8 miles.
4. Average distance from the Project site entrance to the Main Service Complex is about 3.5 miles.
5. The fenceline perimeter is approximately 30 miles. Each security vehicle is assumed to travel from the MSC around the perimeter plus one trip to the center of north fenced property (1.8 miles) and the center of south fenced property (5 miles) and back (and plus additional 10% for misc trips) = approximately 48 miles.
6. 70% of the time the Project will get the supplies from Barstow, CA area and 30% of the time the Project will get the supplies from Detroit, MI.
7. The distance from the Project site to Barstow is approximately 37 miles.
8. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Detroit is about 120 miles.
9. Two CLASS I waste sites are: (1) Clean Harbors Buttonwillow Landfill (Solid Waste Facility) Lokern Road Kern County, CA - 214 miles to Solar One site; (2) Chemical Waste Management Kettleman Hills Landfill (Solids Waste Facility) 36251 Old Skyline Road Kettleman City, CA 93239 - 240 miles to Solar One site. Information is from the AFC Table 5.14-1.
10. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward the Class I waste sites is about 78 miles.
11. Average distance to the Class III waste site is about 65 miles (within the MDAQMD jurisdictional area). It is assumed half of the general solid waste will go to the disposal site in Barstow and the other half will go to the other Class III waste sites listed in the AFC Table 5.14-1.
12. Distance for hydrogen delivery trucks travels was provided by the applicant (80 miles one way trip from edge of southwest MDAQMD to Project site entrance).
13. The on-site water is assumed to be tranported from Cadiz Well to on-site train station via existing BNSF train (1 train per every other day, 15 days per month) and from on-site train station to MSC water tanks via trucks (same every other
14. One 4400 hp engine (GE Dash-9, GE ES44, or equivalent) is assumed to be added as an additional engine on the existing train to provide enough power hauling the required water rail cars.
15. The distance for water delivery train travels was provided by the applicant (about 64 miles one way trip from Cadiz well to on-site train station).
16. BNSF Train: from east of the site to the train station in the middle of the site (4 miles).
17. Water Truck: from the train station to water tanks at MSC (3 miles).

Calico Solar - Operation and Maintenance Equipment Emissions (on-site)

Emission Factors For Combustion Exhaust Emissions

				Emission Factors (unit: g/mile or g/idle-hr for on-road vehicle, lb/hr for off-road equipment, g/bhp-hr for locomotive)									
Equipment Description	**Horse-power**	**Vehicle Weight (lbs)**	**Fuel**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**ROG**	**NO_x**	**SO_x**	**CO_2**	**CH_4**	**N_2O**	**Total GHG - CO_2e**
On-road Vehicle				**Emission factors (g/mile or g/idle-hr)**									
Washing Vehicle (running)	225	24,000	Gasoline	0.032	0.015	0.497	0.041	0.117	0.016	1672.267	0.104	0.081	1699.64
Washing Vehicle (idling)	225	24,000	Gasoline	0.000	0.000	155.230	27.137	1.790	0.049	4776.900	0.296	0.232	4855.10
LRU Maintenance Truck with Boom (running)	200	20,000	Gasoline	0.032	0.015	0.497	0.041	0.117	0.016	1672.267	0.104	0.081	1699.64
LRU Maintenance Truck with Boom (idling)	200	20,000	Gasoline	0.000	0.000	155.230	27.137	1.790	0.049	4776.900	0.296	0.232	4855.10
Staff & Security Truck	187	4,500	Gasoline - Hybrid	0.010	0.010	2.100	0.055	0.030	0.009	326.296	0.104	0.081	353.67
Staff Cars	100	4,000	Gasoline & diesel	0.072	0.055	3.121	0.192	0.286	0.007	712.582	0.070	0.065	734.12
Van Pooling	150	8,000	Gasoline	0.039	0.024	0.933	0.030	0.065	0.012	1223.764	0.016	0.010	1227.22
Visitor Cars	100	4,000	Gasoline & diesel	0.072	0.055	3.121	0.192	0.286	0.007	712.582	0.070	0.065	734.12
Operations and Maintenance Supplies truck	200	10,000	Diesel	0.089	0.067	1.857	0.261	3.793	0.005	519.299	0.005	0.005	520.89
Waste Management truck	250	40,000	Diesel	0.923	0.811	8.172	3.888	17.517	0.030	3165.446	0.005	0.005	3167.04
Hazardous Waste truck	250	40,000	Diesel	0.923	0.811	8.172	3.888	17.517	0.030	3165.446	0.005	0.005	3167.04
Transport Tractor Trailers truck	250	40,000	Diesel	0.923	0.811	8.172	3.888	17.517	0.030	3165.446	0.005	0.005	3167.04
Water Delivery Trucks	300	23,400	Diesel	0.478	0.425	4.734	0.379	6.070	0.014	1505.000	0.005	0.005	3167.04
Hydrogen Delivery Trucks	250	40,000	Diesel	0.923	0.811	8.172	3.888	17.517	0.030	3165.446	0.005	0.005	3167.04
Off-road Equipment				**Emission factors (lb/hr)**									
Rubber-wheeled forklift with telescoping boom	50	8,000	Propane	0.002	0.002	0.295	0.002	0.086	0.000	18.295	0.017	0.001	19.07
Forklift	50	6,000	Propane	0.002	0.002	0.295	0.002	0.086	0.000	18.295	0.017	0.001	19.07
Telescoping Man Lift	50	6,000	Propane	0.002	0.002	0.295	0.002	0.086	0.000	18.295	0.017	0.001	19.07
Train		**Load Factor**		**Emission factors (g/bhp-hr)**									
BNSF Locomotive Engine (in motion)	4400	0.087	Diesel	0.236	0.217	1.280	0.418	7.933	0.005	487.981	0.038	0.013	492.66
BNSF Locomotive Engine (idling)	4400	0.087	Diesel	0.007	0.007	0.112	0.109	0.141	0.005	487.981	0.038	0.013	492.66

Note:

1. Vehicle description in EMFAC2007 model
   - Washing vehicle is Medium-Heavy-Duty (MHD-CAT)
   - LRU Maintenance Truck with Boom is Light-Heavy-Duty (LHD-CAT)
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Staff Car is Passenger Cars (LDA-ALL)
   - Van Pooling is Medium-Duty Trucks (MDV-CAT)
   - Visitor Cars is Passenger Cars (LDA-ALL)
   - Operations and Maintenance Supplies Delivery Truck is Light-Heavy-Duty (LHD1-DSL)
   - Waste Management Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
   - Hazardous Waste Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
   - Transport Tractor Trailer is Heavy-Heavy-Duty (HHD-DSL)
   - Water Delivery Truck is Medium-Heavy-Duty (MHD-DSL)
   - Hydrogen Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
2. Criteria pollutant emission factors for propane fuel off-road equipment obtained from CARB OFFROAD2007.
3. Rubber-wheeled forklift with telescoping boom and telescoping man lift are all forklifts
4. PM emission factors determined using guidance from SCAQMD Final - Methodology to Calculate PM_{10} and $PM_{2.5}$ Significance Thresholds 10/1/2006, Appendix A - Updated CEIDARS Table with $PM_{2.5}$ Fractions

   On-road vehicles
   - $PM_{2.5}$ Fraction of PM_{10}, Brake wear: 0.429
   - $PM_{2.5}$ Fraction of PM_{10}, Diesel: 0.920
   - $PM_{2.5}$ Fraction of PM_{10}, Gasoline-catalyst: 0.928
   - $PM_{2.5}$ Fraction of PM_{10}, Tire wear: 0.250
   - Assume $PM_{2.5}$ and PM_{10} Fraction of total PM for gasoline hybrid car is: 1.000

   Off-road equipment
   - Assume $PM_{2.5}$ and PM_{10} Fraction of total PM for propane fuel equipment is: 1.000
5. The emissions of "Toyota Highlander Hybrid" meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
6. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
7. N_2O emission factors for propane fuel off-road equipment are from Reference Source 2: Table C.6, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009
8. Emission factors for locomotives are from EPA Emission Factors for Locomotives (for year 2009 large line haul engines) April 2009, EPA420-F-09-025 (http://www.epa.gov/OMS/regs/nonroad/locomotv/420f09025.pdf).
9. The average speed for train is assumed to be 15 mph on-site; the idling time at the on-site train station is assumed to be up to 1 hour (conservative) of the additional locomotive engine plus 3 (assumed) existing locomotive engines.
10. Locomotive SO_2 emission factors (for both in motion and idling) are calculated as follows:

    Based on CARB Statewide Rail Yard Agreement to Reduce Diesel PM at California Rail Yards (2005), California state regulation requires intrastate diesel-electric locomotives that operate 90 percent of the time in the state to use only California ultra low sulfur diesel fuel.

California ultra low sulfur diesel fuel	=	15	ppm (as S) fuel sulfur content.
Diesel fuel fuel density	=	7.05	lb/gal (EPA-AP-42)
High Heating Value (HHV) of diesel fuel	=	137000	Btu/gal (EPA-AP-42)
Conversion Factors	=	20.80	bhp-hr/gal (large line-Haul and Passenger)
Fuel Consumption	=	211.54	gal/hr (calculated)
Brake Specific Fuel Consumption (BSFC)	=	0.34	lb/hp-hr (calculated)
	=	6586.54	Btu/hp-hr
SO_x EF (as SO_2, g/hp-hr)	= (ppm as S/1000000) x (Fuel Density [lb/gal]) x (1 gal/138000 Btu) x (1 lb-mol S/32 lb S) x (1 lb-mole SC_2/1 lb-mole S) x (64 lb SO_2/1 lb-mole SO_2) x (BSFC [Btu/hp-hr]) x (454 g/lb)		
	=	0.0046	g/hp-hr

11. NO_x and PM_{10} emission factors for locomotive idling are from EPA's Technical Highlights: Guidance for Quantifying and Using Long Duration Switch Yard Locomotive Idling Emission Reductions in State Yard Locomotive Idling Emission Reductions in State Implementation I
12. Percent of rated hp for GE D9 trains is 8.7% and CO and VOC emission factors for locomotive idling are from Southeastern States Air Resource Managers & Sierra Research Group: Development of Railroad Emissions Methodology, June 2004.
13. CH_4 and N_2O emission factors for locomotives (for both in motion and idling) are from Reference source 2: Table C.6, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009.
14. CO_2 emission factor for locomotives (for both in motion and idling) are from Reference source 4: Table C.3, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009.
15. CO_2 emission factors for gasoline and diesel fuel on-road vehicles are from EMFAC2007 model.
16. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009. Hybrid Truck is assumed to be gasoline light truck here.
17. CH_4 and N_2O emission factors for the idling vehicles are scaled from the same type of running vehicle emission factor.
18. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)

- CO_2 GWP (SAR, 1996)	=	1
- CH_4 GWP (SAR, 1996)	=	21
- N_2O GWP (SAR, 1996)	=	310

Daily Emissions For Combustion Exhaust Emissions

Equipment Description	No. Of Units	Max Daily Distance per Vehicle (mile/day)	Max Daily VMT (all units)	Max. Daily Emissions (lb/day) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle													
Washing Vehicle (running)	50	6.8	340	0.024	0.011	0.372	0.031	0.088	0.012	1,252.359	0.078	0.061	1,272.861
Washing Vehicle (idling)	50	-	-	-	-	68.383	11.955	0.789	0.022	2,104.361	0.130	0.102	2,138.812
LRU Maintenance Truck with Boom (running)	28	6.8	190	0.013	0.006	0.208	0.017	0.049	0.007	701.321	0.043	0.034	712.802
LRU Maintenance Truck with Boom (idling)	28	-	-	-	-	38.295	6.695	0.442	0.012	1,178.442	0.073	0.057	1,197.734
Staff & Security Truck	7	48.0	336	0.007	0.007	1.554	0.041	0.022	0.007	241.488	0.077	0.060	261.749
Staff Cars	120	7.0	840	0.133	0.101	5.775	0.355	0.529	0.013	1,318.434	0.130	0.120	1,358.279
Van Pooling	5	7.0	35	0.003	0.002	0.072	0.002	0.005	0.001	94.343	0.001	0.001	94.610
Visitor Cars	10	7.0	70	0.011	0.008	0.481	0.030	0.044	0.001	109.869	0.011	0.010	113.190
Operations and Maintenance Supplies truck	1	7.0	7	0.001	0.001	0.029	0.004	0.058	0.000	8.007	0.000	0.000	8.031
Waste Management truck	1	7.0	7	0.014	0.013	0.126	0.060	0.270	0.000	48.806	0.000	0.000	48.831
Hazardous Waste truck	1	7.0	7	0.014	0.013	0.126	0.060	0.270	0.000	48.806	0.000	0.000	48.831
Transport Tractor Trailers truck	1	7.0	7	0.014	0.013	0.126	0.060	0.270	0.000	48.806	0.000	0.000	48.831
Water Delivery Trucks	20	6.0	120	0.126	0.112	1.251	0.100	1.604	0.004	397.797	0.001	0.001	837.103
Hydrogen Delivery Trucks	1	7.0	7	0.014	0.013	0.126	0.060	0.270	0.000	48.806	0.000	0.000	48.831
Off-road Equipment													
Rubber-wheeled forklift with telescoping boom	3			0.039	0.039	7.073	0.048	2.071	-	439.072	0.403	0.033	457.612
Forklift	3			0.039	0.039	7.073	0.048	2.071	-	439.072	0.403	0.033	457.612
Telescoping Man Lift	10			0.130	0.130	23.577	0.160	6.903	-	1,463.572	1.342	0.108	1,525.374
Train													
BNSF Locomotive Engine (in motion)	1	8	8	0.106	0.097	0.576	0.188	3.567	0.002	219.441	0.017	0.006	221.547
BNSF Locomotive Engine (idling)	4	-	-	0.025	0.023	0.377	0.366	0.475	0.016	1,645.807	0.130	0.042	1,661.600
Max. Daily Emissions Total (lb/day)				**0.72**	**0.63**	**155.60**	**20.28**	**19.80**	**0.10**	**11,808.61**	**2.84**	**0.67**	**12,514.24**

Hourly Emissions For Combustion Exhaust Emissions

Equipment Description	Max. Operating Hours / Day	Max. Hourly Emissions (lb/hr) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle											
Washing Vehicle (running)	8	0.003	0.001	0.047	0.004	0.011	0.001	156.545	0.010	0.008	159.108
Washing Vehicle (idling)	8	-	-	8.548	1.494	0.099	0.003	263.045	0.016	0.013	267.351
LRU Maintenance Truck with Boom (running)	8	0.002	0.001	0.026	0.002	0.006	0.001	87.665	0.005	0.004	89.100
LRU Maintenance Truck with Boom (idling)	8	-	-	4.787	0.837	0.055	0.002	147.305	0.009	0.007	149.717
Staff & Security Truck	24	0.000	0.000	0.065	0.002	0.001	0.000	10.062	0.003	0.003	10.906
Staff Cars	2	0.067	0.051	2.887	0.178	0.265	0.006	659.217	0.065	0.060	679.139
Van Pooling	2	0.002	0.001	0.036	0.001	0.003	0.000	47.172	0.001	0.000	47.305
Visitor Cars	8	0.001	0.001	0.060	0.004	0.006	0.000	13.734	0.001	0.001	14.149
Operations and Maintenance Supplies truck	2	0.001	0.001	0.014	0.002	0.029	0.000	4.003	0.000	0.000	4.016
Waste Management truck	2	0.007	0.006	0.063	0.030	0.135	0.000	24.403	0.000	0.000	24.416
Hazardous Waste truck	2	0.007	0.006	0.063	0.030	0.135	0.000	24.403	0.000	0.000	24.416
Transport Tractor Trailers truck	2	0.007	0.006	0.063	0.030	0.135	0.000	24.403	0.000	0.000	24.416
Water Delivery Trucks	2	0.063	0.056	0.626	0.050	0.802	0.002	198.899	0.001	0.001	418.552
Hydrogen Delivery Trucks	8	0.002	0.002	0.016	0.007	0.034	0.000	6.101	0.000	0.000	6.104
Off-road Equipment											
Rubber-wheeled forklift with telescoping boom	8	0.005	0.005	0.884	0.006	0.259	-	54.884	0.050	0.004	57.202
Forklift	8	0.005	0.005	0.884	0.006	0.259	-	54.884	0.050	0.004	57.202
Telescoping Man Lift	8	0.016	0.016	2.947	0.020	0.863	-	182.947	0.168	0.014	190.672
Train											
BNSF Locomotive Engine (in motion)	0.53	0.199	0.183	1.079	0.353	6.689	0.004	411.452	0.032	0.011	415.400
BNSF Locomotive Engine (idling)	1	0.025	0.023	0.377	0.366	0.475	0.016	1,645.807	0.130	0.042	1,661.600
Max. Hourly Emissions Total (lb/hr)		**0.41**	**0.36**	**23.47**	**3.42**	**10.26**	**0.04**	**4,016.93**	**0.54**	**0.17**	**4,300.77**

Yearly Emissions For Combustion Exhaust Emissions

Equipment Description	Max. Operating Days / Month	Max. Annual Emissions (ton/year) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle											
Washing Vehicle (running)	30	0.004	0.002	0.067	0.006	0.016	0.002	225.425	0.014	0.011	229.115
Washing Vehicle (idling)	30	-	-	12.309	2.152	0.142	0.004	378.785	0.023	0.018	384.986
LRU Maintenance Truck with Boom (running)	30	0.002	0.001	0.038	0.003	0.009	0.001	126.238	0.008	0.006	128.304
LRU Maintenance Truck with Boom (idling)	30	-	-	6.893	1.205	0.079	0.002	212.120	0.013	0.010	215.592
Staff & Security Truck	30	0.001	0.001	0.280	0.007	0.004	0.001	43.468	0.014	0.011	47.115
Staff Cars	30	0.024	0.018	1.039	0.064	0.095	0.002	237.318	0.023	0.022	244.490
Van Pooling	30	0.001	0.000	0.013	0.000	0.001	0.000	16.982	0.000	0.000	17.030
Visitor Cars	22	0.001	0.001	0.064	0.004	0.006	0.000	14.503	0.001	0.001	14.941
Operations and Maintenance Supplies truck	5	0.000	0.000	0.001	0.000	0.002	0.000	0.240	0.000	0.000	0.241
Waste Management truck	5	0.000	0.000	0.004	0.002	0.008	0.000	1.464	0.000	0.000	1.465
Hazardous Waste truck	5	0.000	0.000	0.004	0.002	0.008	0.000	1.464	0.000	0.000	1.465
Transport Tractor Trailers truck	5	0.000	0.000	0.004	0.002	0.008	0.000	1.464	0.000	0.000	1.465
Water Delivery Trucks	15	0.011	0.010	0.113	0.009	0.144	0.000	35.802	0.000	0.000	75.339
Hydrogen Delivery Trucks	3	0.000	0.000	0.002	0.001	0.005	0.000	0.879	0.000	0.000	0.879
Off-road Equipment											
Rubber-wheeled forklift with telescoping boom	30	0.007	0.007	1.273	0.009	0.373	-	79.033	0.072	0.006	82.370
Forklift	30	0.007	0.007	1.273	0.009	0.373	-	79.033	0.072	0.006	82.370
Telescoping Man Lift	30	0.023	0.023	4.244	0.029	1.242	-	263.443	0.242	0.020	274.567
Train											
BNSF Locomotive Engine (in motion)	15	0.010	0.009	0.052	0.017	0.321	0.000	19.750	0.002	0.001	19.939
BNSF Locomotive Engine (idling)	15	0.002	0.002	0.034	0.033	0.043	0.001	148.123	0.012	0.004	149.544
Max. Annual Emissions Total (ton/year)		**0.10**	**0.08**	**27.71**	**3.55**	**2.88**	**0.02**	**1,885.53**	**0.50**	**0.12**	**1,971.22**

Calico Solar
Fugitive Dust Emissions (on-site)

Travel on sealed roads (paved)

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest

7.4 sL = road surface silt loading (grams per square meter) (g/m^2), from AP-42 Table 13.2.1-4 for Municipal solid waste landfill
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on sealed roads	Max Daily Distance per Vehicle to drive on sealed roads (mile/day)	Max Daily VMT (all units)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Washing Vehicle	50	6.8	100%	7	340	12	8	30	0.044	0.294
LRU Maintenance Truck with Boom	28	6.8	100%	7	190	10	8	30	0.033	0.224
Staff & Security Truck	7	48	100%	48	336	2.25	24	30	0.003	0.023
Rubber-wheeled forklift with telescoping boom	3	10	100%	10	30	4	8	30	0.008	0.056
Forklift	3	10	50%	5	15	3	8	30	0.005	0.036
Telescoping Man Lift	10	10	100%	10	100	3	8	30	0.005	0.036
Staff Cars	120	7	94%	7	790	2.0	2	30	0.003	0.020
Van Pooling	5	7	94%	7	33	4	2	30	0.008	0.056
Visitor Cars	10	7	94%	7	66	2	8	22	0.003	0.020
Operations and Maintenance Supplies truck	1	7	94%	7	7	5	2	5	0.012	0.079
Waste Management truck	1	7	94%	7	7	20	2	5	0.095	0.634
Hazardous Waste truck	1	7	94%	7	7	20	2	5	0.095	0.634
Transport Tractor Trailers truck	1	7	94%	7	7	20	2	5	0.095	0.634
Water Delivery Trucks	20	6	94%	6	113	11.7	2	15	0.042	0.283
Hydrogen Delivery Trucks	1	7	94%	7	7	20	8	3	0.095	0.634

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Washing Vehicle	0%	0%	12.51	12.51	100.10	100.10	44.63%	18.02	18.02	1.86	1.86	14.92	14.92	2.69	2.69
LRU Maintenance Truck with Boom	0%	0%	5.33	5.33	42.62	42.62	19.00%	7.67	7.67	0.79	0.79	6.34	6.34	1.14	1.14
Staff & Security Truck	0%	0%	0.33	0.33	7.89	7.89	3.52%	1.42	1.42	0.05	0.05	1.09	1.09	0.20	0.20
Rubber-wheeled forklift with telescoping boom	0%	0%	0.21	0.21	1.69	1.69	0.75%	0.30	0.30	0.03	0.03	0.24	0.24	0.04	0.04
Forklift	0%	0%	0.07	0.07	0.55	0.55	0.24%	0.10	0.10	0.01	0.01	0.08	0.08	0.01	0.01
Telescoping Man Lift	0%	0%	0.45	0.45	3.64	3.64	1.62%	0.66	0.66	0.06	0.06	0.52	0.52	0.09	0.09
Staff Cars	0%	0%	7.74	7.74	15.48	15.48	6.90%	2.79	2.79	1.05	1.05	2.10	2.10	0.38	0.38
Van Pooling	0%	0%	0.93	0.93	1.85	1.85	0.83%	0.33	0.33	0.13	0.13	0.27	0.27	0.05	0.05
Visitor Cars	0%	0%	0.16	0.16	1.29	1.29	0.58%	0.17	0.17	0.02	0.02	0.17	0.17	0.02	0.02
Operations and Maintenance Supplies truck	0%	0%	0.26	0.26	0.52	0.52	0.23%	0.02	0.02	0.04	0.04	0.08	0.08	0.00	0.00
Waste Management truck	0%	0%	2.09	2.09	4.17	4.17	1.86%	0.13	0.13	0.31	0.31	0.62	0.62	0.02	0.02
Hazardous Waste truck	0%	0%	2.09	2.09	4.17	4.17	1.86%	0.13	0.13	0.31	0.31	0.62	0.62	0.02	0.02
Transport Tractor Trailers truck	0%	0%	2.09	2.09	4.17	4.17	1.86%	0.13	0.13	0.31	0.31	0.62	0.62	0.02	0.02
Water Delivery Trucks	0%	0%	15.99	15.99	31.97	31.97	14.25%	2.88	2.88	2.38	2.38	4.76	4.76	0.43	0.43
Hydrogen Delivery Trucks	0%	0%	0.52	0.52	4.17	4.17	1.86%	0.08	0.08	0.08	0.08	0.62	0.62	0.01	0.01
TOTAL Fugitive emissions for vehicles traveled on sealed road (paved)			**50.75**	**50.75**	**224.28**	**224.28**		**34.80**	**34.80**	**7.45**	**7.45**	**33.06**	**33.06**	**5.12**	**5.12**

Travel on paved road

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$

EPA AP-42 Section 13.2.1 Paved Roads Equation 1
E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
sL = road surface silt loading (grams per square meter) (g/m^2), use more representative numbers from CARB - Emission Inventory Database - Section 7.8 SJV - Entrained Paved Road Dust - Rural Roads (emission inventory
1.6 code: 640-643-5400-0000), June 2006.
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on paved road	Max Daily Distance per Vehicle to drive on paved road (mile/day)	Max Daily VMT (all units)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Washing Vehicle	50	6.8	0%	0	0	12	8	30	0.016	0.109
LRU Maintenance Truck with Boom	28	6.8	0%	0	0	10	8	30	0.012	0.082
Staff & Security Truck	7	48	0%	0	0	2.25	24	30	0.001	0.008
Rubber-wheeled forklift with telescoping boom	3	10	0%	0	0	4	8	30	0.003	0.021
Forklift	3	10	50%	5	15	3	8	30	0.002	0.013
Telescoping Man Lift	10	10	0%	0	0	3	8	30	0.002	0.013
Staff Cars	120	7	6%	0.42	50	2	2	30	0.001	0.007
Van Pooling	5	7	6%	0.42	2	4	2	30	0.003	0.021
Visitor Cars	10	7	6%	0.42	4	2	8	22	0.001	0.007
Operations and Maintenance Supplies truck	1	7	6%	0.42	0	5	2	5	0.004	0.029
Waste Management truck	1	7	6%	0.42	0	20	2	5	0.035	0.234
Hazardous Waste truck	1	7	6%	0.42	0	20	2	5	0.035	0.234
Transport Tractor Trailers truck	1	7	6%	0.42	0	20	2	5	0.035	0.234
Water Delivery Trucks	20	6	6%	0.36	7	11.7	2	15	0.015	0.104
Hydrogen Delivery Trucks	1	7	6%	0.42	0	20	8	3	0.035	0.234

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]		Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]
Washing Vehicle	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LRU Maintenance Truck with Boom	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber-wheeled forklift with telescoping boom	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0%	0%	0.02	0.02	0.20	0.20	11.11%	0.04	0.04	0.00	0.00	0.03	0.03	0.00	0.00
Telescoping Man Lift	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff Cars	0%	0%	0.18	0.18	0.35	0.35	19.71%	0.06	0.06	0.02	0.02	0.04	0.04	0.01	0.01
Van Pooling	0%	0%	0.02	0.02	0.04	0.04	2.42%	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Visitor Cars	0%	0%	0.00	0.00	0.03	0.03	1.64%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operations and Maintenance Supplies truck	0%	0%	0.01	0.01	0.01	0.01	0.68%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste Management truck	0%	0%	0.05	0.05	0.10	0.10	5.53%	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Hazardous Waste truck	0%	0%	0.05	0.05	0.10	0.10	5.53%	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Transport Tractor Trailers truck	0%	0%	0.05	0.05	0.10	0.10	5.53%	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Water Delivery Trucks	0%	0%	0.38	0.38	0.75	0.75	42.31%	0.07	0.07	0.06	0.06	0.11	0.11	0.01	0.01
Hydrogen Delivery Trucks	0%	0%	0.01	0.01	0.10	0.10	5.53%	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
TOTAL Fugitive emissions for vehicles traveled on paved road			**0.77**	**0.77**	**1.78**	**1.78**		**0.19**	**0.19**	**0.11**	**0.11**	**0.24**	**0.24**	**0.02**	**0.02**

on-site fugitive

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Max. Operating Hours / Day	Assumed distance percentage to drive on sealed road (paved)	Assumed distance percentage to drive on paved road	Sealed Road - PM_{10} Fugitive Emissions (lb/day)	Paved Road - PM_{10} Fugitive Emissions (lb/day)	Total PM_{10} Fugitive Emissions (lb/day)
Washing Vehicle	50	6.8	8	100%	0%	100.10	0.00	100.10
LRU Maintenance Truck with Boom	28	6.8	8	100%	0%	42.62	0.00	42.62
Staff & Security Truck	7	48	24	100%	0%	7.89	0.00	7.89
Rubber-wheeled forklift with telescoping boom	3	10	8	100%	0%	1.69	0.00	1.69
Forklift	3	10	8	50%	50%	0.55	0.20	0.74
Telescoping Man Lift	10	10	8	100%	0%	3.64	0.00	3.64
Staff Cars	120	7	2	94%	6%	15.48	0.35	15.83
Van Pooling	5	7	2	94%	6%	1.85	0.04	1.89
Visitor Cars	10	7	8	94%	6%	1.29	0.03	1.32
Operations and Maintenance Supplies truck	1	7	2	94%	6%	0.52	0.01	0.53
Waste Management truck	1	7	2	94%	6%	4.17	0.10	4.27
Hazardous Waste truck	1	7	2	94%	6%	4.17	0.10	4.27
Transport Tractor Trailers truck	1	7	2	94%	6%	4.17	0.10	4.27
Water Delivery Trucks	20	6	2	94%	6%	31.97	0.75	32.72
Hydrogen Delivery Trucks	1	7	8	94%	6%	4.17	0.10	4.27
						224.28	**1.78**	**226.06**

Calico Solar - Operation and Maintenance Equipment Emissions (off-site)

Emission Factors For Combustion Exhaust Emissions

Equipment Description	Horse-power	Vehicle Weight (lbs)	Fuel	Emission Factors (unit: g/mile or g/idle-hr for on-road vehicle, lb/hr for off-road equipment, g/bhp-hr for locomotive)									
				PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle				**Emission factors (g/mile or g/idle-hr)**									
Washing Vehicle (running)	driving on-site only												
Washing Vehicle (idling)													
LRU Maintenance Truck with Boom (running)													
LRU Maintenance Truck with Boom (idling)													
Staff & Security Truck													
Staff Cars	100	4,000	Gasoline & diesel	0.032	0.018	1.607	0.043	0.186	0.003	289.288	0.070	0.065	310.82
Van Pooling	150	8,000	Gasoline	0.025	0.011	0.492	0.006	0.040	0.005	496.468	0.016	0.010	499.93
Visitor Cars	100	4,000	Gasoline & diesel	0.032	0.018	1.607	0.043	0.186	0.003	289.288	0.070	0.065	310.82
Operations and Maintenance Supplies truck	200	10,000	Diesel	0.046	0.028	0.488	0.083	3.056	0.005	519.299	0.005	0.005	520.89
Waste Management truck	250	40,000	Diesel	0.377	0.309	2.210	0.445	8.854	0.016	1670.679	0.005	0.005	1672.27
Hazardous Waste truck	250	40,000	Diesel	0.377	0.309	2.210	0.445	8.854	0.016	1670.679	0.005	0.005	1672.27
Transport Tractor Trailers truck	250	40,000	Diesel	0.377	0.309	2.210	0.445	8.854	0.016	1670.679	0.005	0.005	1672.27
Water Delivery Trucks	300	23,400	Diesel	0.169	0.141	1.245	0.121	4.891	0.014	1505.000	0.005	0.005	1672.27
Hydrogen Delivery Trucks	250	40,000	Diesel	0.377	0.309	2.210	0.445	8.854	0.016	1670.679	0.005	0.005	1672.27
Off-road Equipment				**Emission factors (lb/hr)**									
Rubber-wheeled forklift with telescoping boom	driving on-site only												
Forklift													
Telescoping Man Lift													
Train	**Load Factor**			**Emission factors (g/bhp-hr)**									
BNSF Locomotive Engine (in motion)	4400	0.087	Diesel	0.236	0.217	1.280	0.418	7.933	0.005	487.981	0.038	0.013	492.663
BNSF Locomotive Engine (idling)	4400	0.087	Diesel	0.007	0.007	0.112	0.109	0.141	0.005	487.981	0.038	0.013	492.663

Note:

1. Vehicle description in EMFAC2007 model
   - Staff Car is Passenger Cars (LDA-ALL)
   - Van Pooling is Medium-Duty Trucks (MDV-CAT)
   - Visitor Cars is Passenger Cars (LDA-ALL)
   - Operations and Maintenance Supplies Delivery Truck is Light-Heavy-Duty (LHD1-DSL)
   - Waste Management Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
   - Hazardous Waste Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
   - Transport Tractor Trailer is Heavy-Heavy-Duty (HHD-DSL)
   - Water Delivery Truck is Medium-Heavy-Duty (MHD-DSL)
   - Hydrogen Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
2. PM emission factors determined using guidance from SCAQMD Final - Methodology to Calculate PM_{10} and $PM_{2.5}$ Significance Thresholds 10/1/2006, Appendix A - Updated CEIDARS Table with $PM_{2.5}$ Fractions

   On-road vehicles
   - $PM_{2.5}$ Fraction of PM_{10}, Brake wear: 0.429
   - $PM_{2.5}$ Fraction of PM_{10}, Diesel: 0.920
   - $PM_{2.5}$ Fraction of PM_{10}, Gasoline-catalyst: 0.928
   - $PM_{2.5}$ Fraction of PM_{10}, Tire wear: 0.250
   - Assume $PM_{2.5}$ and PM_{10} Fraction of total PM for gasoline hybrid car is: 1.000
3. CO_2 emission factors for gasoline and diesel fuel on-road vehicles are from EMFAC2007 model.
4. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009
5. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)
   - CO_2 GWP (SAR, 1996) = 1
   - CH_4 GWP (SAR, 1996) = 21
   - N_2O GWP (SAR, 1996) = 310
6. The average speed for train is assumed to be 60 mph on-site; the idling time at the on-site train station is assumed to be up to 1 hour (conservative) of the additional locomotive engine plus 3 (assumed) existing locomotive engines.

Daily Emissions For Combustion Exhaust Emissions

Equipment Description	No. Of Units	Max Daily Distance per Vehicle within MDAQMD jurisdictional area (mile/day)	Max Daily VMT (all units)	Max. Daily Emissions (lb/day) PM10	PM2.5	CO	ROG	NOx	SOx	CO2	CH4	N2O	Total GHG - CO2e
On-road Vehicle													
Washing Vehicle (running)	driving on-site only												
Washing Vehicle (idling)													
LRU Maintenance Truck with Boom (running)													
LRU Maintenance Truck with Boom (idling)													
Staff & Security Truck													
Staff Cars	120	74.0	8,880	0.63	0.35	31.43	0.84	3.64	0.06	5,658.32	1.38	1.27	6,079.54
Van Pooling	5	74.0	370	0.02	0.01	0.40	0.00	0.03	0.00	404.61	0.01	0.01	407.43
Visitor Cars	10	74.0	740	0.05	0.03	2.62	0.07	0.30	0.00	471.53	0.11	0.11	506.63
Operations and Maintenance Supplies truck	1	124.0	124	0.01	0.01	0.13	0.02	0.83	0.00	141.83	0.00	0.00	142.27
Waste Management truck	1	130.0	130	0.11	0.09	0.63	0.13	2.54	0.00	478.39	0.00	0.00	478.85
Hazardous Waste truck	1	156.0	156	0.13	0.11	0.76	0.15	3.04	0.01	574.07	0.00	0.00	574.61
Transport Tractor Trailers truck	1	124.0	124	0.10	0.08	0.60	0.12	2.42	0.00	456.31	0.00	0.00	456.74
Water Delivery Trucks	20	-	-	-	-	-	-	-	-	-	-	-	-
Hydrogen Delivery Trucks	1	160.0	160	0.13	0.11	0.78	0.16	3.12	0.01	588.79	0.00	0.00	589.35
Off-road Equipment													
Rubber-wheeled forklift with telescoping boom	driving on-site only												
Forklift													
Telescoping Man Lift													
Train													
BNSF Locomotive Engine (in motion)	1	120.0	120	0.03	0.02	0.14	0.05	0.89	0.00	54.86	0.00	0.00	55.39
BNSF Locomotive Engine (idling)	4	-	-	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
Max. Daily Emissions Total (lb/day)				**1.24**	**0.83**	**37.88**	**1.91**	**17.29**	**0.11**	**10,474.51**	**1.65**	**1.43**	**10,952.41**

Hourly Emissions For Combustion Exhaust Emissions

Equipment Description	Max. Operating Hours / Day	Max. Hourly Emissions (lb/hr) PM10	PM2.5	CO	ROG	NOx	SOx	CO2	CH4	N2O	Total GHG - CO2e
On-road Vehicle											
Washing Vehicle (running)	driving on-site only										
Washing Vehicle (idling)											
LRU Maintenance Truck with Boom (running)											
LRU Maintenance Truck with Boom (idling)											
Staff & Security Truck											
Staff Cars	2	0.313	0.174	15.716	0.421	1.819	0.029	2,829.160	0.688	0.633	3,039.771
Van Pooling	2	0.010	0.005	0.200	0.002	0.016	0.002	202.305	0.006	0.004	203.715
Visitor Cars	8	0.007	0.004	0.327	0.009	0.038	0.001	58.941	0.014	0.013	63.329
Operations and Maintenance Supplies truck	2	0.006	0.004	0.067	0.011	0.417	0.001	70.917	0.001	0.001	71.135
Waste Management truck	2	0.054	0.044	0.316	0.064	1.268	0.002	239.194	0.001	0.001	239.423
Hazardous Waste truck	2	0.065	0.053	0.380	0.076	1.521	0.003	287.033	0.001	0.001	287.307
Transport Tractor Trailers truck	2	0.051	0.042	0.302	0.061	1.209	0.002	228.154	0.001	0.001	228.372
Water Delivery Trucks	2	-	-	-	-	-	-	-	-	-	-
Hydrogen Delivery Trucks	8	0.017	0.014	0.097	0.020	0.390	0.001	73.598	0.000	0.000	73.668
Off-road Equipment											
Rubber-wheeled forklift with telescoping boom	driving on-site only										
Forklift											
Telescoping Man Lift											
Train											
BNSF Locomotive Engine (in motion)	0.13	0.199	0.183	1.079	0.353	6.689	0.004	411.452	0.032	0.011	415.400
BNSF Locomotive Engine (idling)	1	0.025	0.023	0.377	0.366	0.475	0.016	1,645.807	0.130	0.042	1,661.600
Max. Hourly Emissions Total (lb/hour)		**0.75**	**0.54**	**18.86**	**1.38**	**13.84**	**0.06**	**6,046.56**	**0.87**	**0.71**	**6,283.72**

Yearly Emissions For Combustion Exhaust Emissions

Equipment Description	Max. Operating Days / Month	Max. Annual Emissions (ton/year) PM10	PM2.5	CO	ROG	NOx	SOx	CO2	CH4	N2O	Total GHG - CO2e
On-road Vehicle											
Washing Vehicle (running)	driving on-site only										
Washing Vehicle (idling)											
LRU Maintenance Truck with Boom (running)											
LRU Maintenance Truck with Boom (idling)											
Staff & Security Truck											
Staff Cars	30	0.11	0.06	5.66	0.15	0.65	0.01	1,018.50	0.25	0.23	1,094.32
Van Pooling	30	0.00	0.00	0.07	0.00	0.01	0.00	72.83	0.00	0.00	73.34
Visitor Cars	22	0.01	0.00	0.35	0.01	0.04	0.00	62.24	0.02	0.01	66.87
Operations and Maintenance Supplies truck	5	0.00	0.00	0.00	0.00	0.03	0.00	4.26	0.00	0.00	4.27
Waste Management truck	5	0.00	0.00	0.02	0.00	0.08	0.00	14.35	0.00	0.00	14.37
Hazardous Waste truck	5	0.00	0.00	0.02	0.00	0.09	0.00	17.22	0.00	0.00	17.24
Transport Tractor Trailers truck	5	0.00	0.00	0.02	0.00	0.07	0.00	13.69	0.00	0.00	13.70
Water Delivery Trucks	15	-	-	-	-	-	-	-	-	-	-
Hydrogen Delivery Trucks	3	0.00	0.00	0.01	0.00	0.06	0.00	10.60	0.00	0.00	10.61
Off-road Equipment											
Rubber-wheeled forklift with telescoping boom	driving on-site only										
Forklift											
Telescoping Man Lift											
Train											
BNSF Locomotive Engine (in motion)	15	0.00	0.00	0.01	0.00	0.08	0.00	4.94	0.00	0.00	4.98
BNSF Locomotive Engine (idling)	15	0.00	0.00	0.03	0.03	0.04	0.00	148.12	0.01	0.00	149.54
Max. Annual Emissions Total (ton/year)		**0.14**	**0.08**	**6.20**	**0.21**	**1.14**	**0.01**	**1,366.75**	**0.28**	**0.25**	**1,449.24**

Calico Solar
Fugitive Dust Emissions (off-site)

Travel on paved road

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
0.32 sL = road surface silt loading (grams per square meter) (g/m^2), From CARB - Emission Inventory Database - Section 7.9 Entrained Paved Road Dust - Local Streets (emission inventory code: 640-641-5400-0000)
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on paved road	Max Daily Distance per Vehicle to drive on paved road (mile/day)	Max Daily VMT (all units)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Washing Vehicle										
LRU Maintenance Truck with Boom										
Staff & Security Truck					driving on-site only					
Rubber-wheeled forklift with telescoping boom										
Forklift										
Telescoping Man Lift										
Staff Cars	120	74.0	100%	74	8880	2	2	30	0.000	0.002
Van Pooling	5	74.0	100%	74	370	4	2	30	0.001	0.007
Visitor Cars	10	74.0	100%	74	740	2	8	22	0.000	0.002
Operations and Maintenance Supplies truck	1	124.0	100%	124	124	5	2	5	0.001	0.010
Waste Management truck	1	130.0	100%	130	130	20	2	5	0.012	0.082
Hazardous Waste truck	1	156.0	100%	156	156	20	2	5	0.012	0.082
Transport Tractor Trailers truck	1	124.0	100%	124	124	20	2	5	0.012	0.082
Water Delivery Trucks	20	0.0	100%	0	0	11.7	2	15	0.005	0.036
Hydrogen Delivery Trucks	1	160.0	100%	160	160	20	8	3	0.012	0.082

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]		Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]
Washing Vehicle															
LRU Maintenance Truck with Boom															
Staff & Security Truck															
Rubber-wheeled forklift with telescoping boom							driving on-site only								
Forklift															
Telescoping Man Lift															
Staff Cars	0%	0%	9.51	9.51	19.02	19.02	26.77%	3.42	3.42	0.16	0.16	0.32	0.32	0.06	0.06
Van Pooling	0%	0%	1.28	1.28	2.55	2.55	3.59%	0.46	0.46	0.14	0.14	0.28	0.28	0.05	0.05
Visitor Cars	0%	0%	0.20	0.20	1.59	1.59	2.23%	0.21	0.21	0.00	0.00	0.03	0.03	0.00	0.00
Operations and Maintenance Supplies truck	0%	0%	0.61	0.61	1.22	1.22	1.72%	0.04	0.04	0.07	0.07	0.15	0.15	0.00	0.00
Waste Management truck	0%	0%	5.32	5.32	10.65	10.65	14.98%	0.32	0.32	0.78	0.78	1.56	1.56	0.05	0.05
Hazardous Waste truck	0%	0%	6.39	6.39	12.78	12.78	17.98%	0.38	0.38	0.94	0.94	1.87	1.87	0.06	0.06
Transport Tractor Trailers truck	0%	0%	5.08	5.08	10.16	10.16	14.29%	0.30	0.30	0.74	0.74	1.49	1.49	0.04	0.04
Water Delivery Trucks	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydrogen Delivery Trucks	0%	0%	1.64	1.64	13.11	13.11	18.44%	0.24	0.24	0.24	0.24	1.92	1.92	0.03	0.03
TOTAL Fugitive emissions for vehicles traveled on paved road			**30.03**	**30.03**	**71.07**	**71.07**		**5.37**	**5.37**	**3.08**	**3.08**	**7.62**	**7.62**	**0.30**	**0.30**

off-site fugitive

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Max. Operating Hours / Day	Assumed distance percentage to drive on unpaved road	Assumed distance percentage to drive on paved road	Unpaved Road - PM_{10} Fugitive Emissions (lb/day)	Paved Road - PM_{10} Fugitive Emissions (lb/day)	Total PM_{10} Fugitive Emissions (lb/day)
Washing Vehicle	driving on-site only							
LRU Maintenance Truck with Boom								
Staff & Security Truck								
Rubber-wheeled forklift with telescoping boom								
Forklift								
Telescoping Man Lift								
Staff Cars	120	74	2	0%	100%	0.00	19.02	19.02
Van Pooling	5	74	2	0%	100%	0.00	2.55	2.55
Visitor Cars	10	74	8	0%	100%	0.00	1.59	1.59
Operations and Maintenance Supplies truck	1	124	2	0%	100%	0.00	1.22	1.22
Waste Management truck	1	130	2	0%	100%	0.00	10.65	10.65
Hazardous Waste truck	1	156	2	0%	100%	0.00	12.78	12.78
Transport Tractor Trailers truck	1	124	2	0%	100%	0.00	10.16	10.16
Water Delivery Trucks	20	0	2	0%	100%	0.00	0.00	0.00
Hydrogen Delivery Trucks	1	160	8	0%	100%	0.00	13.11	13.11
						0.00	**71.07**	**71.07**

Attachment AQ-2b
Operational Emissions for Truck Transport
(Jan. 26, 2010)

Calico Solar

Emissions from Emergency Diesel Generator

Rated Horsepower	**335**	**BHP**
Testing duration	**20**	**min/month**
Yearly testing	**12**	**month/year**
Expected non-emergency usage	**4**	**hr/yr**

Pollutant	Emision Factor	Emission Rate	Emission Rate per Testing	Yearly Emissions	Hourly Emission Rate	Annual Emission Rate
	g/HP/Hr	lb/hr	lb	lb/yr	g/s	g/s
NO_X	4.61	3.41	1.14	13.63	0.143	1.96E-04
CO	0.39	0.29	0.10	1.15	0.012	1.66E-05
VOC (Total Hydrocarbons)	0.15	0.11	0.04	0.44	0.005	6.38E-06
SO_X	0.12	0.09	0.03	0.35	0.004	5.10E-06
PM_{10}	0.06	0.04	0.01	0.18	0.002	2.55E-06
$PM_{2.5}$	0.06	0.04	0.01	0.18	0.002	2.55E-06
CO_2		447.54	149.18	1790.15	18.797	2.57E-02
CH_4		0.02	0.01	0.07	0.001	1.01E-06
N_2O		0.004	0.0015	0.02	0.0002	2.54E-07
CO_2e		449.28	149.76	1797.10	18.870	2.58E-02

Engine parameters

Flow Rate (acfm)	1218	17.726 m/s
Exhaust Temp (degrees C)	465	738.15 K
Stack Diameter (feet)	0.6667	0.2032 m
Stack height (feet) above ground	6.5	1.981 m
Fuel Use (gal/hr)[2]	20	20.000 gal/hr

Note:

1. The stack will be in outdoor enclosures, not in buildings.
2. Fuel use value is based on the engine parameter data in CARB Table 1 of "Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines", Oct 2000.
3. Emission rates for the criteria pollutant are based on vendor data (to meet Tier 3 requirements).
4. Greenhouse gas emission factors from CCAR General Reporting Protocol V3.1 January 2009 Tables C.7 and C.9
5. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)

   - CO_2 GWP (SAR, 1996) = 1
   - CH_4 GWP (SAR, 1996) = 21
   - N_2O GWP (SAR, 1996) = 310

6. PM2.5 emissions are assumed to be the same as the PM10 emissions

Calico Solar

Equipment = 5000-gal above ground storage tank
Fuel = Gasoline
Dimension= 88" W x 299" L x 67" H
Throughput (gal/year) = 120,000
Days of Operations (days/year) = 365

Description	TOG Emission Factor[2] (lbs/1000 gal)	TOG Emissions[1] (tons/Year)	TOG Emissions[1] (lbs/day)
Working Loss[3]		0.409	2.242
Breathing Loss[3]		0.536	2.935
Vehicle Refueling - Vapor Displacement	0.74	0.044	0.243
Vehicle Refueling - Spillage	0.42	0.025	0.138
Total Vehicle Refueling		0.070	0.381
Total TOG Emissions		**1.014**	**5.558**

Note:

1. Emission estimate based on 120,000 gallon per year tank throughput.
2. Emission factors from CARB Emission Inventory Estimation Guidelines Section 4.10 GASOLINE DISPENSING FACILITIES (Revised May 1999)
3. Emission estimates from EPA Tank4.0.9d model results

Calico Solar

Table 5.2-17 Revised

Estimated maximum potential sulfur hexafluoride (SF_6) emissions leakage emissions from proposed circuit breakers and other transmissions system equipment

Breaker	Qty	Typical Make	Typical Model	SF6 Lbs/Bkr	Leakage Rate	Leakage Lbs/Yr (per Bkr)	Leakage Lbs/Yr (All Bkrs)	CO_2e emissions (metric tons/Yr)
34.5kV Solar Group Breaker (3000A)	6	GE-Hitachi HVB	HS Series	31	1%	0.31	1.86	20.16
242kV Power Circuit Breaker (2000A)	8	GE-Hitachi HVB	HP Series	240	1%	2.4	19.2	208.14
242kV Coupling Capacitor Voltage Transformer (900A)	6	GE-Hitachi HVB	HP Series	240	1%	2.4	14.4	156.11
							CO_2e emissions (metric tons/Yr)	384.42

Note:

Greenhouse Gas Global Warming Potentials (GWPs) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)

Greenhouse Gas	GWP (SAR, 1996)
SF_6	23,900

OPERATIONS AND MAINTENANCE VEHICLES REQUIREMENTS

Description	Activity	Make / Model	Fuel	Quantity	Frequency	Horse-power	Vehicle Weight (tons)	Assumed idle time on site during washing & maintaining the sunchachers per vehicle (idle hr/day)	Max Daily Onsite Distance per Vehicle (mile/day)	Assumed distance percentage to drive on onsite sealed roads	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD jurisdictional area (mile/day)	Travel to and from	Max Daily Total Distance per Vehicle (mile/day)	Max. Operating Hours / Day	Max. Operating Days / Month
Washing Vehicle	Mirror Washing	12 ton Truck	Gasoline	50	Daily	225	12	4.0	6.8	100%	0	on-site only	6.8	8	30
LRU Maintenance Truck with Boom	Field Servicing & Maintenance	10 ton Truck	Gasoline	28	Daily	200	10	4.0	6.8	100%	0	on-site only	6.8	8	30
Staff & Security Truck	Site Inspections & Security	Toyota Highlander or similar	Gasoline - Hybrid	7	Daily	187	2.25		48	100%	0	on-site only	48	24	30
Rubber-wheeled forklift with telescoping boom	SunCatcher PCU & Mirror Maintenance	Telehandler	Propane	3	Daily	50	4		10	100%	0	on-site only	10	8	30
Forklift	Warehousing of supplies		Propane	3	Daily	50	3		10	50%	0	on-site only	10	8	30
Telescoping Man Lift	Facility Maintenance and SunCatcher PCU & Mirror Maintenance		Propane	10	Daily	50	3		10	100%	0	on-site only	10	8	30
Staff Cars	Community to Work	Passenger vehicles	Gasoline & diesel	120	Daily	100	2		7	94%	74	Barstow	81	2	30
Van Pooling		Passenger Truck/Van	Gasoline	5	Daily	150	4		7	94%	74	Barstow	81	2	30
Visitor Cars	Sales, Deliveries, Services	Passenger vehicles	Gasoline & diesel	10	Daily	100	2		7	94%	74	Barstow	81	8	22
Delivery Trucks	Operations and Maintenance Supplies	5 ton Cargo	Diesel	1	Weekly	200	5		7	94%	124	Barstow/ Detroit	131	2	5
	Waste Management	20 ton	Diesel	1	Weekly	250	20		7	94%	130	Class III sites	137	2	5
	Hazardous Waste	20 ton	Diesel	1	Weekly	250	20		7	94%	156	Class I sites	163	2	5
Transport Tractor Trailers	Spare Parts, Building Supplies, Temporary Rental Equipment	40-foot	Diesel	1	Weekly	250	20		7	94%	124	Barstow/ Detroit	131	2	5
Water Delivery Trucks	All onsite water will be delivered by truck	3700 gal truck	Diesel	10	Daily	300	11.7		7	94%	128	Cadiz Well	135	8	30
Hydrogen Delivery Trucks	delivery hydrogen to hydrogen tank in MSC	tanker truck	Diesel	1	Monthly	250	20		7	94%	160	Ontario	167	8	3

Note:

1. **Bold** are offroad equipment
2. All other vehicles and equipment will use on-road engines
3. Average distance from main service complex to center of north and south portion of the site is 1.8 and 5 miles, respectively. Thus, the average round trip distance each maintenance and washing vehicle travels is 6.8 miles.
4. Average distance from the Project site entrance to the Main Service Complex is about 3.5 miles.
5. The fenceline perimeter is approximately 30 miles. Each security vehicle is assumed to travel from the MSC around the perimeter plus one trip to the center of north fenced property (1.8 miles) and the center of south fenced property (5 miles) and back (and plus additional 10% for misc trips) = approximately 48 miles.
6. 70% of the time the Project will get the supplies from Barstow, CA area and 30% of the time the Project will get the supplies from Detroit, MI.
7. The distance from the Project site to Barstow is approximately 37 miles.
8. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Detroit is about 120 miles.
9. Two CLASS I waste sites are: (1) Clean Harbors Buttonwillow Landfill (Solid Waste Facility) Lokern Road Kern County, CA - 214 miles to Solar One site; (2) Chemical Waste Management Kettleman Hills Landfill (Solids Waste Facility) 36251 Old Skyline Road Kettleman City, CA 93239 - 240 miles to Solar One site. Information is from the AFC Table 5.14-1.
10. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward the Class I waste sites is about 78 miles.
11. Average distance to the Class III waste site is about 65 miles (within the MDAQMD jurisdictional area). It is assumed half of the general solid waste will go to the disposal site in Barstow and the other half will go to the other Class III waste sites listed in the AFC Table 5.14-1.
12. Distance for water delivery truck travels was provided by the applicant (64 miles one way trip from Cadiz Well to Project site entrance).
13. Distance for hydrogen delivery trucks travels was provided by the applicant (80 miles one way trip from edge of southwest MDAQMD to Project site entrance).

Calico Solar - Operation and Maintenance Equipment Emissions (on-site)

Emission Factors For Combustion Exhaust Emissions

Equipment Description	Horse-power	Vehicle Weight (lbs)	Fuel	Emission Factors (unit: g/mile or g/idle-hr for on-road vehicle and lb/hr for off-road equipment)									
				PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle													
Washing Vehicle (running)	225	24,000	Gasoline	0.032	0.015	0.497	0.041	0.117	0.016	1672.267	0.104	0.081	1699.64
Washing Vehicle (idling)	225	24,000	Gasoline	0.000	0.000	155.230	27.137	1.790	0.049	4776.900	0.296	0.232	4855.10
LRU Maintenance Truck with Boom (running)	200	20,000	Gasoline	0.032	0.015	0.497	0.041	0.117	0.016	1672.267	0.104	0.081	1699.64
LRU Maintenance Truck with Boom (idling)	200	20,000	Gasoline	0.000	0.000	155.230	27.137	1.790	0.049	4776.900	0.296	0.232	4855.10
Staff & Security Truck	187	4,500	Gasoline - Hybrid	0.010	0.010	2.100	0.055	0.030	0.009	326.296	0.104	0.081	353.67
Staff Cars	100	4,000	Gasoline & diesel	0.072	0.055	3.121	0.192	0.286	0.007	712.582	0.070	0.065	734.12
Van Pooling	150	8,000	Gasoline	0.039	0.024	0.933	0.030	0.065	0.012	1223.764	0.016	0.010	1227.22
Visitor Cars	100	4,000	Gasoline & diesel	0.072	0.055	3.121	0.192	0.286	0.007	712.582	0.070	0.065	734.12
Operations and Maintenance Supplies truck	200	10,000	Diesel	0.089	0.067	1.857	0.261	3.793	0.005	519.299	0.005	0.005	520.89
Waste Management truck	250	40,000	Diesel	0.923	0.811	8.172	3.888	17.517	0.030	3165.446	0.005	0.005	3167.04
Hazardous Waste truck	250	40,000	Diesel	0.923	0.811	8.172	3.888	17.517	0.030	3165.446	0.005	0.005	3167.04
Transport Tractor Trailers truck	250	40,000	Diesel	0.923	0.811	8.172	3.888	17.517	0.030	3165.446	0.005	0.005	3167.04
Water Delivery Trucks	300	23,400	Diesel	0.478	0.425	4.734	0.379	6.070	0.014	1505.000	0.005	0.005	3167.04
Hydrogen Delivery Trucks	250	40,000	Diesel	0.923	0.811	8.172	3.888	17.517	0.030	3165.446	0.005	0.005	3167.04
Off-road Equipment													
Rubber-wheeled forklift with telescoping boom	50	8,000	Propane	0.002	0.002	0.295	0.002	0.086	0.000	18.295	0.017	0.001	19.07
Forklift	50	6,000	Propane	0.002	0.002	0.295	0.002	0.086	0.000	18.295	0.017	0.001	19.07
Telescoping Man Lift	50	6,000	Propane	0.002	0.002	0.295	0.002	0.086	0.000	18.295	0.017	0.001	19.07

Note:

1. Vehicle description in EMFAC2007 model
   - Washing vehicle is Medium-Heavy-Duty (MHD-CAT)
   - LRU Maintenance Truck with Boom is Light-Heavy-Duty (LHD-CAT)
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Staff Car is Passenger Cars (LDA-ALL)
   - Van Pooling is Medium-Duty Trucks (MDV-CAT)
   - Visitor Cars is Passenger Cars (LDA-ALL)
   - Operations and Maintenance Supplies Delivery Truck is Light-Heavy-Duty (LHD1-DSL)
   - Waste Management Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
   - Hazardous Waste Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
   - Transport Tractor Trailer is Heavy-Heavy-Duty (HHD-DSL)
   - Water Delivery Truck is Medium-Heavy-Duty (MHD-DSL)
   - Hydrogen Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
2. Criteria pollutant emission factors for propane fuel off-road equipment obtained from CARB OFFROAD2007.
3. Rubber-wheeled forklift with telescoping boom and telescoping man lift are all forklifts
4. PM emission factors determined using guidance from SCAQMD Final - Methodology to Calculate PM_{10} and $PM_{2.5}$ Significance Thresholds 10/1/2006, Appendix A - Updated CEIDARS Table with $PM_{2.5}$ Fractions

   On-road vehicles
   - $PM_{2.5}$ Fraction of PM_{10}, Brake wear: 0.429
   - $PM_{2.5}$ Fraction of PM_{10}, Diesel: 0.920
   - $PM_{2.5}$ Fraction of PM_{10}, Gasoline-catalyst: 0.928
   - $PM_{2.5}$ Fraction of PM_{10}, Tire wear: 0.250
   - Assume $PM_{2.5}$ and PM_{10} Fraction of total PM for gasoline hybrid car is: 1.000

   Off-road equipment
   - Assume $PM_{2.5}$ and PM_{10} Fraction of total PM for propane fuel equipment is: 1.000
5. The emissions of "Toyota Highlander Hybrid" meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
6. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
7. N_2O emission factors for propane fuel off-road equipment are from Reference Source 2: Table C.6, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009
8. CO_2 emission factors for gasoline and diesel fuel on-road vehicles are from EMFAC2007 model.
9. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009. Hybrid Truck is assumed to be gasoline light truck here.
10. CH_4 and N_2O emission factors for the idling vehicles are scaled from the same type of running vehicle emission factor.
11. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)
    - CO_2 GWP (SAR, 1996) = 1
    - CH_4 GWP (SAR, 1996) = 21
    - N_2O GWP (SAR, 1996) = 310

Daily Emissions For Combustion Exhaust Emissions

Equipment Description	No. Of Units	Max Daily Distance per Vehicle (mile/day)	Max Daily VMT (all units)	Max. Daily Emissions (lb/day) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle													
Washing Vehicle (running)	50	6.8	340	0.024	0.011	0.372	0.031	0.088	0.012	1,252.359	0.078	0.061	1,272.861
Washing Vehicle (idling)	50	-	-	-	-	68.383	11.955	0.789	0.022	2,104.361	0.130	0.102	2,138.812
LRU Maintenance Truck with Boom (running)	28	6.8	190	0.013	0.006	0.208	0.017	0.049	0.007	701.321	0.043	0.034	712.802
LRU Maintenance Truck with Boom (idling)	28	-	-	-	-	38.295	6.695	0.442	0.012	1,178.442	0.073	0.057	1,197.734
Staff & Security Truck	7	48.0	336	0.007	0.007	1.554	0.041	0.022	0.007	241.488	0.077	0.060	261.749
Staff Cars	120	7.0	840	0.133	0.101	5.775	0.355	0.529	0.013	1,318.434	0.130	0.120	1,358.279
Van Pooling	5	7.0	35	0.003	0.002	0.072	0.002	0.005	0.001	94.343	0.001	0.001	94.610
Visitor Cars	10	7.0	70	0.011	0.008	0.481	0.030	0.044	0.001	109.869	0.011	0.010	113.190
Operations and Maintenance Supplies truck	1	7.0	7	0.001	0.001	0.029	0.004	0.058	0.000	8.007	0.000	0.000	8.031
Waste Management truck	1	7.0	7	0.014	0.013	0.126	0.060	0.270	0.000	48.806	0.000	0.000	48.831
Hazardous Waste truck	1	7.0	7	0.014	0.013	0.126	0.060	0.270	0.000	48.806	0.000	0.000	48.831
Transport Tractor Trailers truck	1	7.0	7	0.014	0.013	0.126	0.060	0.270	0.000	48.806	0.000	0.000	48.831
Water Delivery Trucks	10	7.0	70	0.074	0.066	0.730	0.058	0.936	0.002	232.048	0.001	0.001	488.310
Hydrogen Delivery Trucks	1	7.0	7	0.014	0.013	0.126	0.060	0.270	0.000	48.806	0.000	0.000	48.831
Off-road Equipment													
Rubber-wheeled forklift with telescoping boom	3			0.039	0.039	7.073	0.048	2.071	-	439.072	0.403	0.033	457.612
Forklift	3			0.039	0.039	7.073	0.048	2.071	-	439.072	0.403	0.033	457.612
Telescoping Man Lift	10			0.130	0.130	23.577	0.160	6.903	-	1,463.572	1.342	0.108	1,525.374
Max. Daily Emissions Total (lb/day)				**0.53**	**0.46**	**154.13**	**19.68**	**15.09**	**0.08**	**9,777.61**	**2.69**	**0.62**	**10,282.30**

Hourly Emissions For Combustion Exhaust Emissions

Equipment Description	Max. Operating Hours / Day	Max. Hourly Emissions (lb/hr) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle											
Washing Vehicle (running)	8	0.003	0.001	0.047	0.004	0.011	0.001	156.545	0.010	0.008	159.108
Washing Vehicle (idling)	8	-	-	8.548	1.494	0.099	0.003	263.045	0.016	0.013	267.351
LRU Maintenance Truck with Boom (running)	8	0.002	0.001	0.026	0.002	0.006	0.001	87.665	0.005	0.004	89.100
LRU Maintenance Truck with Boom (idling)	8	-	-	4.787	0.837	0.055	0.002	147.305	0.009	0.007	149.717
Staff & Security Truck	24	0.000	0.000	0.065	0.002	0.001	0.000	10.062	0.003	0.003	10.906
Staff Cars	2	0.067	0.051	2.887	0.178	0.265	0.006	659.217	0.065	0.060	679.139
Van Pooling	2	0.002	0.001	0.036	0.001	0.003	0.000	47.172	0.001	0.000	47.305
Visitor Cars	8	0.001	0.001	0.060	0.004	0.006	0.000	13.734	0.001	0.001	14.149
Operations and Maintenance Supplies truck	2	0.001	0.001	0.014	0.002	0.029	0.000	4.003	0.000	0.000	4.016
Waste Management truck	2	0.007	0.006	0.063	0.030	0.135	0.000	24.403	0.000	0.000	24.416
Hazardous Waste truck	2	0.007	0.006	0.063	0.030	0.135	0.000	24.403	0.000	0.000	24.416
Transport Tractor Trailers truck	2	0.007	0.006	0.063	0.030	0.135	0.000	24.403	0.000	0.000	24.416
Water Delivery Trucks	8	0.009	0.008	0.091	0.007	0.117	0.000	29.006	0.000	0.000	61.039
Hydrogen Delivery Trucks	8	0.002	0.002	0.016	0.007	0.034	0.000	6.101	0.000	0.000	6.104
Off-road Equipment											
Rubber-wheeled forklift with telescoping boom	8	0.005	0.005	0.884	0.006	0.259	-	54.884	0.050	0.004	57.202
Forklift	8	0.005	0.005	0.884	0.006	0.259	-	54.884	0.050	0.004	57.202
Telescoping Man Lift	8	0.016	0.016	2.947	0.020	0.863	-	182.947	0.168	0.014	190.672
Max. Hourly Emissions Total (lb/hr)		**0.13**	**0.11**	**21.48**	**2.66**	**2.41**	**0.01**	**1,789.78**	**0.38**	**0.12**	**1,866.26**

Yearly Emissions For Combustion Exhaust Emissions

Equipment Description	Max. Operating Days / Month	Max. Annual Emissions (ton/year) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle											
Washing Vehicle (running)	30	0.004	0.002	0.067	0.006	0.016	0.002	225.425	0.014	0.011	229.115
Washing Vehicle (idling)	30	-	-	12.309	2.152	0.142	0.004	378.785	0.023	0.018	384.986
LRU Maintenance Truck with Boom (running)	30	0.002	0.001	0.038	0.003	0.009	0.001	126.238	0.008	0.006	128.304
LRU Maintenance Truck with Boom (idling)	30	-	-	6.893	1.205	0.079	0.002	212.120	0.013	0.010	215.592
Staff & Security Truck	30	0.001	0.001	0.280	0.007	0.004	0.001	43.468	0.014	0.011	47.115
Staff Cars	30	0.024	0.018	1.039	0.064	0.095	0.002	237.318	0.023	0.022	244.490
Van Pooling	30	0.001	0.000	0.013	0.000	0.001	0.000	16.982	0.000	0.000	17.030
Visitor Cars	22	0.001	0.001	0.064	0.004	0.006	0.000	14.503	0.001	0.001	14.941
Operations and Maintenance Supplies truck	5	0.000	0.000	0.001	0.000	0.002	0.000	0.240	0.000	0.000	0.241
Waste Management truck	5	0.000	0.000	0.004	0.002	0.008	0.000	1.464	0.000	0.000	1.465
Hazardous Waste truck	5	0.000	0.000	0.004	0.002	0.008	0.000	1.464	0.000	0.000	1.465
Transport Tractor Trailers truck	5	0.000	0.000	0.004	0.002	0.008	0.000	1.464	0.000	0.000	1.465
Water Delivery Trucks	30	0.013	0.012	0.131	0.011	0.168	0.000	41.769	0.000	0.000	87.896
Hydrogen Delivery Trucks	3	0.000	0.000	0.002	0.001	0.005	0.000	0.879	0.000	0.000	0.879
Off-road Equipment											
Rubber-wheeled forklift with telescoping boom	30	0.007	0.007	1.273	0.009	0.373	-	79.033	0.072	0.006	82.370
Forklift	30	0.007	0.007	1.273	0.009	0.373	-	79.033	0.072	0.006	82.370
Telescoping Man Lift	30	0.023	0.023	4.244	0.029	1.242	-	263.443	0.242	0.020	274.567
Max. Annual Emissions Total (ton/year)		**0.09**	**0.07**	**27.64**	**3.50**	**2.54**	**0.01**	**1,723.63**	**0.48**	**0.11**	**1,814.29**

Calico Solar
Fugitive Dust Emissions (on-site)

Travel on sealed roads (paved)

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest

7.4 sL = road surface silt loading (grams per square meter) (g/m^2), from AP-42 Table 13.2.1-4 for Municipal solid waste landfill
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on sealed roads	Max Daily Distance per Vehicle to drive on sealed roads (mile/day)	Max Daily VMT (all units)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Washing Vehicle	50	6.8	100%	7	340	12	8	30	0.044	0.294
LRU Maintenance Truck with Boom	28	6.8	100%	7	190	10	8	30	0.033	0.224
Staff & Security Truck	7	48	100%	48	336	2.25	24	30	0.003	0.023
Rubber-wheeled forklift with telescoping boom	3	10	100%	10	30	4	8	30	0.008	0.056
Forklift	3	10	50%	5	15	3	8	30	0.005	0.036
Telescoping Man Lift	10	10	100%	10	100	3	8	30	0.005	0.036
Staff Cars	120	7	94%	7	790	2.0	2	30	0.003	0.020
Van Pooling	5	7	94%	7	33	4	2	30	0.008	0.056
Visitor Cars	10	7	94%	7	66	2	8	22	0.003	0.020
Operations and Maintenance Supplies truck	1	7	94%	7	7	5	2	5	0.012	0.079
Waste Management truck	1	7	94%	7	7	20	2	5	0.095	0.634
Hazardous Waste truck	1	7	94%	7	7	20	2	5	0.095	0.634
Transport Tractor Trailers truck	1	7	94%	7	7	20	2	5	0.095	0.634
Water Delivery Trucks	10	7	94%	7	66	11.7	8	30	0.042	0.283
Hydrogen Delivery Trucks	1	7	94%	7	7	20	8	3	0.095	0.634

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Washing Vehicle	0%	0%	12.51	12.51	100.10	100.10	47.45%	18.02	18.02	1.86	1.86	14.92	14.92	2.69	2.69
LRU Maintenance Truck with Boom	0%	0%	5.33	5.33	42.62	42.62	20.20%	7.67	7.67	0.79	0.79	6.34	6.34	1.14	1.14
Staff & Security Truck	0%	0%	0.33	0.33	7.89	7.89	3.74%	1.42	1.42	0.05	0.05	1.09	1.09	0.20	0.20
Rubber-wheeled forklift with telescoping boom	0%	0%	0.21	0.21	1.69	1.69	0.80%	0.30	0.30	0.03	0.03	0.24	0.24	0.04	0.04
Forklift	0%	0%	0.07	0.07	0.55	0.55	0.26%	0.10	0.10	0.01	0.01	0.08	0.08	0.01	0.01
Telescoping Man Lift	0%	0%	0.45	0.45	3.64	3.64	1.73%	0.66	0.66	0.06	0.06	0.52	0.52	0.09	0.09
Staff Cars	0%	0%	7.74	7.74	15.48	15.48	7.34%	2.79	2.79	1.05	1.05	2.10	2.10	0.38	0.38
Van Pooling	0%	0%	0.93	0.93	1.85	1.85	0.88%	0.33	0.33	0.13	0.13	0.27	0.27	0.05	0.05
Visitor Cars	0%	0%	0.16	0.16	1.29	1.29	0.61%	0.17	0.17	0.02	0.02	0.17	0.17	0.02	0.02
Operations and Maintenance Supplies truck	0%	0%	0.26	0.26	0.52	0.52	0.25%	0.02	0.02	0.04	0.04	0.08	0.08	0.00	0.00
Waste Management truck	0%	0%	2.09	2.09	4.17	4.17	1.98%	0.13	0.13	0.31	0.31	0.62	0.62	0.02	0.02
Hazardous Waste truck	0%	0%	2.09	2.09	4.17	4.17	1.98%	0.13	0.13	0.31	0.31	0.62	0.62	0.02	0.02
Transport Tractor Trailers truck	0%	0%	2.09	2.09	4.17	4.17	1.98%	0.13	0.13	0.31	0.31	0.62	0.62	0.02	0.02
Water Delivery Trucks	0%	0%	2.33	2.33	18.65	18.65	8.84%	3.36	3.36	0.35	0.35	2.78	2.78	0.50	0.50
Hydrogen Delivery Trucks	0%	0%	0.52	0.52	4.17	4.17	1.98%	0.08	0.08	0.08	0.08	0.62	0.62	0.01	0.01
TOTAL Fugitive emissions for vehicles traveled on sealed road (paved)			**37.10**	**37.10**	**210.96**	**210.96**		**35.28**	**35.28**	**5.41**	**5.41**	**31.07**	**31.07**	**5.19**	**5.19**

Travel on paved road

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$

EPA AP-42 Section 13.2.1 Paved Roads Equation 1
E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
sL = road surface silt loading (grams per square meter) (g/m^2), use more representative numbers from CARB - Emission Inventory Database - Section 7.8 SJV - Entrained Paved Road Dust - Rural Roads (emission inventory
1.6 code: 640-643-5400-0000), June 2006.
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on paved road	Max Daily Distance per Vehicle to drive on paved road (mile/day)	Max Daily VMT (all units)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Washing Vehicle	50	6.8	0%	0	0	12	8	30	0.016	0.109
LRU Maintenance Truck with Boom	28	6.8	0%	0	0	10	8	30	0.012	0.082
Staff & Security Truck	7	48	0%	0	0	2.25	24	30	0.001	0.008
Rubber-wheeled forklift with telescoping boom	3	10	0%	0	0	4	8	30	0.003	0.021
Forklift	3	10	50%	5	15	3	8	30	0.002	0.013
Telescoping Man Lift	10	10	0%	0	0	3	8	30	0.002	0.013
Staff Cars	120	7	6%	0.42	50	2	2	30	0.001	0.007
Van Pooling	5	7	6%	0.42	2	4	2	30	0.003	0.021
Visitor Cars	10	7	6%	0.42	4	2	8	22	0.001	0.007
Operations and Maintenance Supplies truck	1	7	6%	0.42	0	5	2	5	0.004	0.029
Waste Management truck	1	7	6%	0.42	0	20	2	5	0.035	0.234
Hazardous Waste truck	1	7	6%	0.42	0	20	2	5	0.035	0.234
Transport Tractor Trailers truck	1	7	6%	0.42	0	20	2	5	0.035	0.234
Water Delivery Trucks	10	7	6%	0.42	4	11.7	8	30	0.015	0.104
Hydrogen Delivery Trucks	1	7	6%	0.42	0	20	8	3	0.035	0.234

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]		Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]
Washing Vehicle	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LRU Maintenance Truck with Boom	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber-wheeled forklift with telescoping boom	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forklift	0%	0%	0.02	0.02	0.20	0.20	13.48%	0.04	0.04	0.00	0.00	0.03	0.03	0.00	0.00
Telescoping Man Lift	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff Cars	0%	0%	0.18	0.18	0.35	0.35	23.93%	0.06	0.06	0.02	0.02	0.04	0.04	0.01	0.01
Van Pooling	0%	0%	0.02	0.02	0.04	0.04	2.94%	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Visitor Cars	0%	0%	0.00	0.00	0.03	0.03	1.99%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operations and Maintenance Supplies truck	0%	0%	0.01	0.01	0.01	0.01	0.83%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste Management truck	0%	0%	0.05	0.05	0.10	0.10	6.71%	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Hazardous Waste truck	0%	0%	0.05	0.05	0.10	0.10	6.71%	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Transport Tractor Trailers truck	0%	0%	0.05	0.05	0.10	0.10	6.71%	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Water Delivery Trucks	0%	0%	0.05	0.05	0.44	0.44	29.97%	0.08	0.08	0.01	0.01	0.06	0.06	0.01	0.01
Hydrogen Delivery Trucks	0%	0%	0.01	0.01	0.10	0.10	6.71%	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
TOTAL Fugitive emissions for vehicles traveled on paved road			**0.45**	**0.45**	**1.46**	**1.46**		**0.20**	**0.20**	**0.06**	**0.06**	**0.20**	**0.20**	**0.03**	**0.03**

on-site fugitive

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Max. Operating Hours / Day	Assumed distance percentage to drive on sealed road (paved)	Assumed distance percentage to drive on paved road	Sealed Road - PM_{10} Fugitive Emissions (lb/day)	Paved Road - PM_{10} Fugitive Emissions (lb/day)	Total PM_{10} Fugitive Emissions (lb/day)
Washing Vehicle	50	6.8	8	100%	0%	100.10	0.00	100.10
LRU Maintenance Truck with Boom	28	6.8	8	100%	0%	42.62	0.00	42.62
Staff & Security Truck	7	48	24	100%	0%	7.89	0.00	7.89
Rubber-wheeled forklift with telescoping boom	3	10	8	100%	0%	1.69	0.00	1.69
Forklift	3	10	8	50%	50%	0.55	0.20	0.74
Telescoping Man Lift	10	10	8	100%	0%	3.64	0.00	3.64
Staff Cars	120	7	2	94%	6%	15.48	0.35	15.83
Van Pooling	5	7	2	94%	6%	1.85	0.04	1.89
Visitor Cars	10	7	8	94%	6%	1.29	0.03	1.32
Operations and Maintenance Supplies truck	1	7	2	94%	6%	0.52	0.01	0.53
Waste Management truck	1	7	2	94%	6%	4.17	0.10	4.27
Hazardous Waste truck	1	7	2	94%	6%	4.17	0.10	4.27
Transport Tractor Trailers truck	1	7	2	94%	6%	4.17	0.10	4.27
Water Delivery Trucks	10	7	8	94%	6%	18.65	0.44	19.09
Hydrogen Delivery Trucks	1	7	8	94%	6%	4.17	0.10	4.27
						210.96	**1.46**	**212.43**

Calico Solar- Operation and Maintenance Equipment Emissions (off-site)

Emission Factors For Combustion Exhaust Emissions

Equipment Description	Horse-power	Vehicle Weight (lbs)	Fuel	Emission Factors (unit: g/mile or g/idle-hr for on-road vehicle and lb/hr for off-road equipment) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle													
Washing Vehicle (running)	driving on-site only												
Washing Vehicle (idling)													
LRU Maintenance Truck with Boom (running)													
LRU Maintenance Truck with Boom (idling)													
Staff & Security Truck													
Staff Cars	100	4,000	Gasoline & diesel	0.032	0.018	1.607	0.043	0.186	0.003	289.288	0.070	0.065	310.82
Van Pooling	150	8,000	Gasoline	0.025	0.011	0.492	0.006	0.040	0.005	496.468	0.016	0.010	499.93
Visitor Cars	100	4,000	Gasoline & diesel	0.032	0.018	1.607	0.043	0.186	0.003	289.288	0.070	0.065	310.82
Operations and Maintenance Supplies truck	200	10,000	Diesel	0.046	0.028	0.488	0.083	3.056	0.005	519.299	0.005	0.005	520.89
Waste Management truck	250	40,000	Diesel	0.377	0.309	2.210	0.445	8.854	0.016	1670.679	0.005	0.005	1672.27
Hazardous Waste truck	250	40,000	Diesel	0.377	0.309	2.210	0.445	8.854	0.016	1670.679	0.005	0.005	1672.27
Transport Tractor Trailers truck	250	40,000	Diesel	0.377	0.309	2.210	0.445	8.854	0.016	1670.679	0.005	0.005	1672.27
Water Delivery Trucks	300	23,400	Diesel	0.169	0.141	1.245	0.121	4.891	0.014	1505.000	0.005	0.005	1672.27
Hydrogen Delivery Trucks	250	40,000	Diesel	0.377	0.309	2.210	0.445	8.854	0.016	1670.679	0.005	0.005	1672.27
Off-road Equipment													
Rubber-wheeled forklift with telescoping boom	driving on-site only												
Forklift													
Telescoping Man Lift													

Note:

1. Vehicle description in EMFAC2007 model
   - Staff Car is Passenger Cars (LDA-ALL)
   - Van Pooling is Medium-Duty Trucks (MDV-CAT)
   - Visitor Cars is Passenger Cars (LDA-ALL)
   - Operations and Maintenance Supplies Delivery Truck is Light-Heavy-Duty (LHD1-DSL)
   - Waste Management Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
   - Hazardous Waste Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
   - Transport Tractor Trailer is Heavy-Heavy-Duty (HHD-DSL)
   - Water Delivery Truck is Medium-Heavy-Duty (MHD-DSL)
   - Hydrogen Delivery Truck is Heavy-Heavy-Duty (HHD-DSL)
2. PM emission factors determined using guidance from SCAQMD Final - Methodology to Calculate PM_{10} and $PM_{2.5}$ Significance Thresholds 10/1/2006, Appendix A - Updated CEIDARS Table with $PM_{2.5}$ Fractions

   On-road vehicles
   - $PM_{2.5}$ Fraction of PM_{10}, Brake wear: 0.429
   - $PM_{2.5}$ Fraction of PM_{10}, Diesel: 0.920
   - $PM_{2.5}$ Fraction of PM_{10}, Gasoline-catalyst: 0.928
   - $PM_{2.5}$ Fraction of PM_{10}, Tire wear: 0.250
   - Assume $PM_{2.5}$ and PM_{10} Fraction of total PM for gasoline hybrid car is: 1.000
3. CO_2 emission factors for gasoline and diesel fuel on-road vehicles are from EMFAC2007 model.
4. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009
5. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)
   - CO_2 GWP (SAR, 1996) = 1
   - CH_4 GWP (SAR, 1996) = 21
   - N_2O GWP (SAR, 1996) = 310

Daily Emissions For Combustion Exhaust Emissions

Equipment Description	No. Of Units	Max Daily Distance per Vehicle within MDAQMD jurisdictional area (mile/day)	Max Daily VMT (all units)	Max. Daily Emissions (lb/day) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle													
Washing Vehicle (running)	driving on-site only												
Washing Vehicle (idling)													
LRU Maintenance Truck with Boom (running)													
LRU Maintenance Truck with Boom (idling)													
Staff & Security Truck													
Staff Cars	120	74.0	8,880	0.63	0.35	31.43	0.84	3.64	0.06	5,658.32	1.38	1.27	6,079.54
Van Pooling	5	74.0	370	0.02	0.01	0.40	0.00	0.03	0.00	404.61	0.01	0.01	407.43
Visitor Cars	10	74.0	740	0.05	0.03	2.62	0.07	0.30	0.00	471.53	0.11	0.11	506.63
Operations and Maintenance Supplies truck	1	124.0	124	0.01	0.01	0.13	0.02	0.83	0.00	141.83	0.00	0.00	142.27
Waste Management truck	1	130.0	130	0.11	0.09	0.63	0.13	2.54	0.00	478.39	0.00	0.00	478.85
Hazardous Waste truck	1	156.0	156	0.13	0.11	0.76	0.15	3.04	0.01	574.07	0.00	0.00	574.61
Transport Tractor Trailers truck	1	124.0	124	0.10	0.08	0.60	0.12	2.42	0.00	456.31	0.00	0.00	456.74
Water Delivery Trucks	10	128.0	1,280	0.48	0.40	3.51	0.34	13.79	0.04	4,243.17	0.01	0.01	4,714.78
Hydrogen Delivery Trucks	1	160.0	160	0.13	0.11	0.78	0.16	3.12	0.01	588.79	0.00	0.00	589.35
Off-road Equipment													
Rubber-wheeled forklift with telescoping boom	driving on-site only												
Forklift													
Telescoping Man Lift													
Max. Daily Emissions Total (lb/day)				**1.66**	**1.18**	**40.87**	**1.84**	**29.71**	**0.13**	**13,017.01**	**1.53**	**1.40**	**13,950.20**

Hourly Emissions For Combustion Exhaust Emissions

Equipment Description	Max. Operating Hours / Day	Max. Hourly Emissions (lb/hr) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle											
Washing Vehicle (running)	driving on-site only										
Washing Vehicle (idling)											
LRU Maintenance Truck with Boom (running)											
LRU Maintenance Truck with Boom (idling)											
Staff & Security Truck											
Staff Cars	2	0.313	0.174	15.716	0.421	1.819	0.029	2,829.160	0.688	0.633	3,039.771
Van Pooling	2	0.010	0.005	0.200	0.002	0.016	0.002	202.305	0.006	0.004	203.715
Visitor Cars	8	0.007	0.004	0.327	0.009	0.038	0.001	58.941	0.014	0.013	63.329
Operations and Maintenance Supplies truck	2	0.006	0.004	0.067	0.011	0.417	0.001	70.917	0.001	0.001	71.135
Waste Management truck	2	0.054	0.044	0.316	0.064	1.268	0.002	239.194	0.001	0.001	239.423
Hazardous Waste truck	2	0.065	0.053	0.380	0.076	1.521	0.003	287.033	0.001	0.001	287.307
Transport Tractor Trailers truck	2	0.051	0.042	0.302	0.061	1.209	0.002	228.154	0.001	0.001	228.372
Water Delivery Trucks	8	0.060	0.050	0.439	0.043	1.724	0.005	530.396	0.002	0.002	589.348
Hydrogen Delivery Trucks	8	0.017	0.014	0.097	0.020	0.390	0.001	73.598	0.000	0.000	73.668
Off-road Equipment											
Rubber-wheeled forklift with telescoping boom	driving on-site only										
Forklift											
Telescoping Man Lift											
Max. Hourly Emissions Total (lb/hour)		**0.58**	**0.39**	**17.84**	**0.71**	**8.40**	**0.05**	**4,519.70**	**0.71**	**0.65**	**4,796.07**

Yearly Emissions For Combustion Exhaust Emissions

Equipment Description	Max. Operating Days / Month	Max. Annual Emissions (ton/year) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_x	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-road Vehicle											
Washing Vehicle (running)	driving on-site only										
Washing Vehicle (idling)											
LRU Maintenance Truck with Boom (running)											
LRU Maintenance Truck with Boom (idling)											
Staff & Security Truck											
Staff Cars	30	0.11	0.06	5.66	0.15	0.65	0.01	1,018.50	0.25	0.23	1,094.32
Van Pooling	30	0.00	0.00	0.07	0.00	0.01	0.00	72.83	0.00	0.00	73.34
Visitor Cars	22	0.01	0.00	0.35	0.01	0.04	0.00	62.24	0.02	0.01	66.87
Operations and Maintenance Supplies truck	5	0.00	0.00	0.00	0.00	0.03	0.00	4.26	0.00	0.00	4.27
Waste Management truck	5	0.00	0.00	0.02	0.00	0.08	0.00	14.35	0.00	0.00	14.37
Hazardous Waste truck	5	0.00	0.00	0.02	0.00	0.09	0.00	17.22	0.00	0.00	17.24
Transport Tractor Trailers truck	5	0.00	0.00	0.02	0.00	0.07	0.00	13.69	0.00	0.00	13.70
Water Delivery Trucks	30	0.09	0.07	0.63	0.06	2.48	0.01	763.77	0.00	0.00	848.66
Hydrogen Delivery Trucks	3	0.00	0.00	0.01	0.00	0.06	0.00	10.60	0.00	0.00	10.61
Off-road Equipment											
Rubber-wheeled forklift with telescoping boom	driving on-site only										
Forklift											
Telescoping Man Lift											
Max. Annual Emissions Total (ton/year)		**0.22**	**0.15**	**6.79**	**0.24**	**3.50**	**0.02**	**1,977.46**	**0.27**	**0.25**	**2,143.37**

Calico Solar
Fugitive Dust Emissions (off-site)

Travel on paved road

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
0.32 sL = road surface silt loading (grams per square meter) (g/m^2), From CARB - Emission Inventory Database - Section 7.9 Entrained Paved Road Dust - Local Streets (emission inventory code: 640-641-5400-0000)
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on paved road	Max Daily Distance per Vehicle to drive on paved road (mile/day)	Max Daily VMT (all units)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Washing Vehicle	driving on-site only									
LRU Maintenance Truck with Boom										
Staff & Security Truck										
Rubber-wheeled forklift with telescoping boom										
Forklift										
Telescoping Man Lift										
Staff Cars	120	74.0	100%	74	8880	2	2	30	0.000	0.002
Van Pooling	5	74.0	100%	74	370	4	2	30	0.001	0.007
Visitor Cars	10	74.0	100%	74	740	2	8	22	0.000	0.002
Operations and Maintenance Supplies truck	1	124.0	100%	124	124	5	2	5	0.001	0.010
Waste Management truck	1	130.0	100%	130	130	20	2	5	0.012	0.082
Hazardous Waste truck	1	156.0	100%	156	156	20	2	5	0.012	0.082
Transport Tractor Trailers truck	1	124.0	100%	124	124	20	2	5	0.012	0.082
Water Delivery Trucks	10	128.0	100%	128	1280	11.7	8	30	0.005	0.036
Hydrogen Delivery Trucks	1	160.0	100%	160	160	20	8	3	0.012	0.082

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]		Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]	Unmitigated	Mitigated[7]
Washing Vehicle	driving on-site only														
LRU Maintenance Truck with Boom															
Staff & Security Truck															
Rubber-wheeled forklift with telescoping boom															
Forklift															
Telescoping Man Lift															
Staff Cars	0%	0%	9.51	9.51	19.02	19.02	16.17%	3.42	3.42	0.16	0.16	0.32	0.32	0.06	0.06
Van Pooling	0%	0%	1.28	1.28	2.55	2.55	2.17%	0.46	0.46	0.14	0.14	0.28	0.28	0.05	0.05
Visitor Cars	0%	0%	0.20	0.20	1.59	1.59	1.35%	0.21	0.21	0.00	0.00	0.03	0.03	0.00	0.00
Operations and Maintenance Supplies truck	0%	0%	0.61	0.61	1.22	1.22	1.04%	0.04	0.04	0.07	0.07	0.15	0.15	0.00	0.00
Waste Management truck	0%	0%	5.32	5.32	10.65	10.65	9.05%	0.32	0.32	0.78	0.78	1.56	1.56	0.05	0.05
Hazardous Waste truck	0%	0%	6.39	6.39	12.78	12.78	10.86%	0.38	0.38	0.94	0.94	1.87	1.87	0.06	0.06
Transport Tractor Trailers truck	0%	0%	5.08	5.08	10.16	10.16	8.63%	0.30	0.30	0.74	0.74	1.49	1.49	0.04	0.04
Water Delivery Trucks	0%	0%	5.82	5.82	46.58	46.58	39.59%	8.38	8.38	0.83	0.83	6.62	6.62	1.19	1.19
Hydrogen Delivery Trucks	0%	0%	1.64	1.64	13.11	13.11	11.14%	0.24	0.24	0.24	0.24	1.92	1.92	0.03	0.03
TOTAL Fugitive emissions for vehicles traveled on paved road			**35.85**	**35.85**	**117.65**	**117.65**		**13.76**	**13.76**	**3.91**	**3.91**	**14.24**	**14.24**	**1.49**	**1.49**

off-site fugitive

Vehicle Type	No. Of Unit	Max Daily Distance per Vehicle (mile/day)	Max. Operating Hours / Day	Assumed distance percentage to drive on unpaved road	Assumed distance percentage to drive on paved road	Unpaved Road - PM_{10} Fugitive Emissions (lb/day)	Paved Road - PM_{10} Fugitive Emissions (lb/day)	Total PM_{10} Fugitive Emissions (lb/day)
Washing Vehicle								
LRU Maintenance Truck with Boom								
Staff & Security Truck								
Rubber-wheeled forklift with telescoping boom								
Forklift								
Telescoping Man Lift								
Staff Cars	120	74	2	0%	100%	0.00	19.02	19.02
Van Pooling	5	74	2	0%	100%	0.00	2.55	2.55
Visitor Cars	10	74	8	0%	100%	0.00	1.59	1.59
Operations and Maintenance Supplies truck	1	124	2	0%	100%	0.00	1.22	1.22
Waste Management truck	1	130	2	0%	100%	0.00	10.65	10.65
Hazardous Waste truck	1	156	2	0%	100%	0.00	12.78	12.78
Transport Tractor Trailers truck	1	124	2	0%	100%	0.00	10.16	10.16
Water Delivery Trucks	10	128	8	0%	100%	0.00	46.58	46.58
Hydrogen Delivery Trucks	1	160	8	0%	100%	0.00	13.11	13.11
						0.00	**117.65**	**117.65**

driving on-site only

Attachment AQ-3a
Operation and Construction Overlap Emissions for Rail Transport
(Jan. 26, 2010)

Calico Solar

Construction Trade Projection (850 MW)

Discipline	Hours	Month After Construction Start																																										Highest Per Day Requirement by Solar One During Project
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
Carpenters	83,472	10	14	31	31	31	43	47	40	36	28	28	28	21	11	11	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	47
Concrete Crews	81,008	9	15	29	29	29	46	46	42	36	24	24	24	21	11	11	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	46
Electricians	212,010	17	28	57	57	57	84	84	60	54	54	54	54	69	69	113	105	105	88	48	48	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0	0	0	0	0	0	113
Ironworkers	100,330	19	23	41	41	41	44	48	36	32	24	24	24	36	26	26	25	25	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	48
Laborers	153,557	17	43	65	62	62	142	142	68	30	30	30	30	56	41	51	46	46	32	22	17	17	17	17	17	17	17	17	10	10	10	10	10	10	10	10	0	0	0	0	0	142
Miscellaneous Crews	10,000	0	0	0	0	0	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Operators	205,183	25	82	93	75	75	86	86	72	59	51	51	51	84	88	67	61	52	34	34	27	26	25	25	25	25	25	25	2	2	2	2	2	2	2	2	1	1	1	0	0	93
Plumbers	25,040	0	5	9	9	9	22	26	26	22	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Solar One Technicians	145,920	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
SunCatcher Assemblers	371,200	0	0	0	0	0	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
SunCatcher Electricians	92,800	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
SunCatcher Ironworkers	185,600	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
SunCatcher Laborers	58,880	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	16	16	16	16	16	16	16	16	16
SunCatcher Material Handlers	92,800	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
SunCatcher Operators	29,440	0	0	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8	8	8	8	8	8
SunCatcher Teamsters	44,160	0	0	0	0	0	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	12	12	12	12	12	12
SunCatcher Technicians	185,600	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Teamsters	65,160	4	60	49	24	24	25	25	7	5	5	5	5	31	53	29	28	26	24	24	4	4	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	0	60
Technicians	3,504	0	0	0	0	0	5	5	5	5	5	5	5	5	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Totals	**2,145,664**	**101**	**270**	**374**	**328**	**328**	**719**	**731**	**578**	**501**	**457**	**457**	**457**	**535**	**512**	**521**	**498**	**487**	**420**	**370**	**339**	**314**	**312**	**312**	**312**	**312**	**312**	**312**	**249**	**249**	**249**	**249**	**249**	**285**	**285**	**285**	**230**	**230**	**230**	**230**	**228**	**228**	**818**

Source: Bureau of Labor Statistics, 2008.

Note:

N/A = not applicable

14645 total personnel for 41 months
357 avg monthly personnel
731 max monthly personnel

Data from Appendix V Solar 1
Note does not match Solar 1 Table 3-15 from AFC

Calico Solar
Construction Equipment Projection (850 MW)

| Construction Equipment Description | HP | D | G | P | Month After Construction Start (number of equipment per day) | | |

Calico Solar

Description	Activity	Make / Model	Fuel	Quantity per day per month	Frequency	Horse-power	Vehicle Weight (tons)	Max Daily Onsite Distance per Vehicle (mile/day)	Assumed distance percentage to drive on onsite sealed roads	Assumed distance percentage to drive on onsite unpaved roads	Assumed distance percentage to drive on onsite paved roads	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD jurisdictional area (mile/day)	Offsite Travel to and from	Onsite Travel description
Concrete Delivery Truck for general construction			Diesel	variable - from construction equipment schedule	Daily	250	20	7	90%	10%	0%	74	Barstow	most concrete will be delivered to the MSC area
Concrete Delivery Truck for bridge			Diesel	variable - from construction equipment schedule	Daily	250	20	1.6	90%	10%	0%	74	Barstow	most concrete will be delivered to the bridge construction area
Concrete Pump Truck for bridge			Diesel	variable - from construction equipment schedule	Daily	250	20	0.1	90%	10%	0%	0	on-site only	concrete pump will be used mostly in the MSC area
Dump Truck			Diesel	variable - from construction equipment schedule	Daily	250	20	6.8	50%	50%	0%	0	on-site only	from the MSC area to the any construction area of the site
Flatbed Truck			Diesel	variable - from construction equipment schedule	Daily	250	10	27.2	100%	0%	0%	0	on-site only	delivers materials to installation location
Staff & Security Truck	Site Inspections & Security	Toyota Highlander or similar	Gasoline - Hybrid	6	Daily	187	2.25	48	100%	0%	0%	0	on-site only	travels mainly perimeter and main access road
Pickup Truck			Gasoline	variable - from construction equipment schedule	Daily	175	4	6.8	95%	5%	0%	0	on-site only	from the MSC area to the any construction area of the site
Water/Soiltac Truck			Diesel	variable - from construction equipment schedule	Daily	250	20	13.6	25%	75%	0%	0	on-site only	from the MSC area to the any construction area of the site
General Materials Delivery Truck for general construction	General Construction Materials	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	7	100%	0%	0%	74	Barstow	most materials will be delivered to the MSC area
General Materials Delivery Truck for bridge	General Construction Materials	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	1.6	100%	0%	0%	74	Barstow	most materials will be delivered to the bridge construction area
Suncatcher Delivery Trucks	Suncatcher Pedestals	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	7	50%	50%	0%	200	Phoenix	delivers pedestals to installation location
	Stirling Engines	transport truck	Diesel	6	Daily	250	20	7	100%	0%	0%	160	railroad from Detroit to LA and then tranported by truck	delivers materials to MSC
	Suncatcher Metal Supports	transport truck	Diesel	11	Daily	250	20	7	100%	0%	0%	180	from near Phoenix or Los Angeles area.	delivers materials to MSC
	Suncatcher Mirrors	transport truck	Diesel	7	Daily	250	20	7	100%	0%	0%	160	railroad from Detroit to LA and then tranported by truck	delivers materials to MSC
	Electrical and Control Systems	transport truck	Diesel	2	Daily	250	20	7	100%	0%	0%	200	Phoenix	delivers materials to MSC
	Azimuth and Elevation Drive	transport truck	Diesel	2	Daily	250	20	7	100%	0%	0%	160	railroad from Midwest to LA and then tranported by truck	delivers materials to MSC
Water Delivery Trucks	All onsite water will be delivered by train and truck	3700 gal truck	Diesel	39	Daily	300	11.7	6	100%	0%	0%	0	on-site only	delivers water from on-site train station to tanks in MSC
Worker Passenger Vehicles	Community to Work	Passenger vehicles	Gasoline & diesel	variable - from construction equipment schedule	Daily	100	2	9	100%	0%	0%	74	Barstow	half to MSC and the other half to the main laydown area
BNSF Locomotive Engine	All onsite water will be delivered by train and truck	GE Dash-9, GE ES44, or equivalent	Diesel	1	Daily	4400	220	8	0%	0%	0%	120	Cadiz Well	delivers water to on-site train station

Note:

1. Vehicles with variable quantities, the quantity per month can be found in Construction Equipment Projection
2. The average distance from the Project site entrance to bridge construction area, MSC, and the main laydown area is about 0.8, 3.5, and 5.5 miles, one-way, respectively.
3. The average distance between the MSC and the main laydown area is about 2 miles.
4. The fenceline perimeter is approximately 30 miles. Each security vehicle is assumed to travel from the MSC around the perimeter plus one trip to the center of north fenced property (1.8 miles) and the center of south fenced property (5 miles) and back (and plus additional 10% for misc trips) = approximately 48 miles.
5. Average distance from main service complex to center of north and south portion of the site is 1.8 and 5 miles, respectively. Thus, the average round trip distance for each dump truck, pickup truck, and concrete pump truck travels is 6.8 [=(1.8+5)/2*2] miles.
6. The on-site water is assumed to be tranported from Cadiz Well to on-site train station via existing BNSF train (1 train per day) and from on-site train station to MSC water tanks via trucks.
7. One 4400 hp engine (GE Dash-9, GE ES44, or equivalent) is assumed to be added as an additional engine on the existing train to provide enough power hauling the required water rail cars.
8. The distance for water delivery train travels was provided by the applicant (about 64 miles one way trip from Cadiz well to on-site train station).
9. The distance from the Project site to Barstow is about 37 miles.
10. Deliveries coming from Detroit will travel by rail to Los Angeles then by transport truck to the site.
11. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Los Angeles is about 80 miles.
12. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Phoenix is about 100 miles.
13. On-site travelling:

    Delivery Trucks: mostly from the Project site entrance to the MSC (3.5 miles).

    Worker Passenger Vehicles: from the Project site entrance to either the laydown area in the MSC (3.5 miles) or the main laydown area (5.5 miles).

    Concrete Pump Trucks: mostly in the bridge construction area (traveling less than 0.1 miles per day).

    Flatbed Truck: assumed to make 4 trips per day to SunCatcher installation locations delivering assembled dishes and misc parts

    Water/Soiltac Truck: assumed to make 2 trips per day to SunCatcher instalation locations to watering or seaing the soiltac product.

    BNSF Train: from east of the site to the train station in the middle of the site (4 miles).

    Water Truck: from the train station to water tanks at MSC (3 miles).

    Construction laydown area is sealed

Calico Solar
Combustion Exhaust Emissions On-site (short-term)
month 67

construction schedule = 12 hours per day 7 am to 7 pm pedestal installation = 16 hours per day
delivery trucks can arrive at the site anytime during the day or night

EMISSION FACTORS

Equipment	Load Factor	Hours/Day	Horsepower	Emission factors (ton/hr) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Emission rate per piece of equipment (lb/hr) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																							
Air Compressor	0.48	6	50	1.33E-05	1.23E-05	1.42E-04	5.88E-05	1.20E-04	1.44E-07	1.11E-02	5.31E-06	0.00E+00	1.12E-02	2.67E-02	2.46E-02	2.83E-01	1.18E-01	2.39E-01	2.88E-04	2.23E+01	1.06E-02	0.00E+00	2.25E+01
Asphalt Paver	0.59	7	120	4.26E-05	3.92E-05	2.61E-04	8.18E-05	4.84E-04	4.05E-07	3.46E-02	7.38E-06	0.00E+00	3.47E-02	8.52E-02	7.84E-02	5.22E-01	1.64E-01	9.68E-01	8.11E-04	6.91E+01	1.48E-02	0.00E+00	6.94E+01
Backhoe	0.47	6	120	2.57E-05	2.37E-05	1.81E-04	4.54E-05	2.83E-04	3.03E-07	2.58E-02	4.10E-06	0.00E+00	2.59E-02	5.14E-02	4.73E-02	3.62E-01	9.08E-02	5.66E-01	6.06E-04	5.17E+01	8.19E-03	0.00E+00	5.19E+01
Compactor	0.47	6	120	3.20E-05	2.95E-05	2.09E-04	6.00E-05	3.69E-04	3.46E-07	2.95E-02	5.41E-06	0.00E+00	2.96E-02	6.41E-02	5.89E-02	4.17E-01	1.20E-01	7.38E-01	6.91E-04	5.89E+01	1.08E-02	0.00E+00	5.92E+01
Crane small	0.43	5	175	2.69E-05	2.47E-05	2.44E-04	6.05E-05	4.65E-04	4.52E-07	4.01E-02	5.46E-06	0.00E+00	4.03E-02	5.38E-02	4.95E-02	4.88E-01	1.21E-01	9.29E-01	9.03E-04	8.03E+01	1.09E-02	0.00E+00	8.05E+01
Crane large	0.43	7	500	3.42E-05	3.15E-05	3.31E-04	9.10E-05	8.85E-04	8.83E-07	9.00E-02	8.21E-06	0.00E+00	9.01E-02	6.85E-02	6.30E-02	6.62E-01	1.82E-01	1.77E+00	1.77E-03	1.80E+02	1.64E-02	0.00E+00	1.80E+02
Dozer	0.59	7	250	3.92E-05	3.61E-05	2.87E-04	1.03E-04	9.71E-04	9.34E-07	8.30E-02	9.25E-06	0.00E+00	8.32E-02	7.84E-02	7.21E-02	5.74E-01	2.05E-01	1.94E+00	1.87E-03	1.66E+02	1.85E-02	0.00E+00	1.66E+02
Generator	0.74	9	50	1.43E-05	1.32E-05	1.46E-04	5.65E-05	1.54E-04	1.98E-07	1.53E-02	5.10E-06	0.00E+00	1.54E-02	2.86E-02	2.63E-02	2.92E-01	1.13E-01	3.07E-01	3.96E-04	3.06E+01	1.02E-02	0.00E+00	3.08E+01
Grader	0.58	7	175	3.91E-05	3.60E-05	3.70E-04	8.70E-05	6.76E-04	6.97E-07	6.19E-02	7.85E-06	0.00E+00	6.21E-02	7.82E-02	7.19E-02	7.40E-01	1.74E-01	1.35E+00	1.39E-03	1.24E+02	1.57E-02	0.00E+00	1.24E+02
Light Tower	0.62	7	50	1.31E-05	1.21E-05	1.46E-04	5.16E-05	1.39E-04	1.81E-07	1.40E-02	4.66E-06	0.00E+00	1.41E-02	2.63E-02	2.42E-02	2.93E-01	1.03E-01	2.78E-01	3.62E-04	2.80E+01	9.31E-03	0.00E+00	2.82E+01
Loader	0.54	6	250	2.81E-05	2.59E-05	2.10E-04	7.46E-05	7.67E-04	8.37E-07	7.44E-02	6.73E-06	0.00E+00	7.46E-02	5.63E-02	5.18E-02	4.21E-01	1.49E-01	1.53E+00	1.67E-03	1.49E+02	1.35E-02	0.00E+00	1.49E+02
Maxi Sneeker (Trencher)	0.70	8	50	2.02E-05	1.86E-05	2.18E-04	9.18E-05	1.81E-04	2.13E-07	1.64E-02	8.28E-06	0.00E+00	1.66E-02	4.05E-02	3.72E-02	4.36E-01	1.84E-01	3.62E-01	4.25E-04	3.29E+01	1.66E-02	0.00E+00	3.32E+01
Skid Steer (Bobcat)	0.62	7	50	1.08E-05	9.96E-06	1.25E-04	3.92E-05	1.23E-04	1.65E-07	1.27E-02	3.54E-06	0.00E+00	1.28E-02	2.17E-02	1.99E-02	2.50E-01	7.84E-02	2.46E-01	3.30E-04	2.55E+01	7.07E-03	0.00E+00	2.56E+01
Welding Machine	0.45	5	50	1.45E-05	1.33E-05	1.52E-04	6.22E-05	1.36E-04	1.68E-07	1.30E-02	5.62E-06	0.00E+00	1.31E-02	2.90E-02	2.67E-02	3.04E-01	1.24E-01	2.73E-01	3.35E-04	2.59E+01	1.12E-02	0.00E+00	2.62E+01
Equipment fueled with Propane				Emission factors (ton/hr)																			
Aerial Lift	0.51	6	120	1.39E-06	1.39E-06	7.09E-04	2.48E-06	1.02E-04	0.00E+00	1.56E-02	2.08E-05	0.00E+00	1.61E-02	2.78E-03	2.78E-03	1.42E+00	4.95E-03	2.03E-01	0.00E+00	3.12E+01	4.15E-02	0.00E+00	3.21E+01
Fork Lift	0.30	4	50	8.14E-07	8.14E-07	1.48E-04	1.41E-06	6.05E-05	0.00E+00	9.15E-03	1.18E-05	0.00E+00	9.40E-03	1.63E-03	1.63E-03	2.95E-01	2.82E-03	1.21E-01	0.00E+00	1.83E+01	2.36E-02	0.00E+00	1.88E+01
Telehandler	0.51	6	120	1.39E-06	1.39E-06	7.09E-04	2.48E-06	1.02E-04	0.00E+00	1.56E-02	2.08E-05	0.00E+00	1.61E-02	2.78E-03	2.78E-03	1.42E+00	4.95E-03	2.03E-01	0.00E+00	3.12E+01	4.15E-02	0.00E+00	3.21E+01

Vehicles with Onroad Engines for Emissions Estimates	Onsite Miles per Day Travelled per Vehicle	Hours/Day	Vehicle Weight (lbs)	Emission factors (g/mile) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Concrete Delivery Truck for general construction	7	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.18E-03	1.95E-03	1.61E-02	7.59E-03	3.58E-02	3.85E-05	4.07E+00	6.55E-06	6.17E-06	4.07E+00
Concrete Delivery Truck for bridge	1.6	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	4.98E-04	4.47E-04	3.67E-03	1.73E-03	8.18E-03	8.81E-06	9.30E-01	1.50E-06	1.41E-06	9.30E-01
Concrete Pump Truck for bridge	0.1	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-05	2.79E-05	2.29E-04	1.08E-04	5.11E-04	5.51E-07	5.81E-02	9.36E-08	8.81E-08	5.81E-02
Dump Truck	6.8	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.11E-03	1.90E-03	1.56E-02	7.37E-03	3.48E-02	3.74E-05	3.95E+00	6.37E-06	5.99E-06	3.95E+00
Flatbed Truck	27.2	12	20,000	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	2.90E-03	2.59E-03	2.61E-02	2.26E-03	4.65E-02	6.99E-05	7.51E+00	5.49E-06	8.49E-06	7.52E+00
Staff & Security Truck	48	24	4,500	1.00E-02	1.00E-02	2.10E+00	5.50E-02	3.00E-02	9.00E-03	3.26E+02	1.04E-01	8.13E-02	3.54E+02	4.41E-05	4.41E-05	9.25E-03	2.42E-04	1.32E-04	3.96E-05	1.44E+00	4.56E-04	3.58E-04	1.56E+00
Pickup Truck	6.8	12	8,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	7.44E+02	8.99E-05	6.83E-05	6.29E-03	4.33E-04	5.87E-04	8.74E-06	9.01E-01	8.79E-05	8.08E-05	9.28E-01
Water/Soiltac Truck	13.6	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	4.23E-03	3.80E-03	3.12E-02	1.47E-02	6.96E-02	7.49E-05	7.90E+00	1.27E-05	1.20E-05	7.91E+00
General Materials Delivery Truck for general cons	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
General Materials Delivery Truck for bridge	1.6	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-04	2.23E-04	1.83E-03	8.67E-04	4.09E-03	4.41E-06	4.65E-01	7.49E-07	7.05E-07	4.65E-01
Suncatcher Pedestals Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Stirling Engines Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Suncatcher Metal Supports Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Suncatcher Mirrors Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Electrical and Control Systems Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Azimuth and Elevation Drive Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Water Delivery Trucks	6	24	23,400	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	3.19E-04	2.86E-04	2.88E-03	2.49E-04	5.13E-03	7.71E-06	8.29E-01	6.06E-07	9.36E-07	8.29E-01
Worker Passenger Vehicles	9	24	4,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	3.54E+02	5.95E-05	4.52E-05	4.16E-03	2.87E-04	3.88E-04	5.78E-06	5.96E-01	5.81E-05	5.34E-05	6.14E-01

Train	Load Factor	Hours/Day	Horsepower	Emission factors (g/bhp-hr) PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
BNSF Locomotive Engine (in motion)	0.087	0.53	4,400	2.36E-01	2.17E-01	1.28E+00	4.18E-01	7.93E+00	4.62E-03	4.88E+02	3.85E-02	1.25E-02	4.93E+02	1.99E-01	1.83E-01	1.08E+00	3.53E-01	6.69E+00	3.89E-03	4.11E+02	3.24E-02	1.05E-02	4.15E+02
BNSF Locomotive Engine (idling)	0.087	1	4,400	7.27E-03	6.69E-03	1.12E-01	1.09E-01	1.41E-01	4.62E-03	4.88E+02	3.85E-02	1.25E-02	4.93E+02	6.13E-03	5.64E-03	9.43E-02	9.16E-02	1.19E-01	3.89E-03	4.11E+02	3.24E-02	1.05E-02	4.15E+02

Notes:

1. Emission factors from CARB Off-road Mobile Source Emission Factors (2006-2020) for diesel and propane equipment. (2009 data used).
   Dozer = Crawler Tractor
   Loader = Rubber Tired Loader
   Backhoe = Tractors/Loaders/Backhoes
   Light Tower = Other Construction Equipment
2. Utilization Load Factors from SCAQMD
3. $PM_{2.5}$ emission factors obtained by multiplying the PM_{10} emissions by $PM_{2.5}$ fraction in SCAQMD CEIDARS list for onroad or offroad diesel vehicles.
4. For propane equipment assumed $PM_{2.5}$ and PM_{10} Fraction of total PM is 1.000
5. Onroad vehicle emissions from EMFAC2007 model. The vehicle description in EMFAC2007 model are as follows:
   - Flatbed Truck and Water Delivery Truck are Medium-Heavy-Duty (MHD-DSL).
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Worker Passenger Vehicle and Pickup Truck are Passenger Car (LDA-ALL)
   - Concrete Delivery Truck, Concrete Pump Truck, Dump Truck, Water/Soiltac Truck, General Materials Delivery Trucks, Suncatcher Pedestals Delivery Truck, Stirling Engines Delivery Truck, Suncatcher Metal Supports Delivery Truck, Suncatcher Mirrors Delivery Truck, Electrical and Control Systems Delivery Truck, and Azimuth & Elevation Drive Delivery Truck are all Heavy-Heavy-Duty (HHD-DSL)
6. The emissions of "Toyota Highlander Hybrid" (Staff & Security Truck) meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
7. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
8. Emission factors for locomotives are from EPA Emission Factors for Locomotives (for year 2009 large line haul engines) April 2009, EPA420-F-09-025 (http://www.epa.gov/OMS/regs/nonroad/locomotv/420f09025.pdf).
9. The average speed for train is assumed to be 15 mph on-site; the idling time at the on-site train station is assumed to be up to 1 hour (conservative) of the additional locomotive engine plus 3 (assumed) existing locomotive engines.
10. Locomotive SO_2 emission factors (for both in motion and idling) are calculated as follows:
    Based on CARB Statewide Rail Yard Agreement to Reduce Diesel PM at California Rail Yards (2005), California state regulation requires intrastate diesel-electric locomotives that operate 90 percent of the time in the state to use only California ultra low sulfur diesel fuel.

California ultra low sulfur diesel fuel	=	15	ppm (as S) fuel sulfur content.
Diesel fuel fuel density	=	7.05	lb/gal (EPA-AP-42)
Heating value of diesel fuel	=	137000	Btu/gal (EPA-AP-42)
Conversion Factors	=	20.80	bhp-hr/gal (large line-Haul and Passenger)
Fuel Consumption	=	211.54	gal/hr (calculated)
Brake Specific Fuel Consumption (BSFC)	=	0.34	lb/hp-hr (calculated)
	=	6586.54	Btu/hp-hr
SO_x EF (as SO_2, g/hp-hr)	= (ppm as S/1000000) x (Fuel Density [lb/gal]) x (1 gal/137000 Btu) x (1 lb-mol S/32 lb S) x (1 lb-mole SO_x/1 lb-mole S) x (64 lb SO_2/1 lb-mole SO_2) x (BSFC [Btu/hp-hr]) x (454 g/lb)		
	=	0.0046	g/hp-hr

11. NO_x and PM_{10} emission factors for locomotive idling are from EPA's Technical Highlights: Guidance for Quantifying and Using Long Duration Switch Yard Locomotive Idling Emission Reductions in State Yard Locomotive Idling Emission Reductions in State Implementation Plans, January 20
12. Percent of rated hp for GE D9 trains is 8.7% and CO and VOC emission factors for locomotive idling are from Southeastern States Air Resource Managers & Sierra Research Group: Development of Railroad Emissions Methodology, June 2004.
13. CH_4 and N_2O emission factors for locomotives (for both in motion and idling) are from Reference source 2: Table C.6, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009.
14. CO_2 emission factor for locomotives (for both in motion and idling) are from Reference source 4: Table C.3, California Climate Action Registry General Reporting Protocol Version 3.1, January 200
15. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)

CO_2 GWP (SAR, 1996)	=	1
CH_4 GWP (SAR, 1996)	=	21
N_2O GWP (SAR, 1996)	=	310

MONTHLY EMISSIONS (month 1-20)

	Month 1 Daily Emissions (lb/day)											Month 2 Daily Emissions (lb/day)											Month 3 Daily Emissions (lb/day)											Month 4 Daily Emissions (lb/day)										
	Quantity Mo 1	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 2	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 3	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 4	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																												
Air Compressor	1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
Asphalt Paver	-	-	-	-	-	-	-	-	-	-	-	1	0.60	0.56	3.69	1.16	6.86	0.01	489.47	0.10	-	491.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe	3	0.87	0.80	6.12	1.54	9.57	0.01	874.45	0.14	-	877.36	9	2.61	2.40	18.37	4.61	28.72	0.03	2,623.36	0.42	-	2,632.09	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
Compactor	2	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72
Crane small	1	0.28	0.26	2.52	0.62	4.79	0.00	414.21	0.06	-	415.39	3	0.83	0.77	7.55	1.87	14.38	0.01	1,242.62	0.17	-	1,246.16	5	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94	6	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
Crane large	1	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	1	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	1	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	4	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43
Dozer	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
Generator	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
Grader	2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03	4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06
Light Tower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
Loader	2	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67	4	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	4	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	6	2.19	2.01	16.36	5.80	59.64	0.07	5,787.01	0.52	-	5,798.01
Maxi Sneeker (Trencher)	-	-	-	-	-	-	-	-	-	-	-	2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
Skid Steer (Bobcat)	-	-	-	-	-	-	-	-	-	-	-	1	0.16	0.15	1.86	0.58	1.83	0.00	189.69	0.05	-	190.80	1	0.16	0.15	1.86	0.58	1.83	0.00	189.69	0.05	-	190.80	2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
Welding Machine	-	-	-	-	-	-	-	-	-	-	-	1	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32	2	0.31	0.29	3.29	1.34	2.95	0.00	280.10	0.12	-	282.64	3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
Equipment fueled with Propane																																												
Aerial Lift	2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
Fork Lift	2	0.01	0.01	2.12	0.02	0.87	-	131.72	0.17	-	135.29	6	0.04	0.04	6.37	0.06	2.62	-	395.16	0.51	-	405.88	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
Telehandler	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.02	0.02	8.67	0.03	1.24	-	191.16	0.25	-	196.49	1	0.02	0.02	8.67	0.03	1.24	-	191.16	0.25	-	196.49
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Truck for bridge	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16
Concrete Pump Truck for bridge	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70
Dump Truck	3	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31	8	0.20	0.18	1.50	0.71	3.34	0.00	379.30	0.00	0.00	379.49	8	0.20	0.18	1.50	0.71	3.34	0.00	379.30	0.00	0.00	379.49	7	0.18	0.16	1.31	0.62	2.92	0.00	331.88	0.00	0.00	332.05
Flatbed Truck	2	0.07	0.06	0.63	0.05	1.12	0.00	180.33	0.00	0.00	180.40	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
Staff & Security Truck	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
Pickup Truck	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
Water/Soiltac Truck	5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36	5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36	3	0.15	0.14	1.12	0.53	2.50	0.00	284.47	0.00	0.00	284.62	3	0.15	0.14	1.12	0.53	2.50	0.00	284.47	0.00	0.00	284.62
General Materials Delivery Truck for general cons	-	-	-	-	-	-	-	-	-	-	-	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32
Suncatcher Pedestals Delivery Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
Stirling Engines Delivery Truck	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
Suncatcher Metal Supports Delivery Truck	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
Suncatcher Mirrors Delivery Truck	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
Electrical and Control Systems Delivery Truck	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
Azimuth and Elevation Drive Delivery Truck	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
Water Delivery Trucks	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
Worker Passenger Vehicles	67	0.10	0.07	6.69	0.46	0.62	0.01	959.11	0.09	0.09	987.72	180	0.26	0.20	17.98	1.24	1.68	0.02	2,576.72	0.25	0.23	2,653.56	249	0.36	0.27	24.87	1.71	2.32	0.03	3,564.46	0.35	0.32	3,670.76	219	0.31	0.24	21.88	1.51	2.04	0.03	3,135.01	0.31	0.28	3,228.50
Train																																												
BNSF Locomotive Engine (in motion)	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
BNSF Locomotive Engine (idling)	4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
Total	**186**	**6.91**	**6.31**	**82.89**	**17.68**	**124.07**	**0.16**	**15,154.01**	**2.11**	**0.20**	**15,260.30**	**355**	**14.65**	**13.38**	**193.54**	**37.03**	**240.89**	**0.29**	**28,219.43**	**5.02**	**0.35**	**28,432.86**	**420**	**13.71**	**12.51**	**205.83**	**35.72**	**233.28**	**0.29**	**28,565.65**	**5.47**	**0.44**	**28,815.69**	**396**	**16.75**	**15.32**	**231.98**	**44.49**	**300.62**	**0.36**	**34,809.01**	**6.27**	**0.40**	**35,063.84**

MONTHLY EMISSIONS (month 21-41)

	Month 21 Daily Emissions (lb/day)											Month 22 Daily Emissions (lb/day)											Month 23 Daily Emissions (lb/day)											Month 24 Daily Emissions (lb/day)										
	Quantity Mo 21	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 22	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 23	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 24	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																												
Air Compressor	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94
Crane large	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07
Dozer	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	0.00	273.59
Grader	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	1	0.34	0.31	3.66	1.54	3.04	0.00	276.26	0.14	0.00	279.18	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane																																												
Aerial Lift	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99
Fork Lift	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88
Telehandler	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00

Month 5 Daily Emissions (lb/day)											Month 6 Daily Emissions (lb/day)											Month 7 Daily Emissions (lb/day)											Month 8 Daily Emissions (lb/day)										
Quantity Mo 5	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 6	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 7	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 8	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
6	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33	8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11	8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11	8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
4	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	4	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	4	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	1	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18	5	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94	5	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94	5	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	3	1.63	1.50	15.45	3.63	28.22	0.03	2,585.16	0.33	-	2,592.05	2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
6	2.19	2.01	16.36	5.80	59.64	0.07	5,787.01	0.52	-	5,796.01	5	1.82	1.68	13.63	4.83	49.70	0.05	4,822.51	0.44	-	4,831.67	4	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59	4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19	3	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39	3	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99	6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47	5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	5	0.03	0.03	0.22	0.10	0.49	0.00	55.78	0.00	0.00	55.81	1	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	-	-	-	-	-	-	-	-	-	-	-
1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	-	-	-	-	-	-	-	-	-	-	-
5	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
7	0.36	0.32	2.62	1.24	5.84	0.01	663.77	0.00	0.00	664.10	7	0.36	0.32	2.62	1.24	5.84	0.01	663.77	0.00	0.00	664.10	5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36	5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	12	0.07	0.06	0.53	0.25	1.18	0.00	133.87	0.00	0.00	133.94	2	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	-	-	-	-	-	-	-	-	-	-	-
3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	1	0.03	0.02	0.19	0.09	0.43	0.00	48.81	0.00	0.00	48.83
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99	39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
219	0.31	0.24	21.88	1.51	2.04	0.03	3,135.01	0.31	0.28	3,228.50	479	0.68	0.52	47.85	3.29	4.46	0.07	6,856.94	0.67	0.61	7,061.43	487	0.70	0.53	48.65	3.35	4.54	0.07	6,971.46	0.68	0.62	7,179.37	385	0.55	0.42	38.46	2.65	3.59	0.05	5,511.32	0.54	0.49	5,675.68
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55	1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
399	**17.48**	**16.00**	**248.63**	**47.64**	**307.97**	**0.36**	**35,555.00**	**6.84**	**0.40**	**35,821.65**	**686**	**20.30**	**18.53**	**334.70**	**58.92**	**337.35**	**0.43**	**42,084.88**	**9.04**	**0.73**	**42,501.16**	**674**	**19.04**	**17.37**	**315.73**	**55.54**	**311.96**	**0.40**	**39,646.50**	**8.55**	**0.74**	**40,055.45**	**560**	**16.14**	**14.73**	**281.12**	**47.98**	**249.80**	**0.32**	**32,182.01**	**7.81**	**0.61**	**32,534.82**

Month 25 Daily Emissions (lb/day)											Month 26 Daily Emissions (lb/day)											Month 27 Daily Emissions (lb/day)											Month 28 Daily Emissions (lb/day)										
Quantity Mo 25	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 26	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 27	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 28	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 9 Daily Emissions (lb/day)											Month 10 Daily Emissions (lb/day)											Month 11 Daily Emissions (lb/day)											Month 12 Daily Emissions (lb/day)										
Quantity Mo 9	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 10	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 11	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 12	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90	2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90	2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	1.45	1.33	10.21	2.56	15.95	0.02	1,457.42	0.23	-	1,462.27	4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82	4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82	4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04	3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04	3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04	3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11	8	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11	7	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72	7	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94	7	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12	7	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12	7	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03	1	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00	2	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67	1	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33	1	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
3	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39	2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59	2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59	2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48	3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48	2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99	2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48	3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48	3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48	3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Month 13 Daily Emissions (lb/day)										
Quantity Mo 13	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
7	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
-	-	-	-	-	-	-	-	-	-	-
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
357	0.51	0.39	35.66	2.46	3.33	0.05	5,110.50	0.50	0.46	5,262.90
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
506	**11.94**	**10.88**	**192.01**	**37.49**	**161.77**	**0.24**	**23,084.63**	**5.40**	**0.57**	**23,375.61**

Month 14 Daily Emissions (lb/day)										
Quantity Mo 14	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
9	2.50	2.30	22.64	5.62	43.15	0.04	3,727.85	0.51	-	3,738.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
5	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
341	0.49	0.37	34.06	2.35	3.18	0.05	4,881.45	0.48	0.44	5,027.03
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
503	**14.31**	**13.07**	**252.55**	**42.01**	**223.87**	**0.29**	**28,902.25**	**7.03**	**0.55**	**29,221.13**

Month 15 Daily Emissions (lb/day)										
Quantity Mo 15	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
9	2.50	2.30	22.64	5.62	43.15	0.04	3,727.85	0.51	-	3,738.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
9	0.05	0.05	9.56	0.09	3.92	-	592.75	0.77	-	608.81
8	0.14	0.14	69.38	0.24	9.95	-	1,529.25	2.03	-	1,571.95
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
347	0.50	0.38	34.66	2.39	3.23	0.05	4,967.34	0.48	0.45	5,115.48
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
512	**14.01**	**12.79**	**286.36**	**41.42**	**224.76**	**0.29**	**29,438.82**	**8.08**	**0.56**	**29,782.09**

Month 16 Daily Emissions (lb/day)										
Quantity Mo 16	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
7	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
1	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
2	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
332	0.47	0.36	33.16	2.28	3.09	0.05	4,752.62	0.46	0.43	4,894.35
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
490	**12.84**	**11.72**	**255.21**	**38.77**	**202.26**	**0.27**	**27,019.92**	**7.16**	**0.54**	**27,337.89**

Month 17 Daily Emissions (lb/day)										
Quantity Mo 17	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
6	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
1	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
2	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
2	0.31	0.29	3.29	1.34	2.95	0.00	280.10	0.12	-	282.64
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
325	0.46	0.35	32.46	2.24	3.03	0.05	4,652.41	0.45	0.42	4,791.16
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
477	**11.97**	**10.91**	**238.58**	**36.26**	**183.91**	**0.25**	**25,114.98**	**6.69**	**0.53**	**25,420.28**

Month 33 Daily Emissions (lb/day)										
Quantity Mo 33	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 18 Daily Emissions (lb/day)										
Quantity Mo 18	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
-	-	-	-	-	-	-	-	-	-	-
1	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
6	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
-	-	-	-	-	-	-	-	-	-	-
1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
1	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
1	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
6	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
280	0.40	0.30	27.97	1.93	2.61	0.04	4,008.23	0.39	0.36	4,127.77
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
419	**8.31**	**7.55**	**188.51**	**27.25**	**125.09**	**0.18**	**19,071.59**	**5.34**	**0.47**	**19,330.64**

Month 19 Daily Emissions (lb/day)										
Quantity Mo 19	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
-	-	-	-	-	-	-	-	-	-	-
1	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
5	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
-	-	-	-	-	-	-	-	-	-	-
1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
-	-	-	-	-	-	-	-	-	-	-
2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
-	-	-	-	-	-	-	-	-	-	-
1	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8	0.28	0.25	2.50	0.22	4.46	0.01	721.34	0.00	0.00	721.60
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
247	0.35	0.27	24.67	1.70	2.30	0.03	3,535.83	0.34	0.32	3,641.28
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
370	**5.56**	**5.03**	**123.62**	**17.29**	**84.79**	**0.14**	**14,416.28**	**3.42**	**0.43**	**14,621.73**

Month 20 Daily Emissions (lb/day)										
Quantity Mo 20	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
5	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
-	-	-	-	-	-	-	-	-	-	-
1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
-	-	-	-	-	-	-	-	-	-	-
2	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
-	-	-	-	-	-	-	-	-	-	-
1	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
2	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
7	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8	0.28	0.25	2.50	0.22	4.46	0.01	721.34	0.00	0.00	721.60
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.30	0.27	2.69	0.23	4.80	0.01	775.70	0.00	0.00	775.99
226	0.32	0.25	22.58	1.55	2.11	0.03	3,235.22	0.32	0.29	3,331.70
1	0.11	0.10	0.58	0.19	3.57	0.00	219.44	0.02	0.01	221.55
4	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
348	**5.38**	**4.87**	**119.90**	**16.47**	**83.22**	**0.13**	**13,987.50**	**3.33**	**0.40**	**14,182.70**

Month 38 Daily Emissions (lb/day)										
Quantity Mo 38	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Monthly Comparison of Construction Equipment Emissions:

Month of Contruction	Total Equipment Quantity	Daily Emissions (lb/day)									
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	186	6.91	6.31	82.89	17.68	124.07	0.16	15154.01	2.11	0.200	15260.30
2	355	14.65	13.38	193.54	37.03	240.89	0.29	28219.43	5.02	0.348	28432.86
3	420	13.71	12.51	205.83	35.72	233.28	0.29	28565.65	5.47	0.436	28815.69
4	396	16.75	15.32	231.98	44.49	300.62	0.36	34809.01	6.27	0.397	35063.84
5	399	17.48	16.00	248.63	47.64	307.97	0.36	35555.00	6.84	0.397	35821.65
6	686	20.30	18.53	334.70	58.92	337.35	0.43	42084.88	9.04	0.730	42501.15
7	674	19.04	17.37	315.73	55.54	311.96	0.40	39646.50	8.55	0.740	40055.45
8	560	16.14	14.73	281.12	47.98	249.80	0.32	32182.01	7.81	0.609	32534.82
9	499	15.14	13.82	225.50	45.45	226.47	0.30	28823.06	6.31	0.544	29124.00
10	461	13.94	12.73	213.23	42.76	203.37	0.27	26227.07	6.09	0.506	26511.80
11	456	12.18	11.11	190.10	38.48	164.23	0.23	22620.33	5.45	0.506	22891.67
12	456	12.18	11.11	190.10	38.48	164.23	0.23	22620.33	5.45	0.506	22891.67
13	506	11.94	10.88	192.01	37.49	161.77	0.24	23084.63	5.40	0.573	23375.61
14	503	14.31	13.07	252.55	42.01	223.87	0.29	28902.25	7.03	0.552	29221.13
15	512	14.01	12.79	286.36	41.42	224.76	0.29	29438.82	8.08	0.560	29782.09
16	490	12.84	11.72	255.21	38.77	202.26	0.27	27019.92	7.16	0.541	27337.89
17	477	11.97	10.91	238.58	36.26	183.91	0.25	25114.98	6.69	0.532	25420.28
18	419	8.31	7.55	188.51	27.25	125.09	0.18	19071.59	5.34	0.474	19330.64
19	370	5.56	5.03	123.62	17.29	84.79	0.14	14416.28	3.42	0.431	14621.73
20	348	5.38	4.87	119.90	16.47	83.22	0.13	13987.50	3.33	0.404	14182.70
21	332	6.02	5.46	123.72	17.62	112.20	0.16	16740.69	3.31	0.383	16928.84
22	330	5.68	5.14	119.96	16.07	109.16	0.15	16450.11	3.17	0.381	16634.92
23	327	5.38	4.87	117.03	14.95	105.41	0.15	16052.41	3.10	0.381	16235.67
24	326	5.12	4.64	114.44	13.95	102.68	0.15	15780.72	3.01	0.381	15962.08
25	326	5.12	4.64	114.44	13.95	102.68	0.15	15780.72	3.01	0.381	15962.08
26	319	3.36	3.01	97.68	9.29	60.05	0.10	11506.14	2.61	0.381	11679.13
27	318	3.10	2.78	95.09	8.29	57.32	0.10	11234.46	2.52	0.381	11405.54
28	276	3.04	2.74	90.89	8.00	56.93	0.09	10633.22	2.47	0.327	10786.37
29	274	2.94	2.64	90.14	7.65	55.26	0.09	10443.57	2.47	0.327	10596.63
30	274	2.94	2.64	90.14	7.65	55.26	0.09	10443.57	2.47	0.327	10596.63
31	274	2.94	2.64	90.14	7.65	55.26	0.09	10443.57	2.47	0.327	10596.63
32	268	2.90	2.61	83.77	7.59	52.65	0.09	10048.41	1.96	0.327	10190.75
33	292	2.94	2.63	86.17	7.75	52.87	0.10	10391.97	1.99	0.358	10544.56
34	292	2.94	2.63	86.17	7.75	52.87	0.10	10391.97	1.99	0.358	10544.56
35	296	3.01	2.70	120.86	7.87	57.84	0.10	11156.60	3.01	0.358	11330.53
36	259	2.95	2.66	117.16	7.62	57.50	0.09	10626.94	2.95	0.310	10785.08
37	254	2.78	2.51	115.60	7.48	54.71	0.09	10176.10	2.95	0.310	10334.08
38	254	2.78	2.51	115.60	7.48	54.71	0.09	10176.10	2.95	0.310	10334.08
39	254	2.78	2.51	115.60	7.48	54.71	0.09	10176.10	2.95	0.310	10334.08
40	253	2.78	2.51	115.50	7.48	54.70	0.09	10161.79	2.95	0.308	10319.34
41	253	2.78	2.51	115.50	7.48	54.70	0.09	10161.79	2.95	0.308	10319.34
MAX VALUE (lb/day)	**686**	**20.30**	**18.53**	**334.70**	**58.92**	**337.35**	**0.43**	**42084.9**	**9.04**	**0.740**	**42501.2**

Months for Annual Contruction		Annual Emissions (ton/year)									
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	**12**	2.32	2.12	35.27	6.63	37.24	0.047	4634.59	0.97	0.0769	4678.76
2	**13**	2.38	2.18	36.69	6.89	37.73	0.048	4737.69	1.01	0.0818	4784.26
3	**14**	2.38	2.17	37.46	6.95	37.50	0.048	4746.57	1.04	0.0844	4794.51
4	**15**	2.38	2.18	38.51	7.03	37.39	0.048	4757.92	1.07	0.0861	4807.07
5	**16**	2.33	2.13	38.81	6.95	36.11	0.047	4656.66	1.08	0.0879	4706.64
6	**17**	2.26	2.06	38.68	6.81	34.50	0.046	4520.94	1.08	0.0897	4571.42
7	**18**	2.11	1.92	36.78	6.39	31.74	0.043	4221.77	1.03	0.0863	4270.20
8	**19**	1.93	1.76	34.28	5.90	28.79	0.039	3893.78	0.97	0.0823	3939.56
9	**20**	1.79	1.63	32.18	5.49	26.62	0.037	3657.25	0.91	0.0797	3700.99
10	**21**	1.67	1.52	30.86	5.13	25.14	0.035	3500.18	0.87	0.0776	3542.45
11	**22**	1.56	1.43	29.65	4.78	23.91	0.033	3373.08	0.83	0.0760	3414.05
12	**23**	1.48	1.34	28.70	4.47	23.15	0.032	3287.69	0.80	0.0743	3327.52
13	**24**	1.38	1.26	27.71	4.15	22.35	0.031	3198.78	0.77	0.0727	3237.44
14	**25**	1.30	1.18	26.71	3.85	21.58	0.030	3103.83	0.74	0.0702	3141.06
15	**26**	1.15	1.05	24.69	3.42	19.45	0.027	2877.68	0.68	0.0680	2913.01
16	**27**	1.01	0.92	22.21	2.99	17.27	0.025	2641.02	0.61	0.0657	2674.12
17	**28**	0.88	0.80	20.07	2.59	15.39	0.023	2427.99	0.55	0.0629	2458.95
18	**29**	0.77	0.69	18.14	2.22	13.71	0.021	2237.27	0.49	0.0602	2266.24
19	**30**	0.70	0.63	16.86	1.97	12.80	0.020	2125.10	0.45	0.0583	2152.70
20	**31**	0.66	0.60	16.43	1.84	12.42	0.019	2073.46	0.44	0.0569	2100.37
21	**32**	0.63	0.57	15.96	1.72	12.02	0.019	2022.25	0.42	0.0559	2048.48
22	**33**	0.59	0.53	15.47	1.60	11.25	0.018	1939.72	0.41	0.0556	1965.48
23	**34**	0.56	0.50	15.03	1.49	10.52	0.017	1860.96	0.39	0.0553	1886.31
24	**35**	0.52	0.47	15.08	1.40	9.90	0.016	1797.31	0.39	0.0550	1822.54
25	**36**	0.50	0.45	15.11	1.31	9.31	0.016	1730.32	0.39	0.0541	1755.24
26	**37**	0.47	0.42	15.13	1.23	8.69	0.015	1657.45	0.39	0.0531	1682.08
27	**38**	0.46	0.41	15.36	1.21	8.62	0.015	1640.16	0.39	0.0522	1664.59
28	**39**	0.45	0.41	15.63	1.20	8.59	0.014	1626.41	0.40	0.0513	1650.66
29	**40**	0.45	0.41	15.95	1.19	8.56	0.014	1620.28	0.40	0.0510	1644.59
30	**41**	0.45	0.40	16.28	1.19	8.55	0.014	1616.61	0.41	0.0508	1640.99
MAX VALUE (ton/year)		**2.38**	**2.18**	**38.81**	**7.03**	**37.73**	**0.05**	**4757.92**	**1.08**	**0.0897**	**4807.07**

Combustion Exhaust Emissions On-site (annual)

7-18.

Construction Assumptions - 26 days per month

Equipment	Number of Vehicles per year	Hours/Day	Emission rate per piece of equipment (lb/hr)										Annual Emissions (ton/year)										Number of Vehicles (entire construction period)	entire construction period emissions (ton)									
			PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																	
Air Compressor	26	6	0.027	0.025	0.283	0.118	0.239	0.000	22.251	0.011	0.000	22.474	0.05	0.05	0.55	0.23	0.47	0.00	43.32	0.02	0.00	43.75	37	0.07	0.07	0.78	0.33	0.66	0.00	61.65	0.03	0.00	62.27
Asphalt Paver	0	7	0.085	0.078	0.522	0.164	0.968	0.001	69.134	0.015	0.000	69.444	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.01	0.01	0.05	0.02	0.09	0.00	6.36	0.00	0.00	6.39
Backhoe	50	6	0.051	0.047	0.362	0.091	0.566	0.001	51.682	0.008	0.000	51.854	0.19	0.17	1.33	0.33	2.07	0.00	189.46	0.03	0.00	190.10	88	0.33	0.31	2.34	0.59	3.65	0.00	333.46	0.05	0.00	334.57
Compactor	31	6	0.064	0.059	0.417	0.120	0.738	0.001	58.936	0.011	0.000	59.163	0.15	0.13	0.95	0.27	1.68	0.00	133.96	0.02	0.00	134.47	53	0.25	0.23	1.62	0.47	2.87	0.00	229.02	0.04	0.00	229.91
Crane small	90	5	0.054	0.049	0.488	0.121	0.929	0.001	80.272	0.011	0.000	80.502	0.32	0.30	2.94	0.73	5.61	0.01	484.62	0.07	0.00	486.00	218	0.79	0.72	7.13	1.77	13.59	0.01	1173.86	0.16	0.00	1177.21
Crane large	5	7	0.068	0.063	0.662	0.182	1.771	0.002	179.940	0.016	0.000	180.284	0.03	0.03	0.30	0.08	0.79	0.00	80.47	0.01	0.00	80.62	35	0.21	0.20	2.07	0.57	5.54	0.01	563.28	0.05	0.00	564.36
Dozer	8	7	0.078	0.072	0.574	0.205	1.942	0.002	165.982	0.018	0.000	166.371	0.06	0.05	0.42	0.15	1.43	0.00	122.22	0.01	0.00	122.50	14	0.10	0.09	0.74	0.26	2.50	0.00	213.88	0.02	0.00	214.38
Generator	58	9	0.029	0.026	0.292	0.113	0.307	0.000	30.595	0.010	0.000	30.810	0.19	0.18	1.95	0.76	2.06	0.00	204.85	0.07	0.00	206.29	83	0.27	0.25	2.80	1.08	2.95	0.00	293.15	0.10	0.00	295.20
Grader	14	7	0.078	0.072	0.740	0.174	1.352	0.001	123.810	0.016	0.000	124.140	0.10	0.09	0.94	0.22	1.71	0.00	156.83	0.02	0.00	157.25	36	0.25	0.23	2.41	0.57	4.40	0.00	403.28	0.05	0.00	404.36
Light Tower	23	7	0.026	0.024	0.293	0.103	0.278	0.000	27.964	0.009	0.000	28.160	0.06	0.05	0.65	0.23	0.62	0.00	62.21	0.02	0.00	62.64	32	0.08	0.07	0.91	0.32	0.86	0.00	86.55	0.03	0.00	87.16
Loader	27	6	0.056	0.052	0.421	0.149	1.534	0.002	148.843	0.013	0.000	149.126	0.13	0.12	0.96	0.34	3.49	0.00	338.54	0.03	0.00	339.18	54	0.26	0.24	1.91	0.68	6.98	0.01	677.08	0.06	0.00	678.37
Maxi Sneeker (Trencher)	60	8	0.040	0.037	0.436	0.184	0.362	0.000	32.888	0.017	0.000	33.236	0.27	0.24	2.86	1.20	2.37	0.00	215.48	0.11	0.00	217.76	78	0.34	0.32	3.71	1.56	3.08	0.00	280.13	0.14	0.00	283.09
Skid Steer (Bobcat)	37	7	0.022	0.020	0.250	0.078	0.246	0.000	25.496	0.007	0.000	25.645	0.08	0.07	0.90	0.28	0.88	0.00	91.24	0.03	0.00	91.77	47	0.10	0.09	1.14	0.36	1.12	0.00	115.90	0.03	0.00	116.58
Welding Machine	45	5	0.029	0.027	0.304	0.124	0.273	0.000	25.935	0.011	0.000	26.171	0.09	0.08	0.96	0.39	0.86	0.00	81.93	0.04	0.00	82.67	63	0.13	0.12	1.35	0.55	1.21	0.00	114.70	0.05	0.00	115.74
Equipment fueled with Propane																																	
Aerial Lift	53	6	0.003	0.003	1.417	0.005	0.203	0.000	31.235	0.042	0.000	32.107	0.01	0.01	5.98	0.02	0.86	0.00	131.71	0.18	0.00	135.38	159	0.04	0.04	17.93	0.06	2.57	0.00	395.12	0.53	0.00	406.15
Fork Lift	94	4	0.002	0.002	0.295	0.003	0.121	0.000	18.295	0.024	0.000	18.791	0.01	0.01	1.30	0.01	0.53	0.00	80.48	0.10	0.00	82.66	214	0.02	0.02	2.95	0.03	1.21	0.00	183.22	0.24	0.00	188.19
Telehandler	52	6	0.003	0.003	1.417	0.005	0.203	0.000	31.235	0.042	0.000	32.107	0.01	0.01	5.86	0.02	0.84	0.00	129.22	0.17	0.00	132.83	131	0.03	0.03	14.77	0.05	2.12	0.00	325.54	0.43	0.00	334.63
Vehicles with Onroad Engines for Emissions Estimates																																	
Concrete Delivery Truck for general construction	0	12	0.002	0.002	0.016	0.008	0.036	0.000	4.067	0.000	0.000	4.069	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14	0.00	0.00	0.04	0.02	0.08	0.00	8.88	0.00	0.00	8.89
Concrete Delivery Truck for bridge	1	12	0.000	0.000	0.004	0.002	0.008	0.000	0.930	0.000	0.000	0.930	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.15	11	0.00	0.00	0.01	0.00	0.01	0.00	1.60	0.00	0.00	1.60
Concrete Pump Truck for bridge	1	12	0.000	0.000	0.000	0.000	0.001	0.000	0.058	0.000	0.000	0.058	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	7	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06
Dump Truck	20	12	0.002	0.002	0.016	0.007	0.035	0.000	3.951	0.000	0.000	3.953	0.01	0.01	0.05	0.02	0.11	0.00	12.33	0.00	0.00	12.33	56	0.02	0.02	0.14	0.06	0.30	0.00	34.52	0.00	0.00	34.53
Flatbed Truck	120	12	0.003	0.003	0.026	0.002	0.046	0.000	7.514	0.000	0.000	7.517	0.05	0.05	0.49	0.04	0.87	0.00	140.66	0.00	0.00	140.71	310	0.14	0.13	1.26	0.11	2.25	0.00	363.37	0.00	0.00	363.51
Staff & Security Truck	72	24	0.000	0.000	0.009	0.000	0.000	0.000	1.437	0.000	0.000	1.558	0.00	0.00	0.21	0.01	0.00	0.00	32.29	0.01	0.01	35.00	246	0.00	0.00	0.71	0.02	0.01	0.00	110.33	0.03	0.03	119.58
Pickup Truck	132	12	0.000	0.000	0.006	0.000	0.001	0.000	0.901	0.000	0.000	0.928	0.00	0.00	0.13	0.01	0.01	0.00	18.56	0.00	0.00	19.11	451	0.01	0.00	0.44	0.03	0.04	0.00	63.41	0.01	0.01	65.30
Water/Soiltac Truck	60	12	0.004	0.004	0.031	0.015	0.070	0.000	7.902	0.000	0.000	7.906	0.04	0.04	0.29	0.14	0.65	0.00	73.96	0.00	0.00	74.00	160	0.11	0.09	0.78	0.37	1.74	0.00	197.23	0.00	0.00	197.33
General Materials Delivery Truck for general cons	9	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.00	0.00	0.02	0.01	0.05	0.00	5.71	0.00	0.00	5.71	24	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24
General Materials Delivery Truck for bridge	2	24	0.000	0.000	0.002	0.001	0.004	0.000	0.465	0.000	0.000	0.465	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29	24	0.00	0.00	0.01	0.01	0.03	0.00	3.48	0.00	0.00	3.48
Suncatcher Pedestals Delivery Truck	4	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.00	0.00	0.01	0.00	0.02	0.00	2.54	0.00	0.00	2.54	28	0.01	0.01	0.07	0.03	0.16	0.00	17.77	0.00	0.00	17.77
Stirling Engines Delivery Truck	72	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.02	0.02	0.18	0.09	0.40	0.00	45.68	0.00	0.00	45.71	246	0.08	0.07	0.62	0.29	1.37	0.00	156.08	0.00	0.00	156.16
Suncatcher Metal Supports Delivery Truck	132	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.04	0.04	0.33	0.16	0.74	0.00	83.75	0.00	0.00	83.79	451	0.15	0.14	1.13	0.53	2.52	0.00	286.15	0.00	0.00	286.30
Suncatcher Mirrors Delivery Truck	84	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.03	0.03	0.21	0.10	0.47	0.00	53.30	0.00	0.00	53.32	287	0.10	0.09	0.72	0.34	1.60	0.00	182.10	0.00	0.00	182.19
Electrical and Control Systems Delivery Truck	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	82	0.03	0.02	0.21	0.10	0.46	0.00	52.03	0.00	0.00	52.05
Azimuth and Elevation Drive Delivery Truck	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	82	0.03	0.02	0.21	0.10	0.46	0.00	52.03	0.00	0.00	52.05
Water Delivery Trucks	468	24	0.000	0.000	0.003	0.000	0.005	0.000	0.829	0.000	0.000	0.829	0.05	0.04	0.42	0.04	0.75	0.00	121.01	0.00	0.00	121.05	1599	0.16	0.14	1.43	0.12	2.56	0.00	413.45	0.00	0.00	413.60
Worker Passenger Vehicles	4103	24	0.000	0.000	0.004	0.000	0.000	0.000	0.596	0.000	0.000	0.614	0.08	0.06	5.33	0.37	0.50	0.01	763.55	0.07	0.07	786.33	9762	0.18	0.14	12.68	0.87	1.18	0.02	1816.67	0.18	0.16	1870.85
Train																																	
BNSF Locomotive Engine (in motion)	12	0.53	0.199	0.183	1.079	0.353	6.689	0.004	411.452	0.032	0.011	415.400	0.02	0.02	0.09	0.03	0.56	0.00	34.23	0.00	0.00	34.56	41	0.06	0.05	0.31	0.10	1.90	0.00	116.96	0.01	0.00	118.08
BNSF Locomotive Engine (idling)	48	1	0.006	0.006	0.094	0.092	0.119	0.004	411.452	0.032	0.011	415.400	0.00	0.00	0.06	0.06	0.07	0.00	256.75	0.02	0.01	259.21	164	0.01	0.01	0.20	0.20	0.25	0.01	877.21	0.07	0.02	885.63
	6013											Total	2.11	1.92	36.78	6.39	31.74	0.04	4221.77	1.03	0.09	4270.20		4.38	3.99	85.61	12.59	72.45	0.10	10224.76	2.32	0.22	10342.77

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Calico Solar
Fugitive Dust Emissions (on-site)
month = 7

Annual construction exhausted emissions in months 7-18.

Travel on sealed roads (paved)

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$

EPA AP-42 Section 13.2.1 Paved Roads Equation 2
E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
7.4 sL = road surface silt loading (grams per square meter) (g/m^2), from Table 13.2.1-4 for Municipal solid waste landfill
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants
Solar One Technicians

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	Number of Vehicles (month 7)	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on sealed roads	Max Daily Distance per Vehicle to drive on sealed roads (mile/day)	Max Daily VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Number of Vehicles per year (months 7-18)	Max Annual VMT (all vehicles)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Diesel Construction Equipment											
Air Compressor	3	0	0%	0.0	0	0.5	6	26	0	0.000	0.002
Asphalt Paver	0	0.2	0%	0.0	0	25	7	0	0	0.133	0.886
Backhoe	6	0	0%	0.0	0	11	6	50	0	0.038	0.258
Compactor	4	0	0%	0.0	0	10	6	31	0	0.033	0.224
Crane small	8	0.5	50%	0.3	2	10	5	90	585	0.033	0.224
Crane large	4	0.5	0%	0.0	0	35	7	5	0	0.220	1.468
Dozer	1	0	0%	0.0	0	20	7	8	0	0.095	0.634
Generator	5	0	0%	0.0	0	0.5	9	58	0	0.000	0.002
Grader	3	0	0%	0.0	0	20	7	14	0	0.095	0.634
Light Tower	2	0	0%	0.0	0	0.25	7	23	0	0.000	0.000
Loader	4	0	0%	0.0	0	25	6	27	0	0.133	0.886
Maxi Sneeker (Trencher)	5	0	0%	0.0	0	5	8	60	0	0.012	0.079
Skid Steer (Bobcat)	3	0	0%	0.0	0	2	7	37	0	0.003	0.020
Welding Machine	5	0	0%	0.0	0	0.5	5	45	0	0.000	0.002
Equipment fueled with Propane											
Aerial Lift	6	1	50%	0.5	3	4	6	53	689	0.008	0.056
Fork Lift	8	1	50%	0.5	4	3	4	94	1222	0.005	0.036
Telehandler	5	1	50%	0.5	3	3	6	52	676	0.005	0.036
Vehicles with Onroad Engines for Emissions Estimates											
Concrete Delivery Truck for general construction	0	7	90%	6.3	0	20	12	0	0	0.095	0.634
Concrete Delivery Truck for bridge	1	1.6	90%	1.4	1	20	12	1	37.44	0.095	0.634
Concrete Pump Truck for bridge	1	0.1	90%	0.1	0	20	12	1	2.34	0.095	0.634
Dump Truck	5	6.8	50%	3.4	17	20	12	20	1768	0.095	0.634
Flatbed Truck	10	27.2	100%	27.2	272	10	12	120	84864	0.033	0.224
Staff & Security Truck	6	48	100%	48.0	288	2.25	24	72	89856	0.003	0.023
Pickup Truck	11	6.8	95%	6.5	71	4	12	132	22170.72	0.008	0.056
Water/Soiltac Truck	5	13.6	25%	3.4	17	20	12	60	5304	0.095	0.634
General Materials Delivery Truck for general cor	3	7	100%	7.0	21	20	24	9	1638	0.095	0.634
General Materials Delivery Truck for bridge	2	1.6	100%	1.6	3	20	24	2	83.2	0.095	0.634
Suncatcher Pedestals Delivery Truck	3	7	50%	3.5	11	20	24	4	364	0.095	0.634
Stirling Engines Delivery Truck	6	7	100%	7.0	42	20	24	72	13104	0.095	0.634
Suncatcher Metal Supports Delivery Truck	11	7	100%	7.0	77	20	24	132	24024	0.095	0.634
Suncatcher Mirrors Delivery Truck	7	7	100%	7.0	49	20	24	84	15288	0.095	0.634
Electrical and Control Systems Delivery Truck	2	7	100%	7.0	14	20	24	24	4368	0.095	0.634
Azimuth and Elevation Drive Delivery Truck	2	7	100%	7.0	14	20	24	24	4368	0.095	0.634
Water Delivery Trucks	39	6	100%	6.0	234	11.7	24	468	73008	0.042	0.283
Worker Passenger Vehicles	487	9	100%	9.0	4383	2	24	4103	960102	0.003	0.020

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Diesel Construction Equipment															
Air Compressor	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	0%	0%	0.09	0.09	0.45	0.45	0.11%	0.07	0.07	0.01	0.01	0.07	0.07	0.01	0.01
Crane large	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dozer	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane															
Aerial Lift	0%	0%	0.03	0.03	0.17	0.17	0.04%	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
Fork Lift	0%	0%	0.04	0.04	0.15	0.15	0.04%	0.02	0.02	0.01	0.01	0.02	0.02	0.00	0.00
Telehandler	0%	0%	0.01	0.01	0.09	0.09	0.02%	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0%	0%	0.08	0.08	0.91	0.91	0.23%	0.01	0.01	0.01	0.01	0.14	0.14	0.00	0.00
Concrete Pump Truck for bridge	0%	0%	0.00	0.00	0.06	0.06	0.01%	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Dump Truck	0%	0%	0.90	0.90	10.78	10.78	2.74%	0.56	0.56	0.13	0.13	1.61	1.61	0.08	0.08
Flatbed Truck	0%	0%	5.07	5.07	60.89	60.89	15.47%	9.50	9.50	0.75	0.75	9.06	9.06	1.41	1.41
Staff & Security Truck	0%	0%	0.28	0.28	6.76	6.76	1.72%	1.05	1.05	0.04	0.04	0.93	0.93	0.15	0.15
Pickup Truck	0%	0%	0.33	0.33	4.00	4.00	1.02%	0.62	0.62	0.05	0.05	0.58	0.58	0.09	0.09
Water/Soiltac Truck	0%	0%	0.90	0.90	10.78	10.78	2.74%	1.68	1.68	0.13	0.13	1.61	1.61	0.25	0.25
General Materials Delivery Truck for general cor	0%	0%	0.55	0.55	13.31	13.31	3.38%	0.52	0.52	0.08	0.08	1.99	1.99	0.08	0.08
General Materials Delivery Truck for bridge	0%	0%	0.08	0.08	2.03	2.03	0.52%	0.03	0.03	0.01	0.01	0.30	0.30	0.00	0.00
Suncatcher Pedestals Delivery Truck	0%	0%	0.28	0.28	6.66	6.66	1.69%	0.12	0.12	0.04	0.04	1.00	1.00	0.02	0.02
Stirling Engines Delivery Truck	0%	0%	1.11	1.11	26.63	26.63	6.77%	4.15	4.15	0.17	0.17	3.98	3.98	0.62	0.62
Suncatcher Metal Supports Delivery Truck	0%	0%	2.03	2.03	48.82	48.82	12.41%	7.62	7.62	0.30	0.30	7.30	7.30	1.14	1.14
Suncatcher Mirrors Delivery Truck	0%	0%	1.29	1.29	31.07	31.07	7.89%	4.85	4.85	0.19	0.19	4.65	4.65	0.72	0.72
Electrical and Control Systems Delivery Truck	0%	0%	0.37	0.37	8.88	8.88	2.26%	1.38	1.38	0.06	0.06	1.33	1.33	0.21	0.21
Azimuth and Elevation Drive Delivery Truck	0%	0%	0.37	0.37	8.88	8.88	2.26%	1.38	1.38	0.06	0.06	1.33	1.33	0.21	0.21
Water Delivery Trucks	0%	0%	2.76	2.76	66.32	66.32	16.85%	10.35	10.35	0.41	0.41	9.88	9.88	1.54	1.54
Worker Passenger Vehicles	0%	0%	3.58	3.58	85.91	85.91	21.83%	9.41	9.41	0.48	0.48	11.64	11.64	1.27	1.27
TOTAL Fugitive emissions for vehicles traveled on sealed road (paved)			**20.17**	**20.17**	**393.53**	**393.53**		**53.35**	**53.35**	**2.96**	**2.96**	**57.46**	**57.46**	**7.82**	**7.82**

Travel on unpaved surfaces

$E = k * (s/12)^a * (W/3)^b * [(365 - P)/365]$ EPA AP-42 Section 13.2.2 Unpaved Roads Equations 1a and 2

E = size-specific emission factor (lb/VMT)

k, a, b = empirical constants

8.5 s = surface material silt content (%) Construction sites - Scraper routes

W = mean vehicle weight (tons)

constants

	$PM_{2.5}$	PM_{10}
k	0.15	1.5
a	0.9	0.9
b	0.45	0.45

Industrial Roads

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)

Vehicle Type	Number of Vehicles (month 7)	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on unpaved roads	Max Daily Distance per Vehicle to drive on unpaved roads (mile/day)	Max Daily VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Number of Vehicles per year (months 7-18)	Max Annual VMT (all vehicles)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Diesel Construction Equipment											
Air Compressor	3	0	100%	0	0	0.5	6	26	0	0.046	0.460
Asphalt Paver	0	0.2	100%	0.2	0	25	7	0	0	0.268	2.676
Backhoe	6	0	100%	0	0	11	6	50	0	0.185	1.849
Compactor	4	0	100%	0	0	10	6	31	0	0.177	1.771
Crane small	8	0.5	50%	0.25	2	10	5	90	585	0.177	1.771
Crane large	4	0.5	100%	0.5	2	35	7	5	65	0.311	3.113
Dozer	1	0	100%	0	0	20	7	8	0	0.242	2.420
Generator	5	0	100%	0	0	0.5	9	58	0	0.046	0.460
Grader	3	0	100%	0	0	20	7	14	0	0.242	2.420
Light Tower	2	0	100%	0	0	0.25	7	23	0	0.034	0.337
Loader	4	0	100%	0	0	25	6	27	0	0.268	2.676
Maxi Sneeker (Trencher)	5	0	100%	0	0	5	8	60	0	0.130	1.297
Skid Steer (Bobcat)	3	0	100%	0	0	2	7	37	0	0.086	0.859
Welding Machine	5	0	100%	0	0	0.5	5	45	0	0.046	0.460
Equipment fueled with Propane											
Aerial Lift	6	1	50%	0.5	3	4	6	53	689	0.117	1.173
Fork Lift	8	1	50%	0.5	4	3	4	94	1222	0.103	1.030
Telehandler	5	1	50%	0.5	3	3	6	52	676	0.103	1.030
Vehicles with Onroad Engines for Emissions Estimates											
Concrete Delivery Truck for general construction	0	7	10%	0.7	0	20	12	0	0	0.242	2.420
Concrete Delivery Truck for bridge	1	1.6	10%	0.16	0	20	12	1	4.16	0.242	2.420
Concrete Pump Truck for bridge	1	0.1	10%	0.01	0	20	12	1	0.26	0.242	2.420
Dump Truck	5	6.8	50%	3.4	17	20	12	20	1768	0.242	2.420
Flatbed Truck	10	27.2	0%	0	0	10	12	120	0	0.177	1.771
Staff & Security Truck	6	48	0%	0	0	2.25	24	72	0	0.091	0.905
Pickup Truck	11	6.8	5%	0.34	4	4	12	132	1166.88	0.117	1.173
Water/Soiltac Truck	5	13.6	75%	10.2	51	20	12	60	15912	0.242	2.420
General Materials Delivery Truck for general cor	3	7	0%	0	0	20	24	9	0	0.242	2.420
General Materials Delivery Truck for bridge	2	1.6	0%	0	0	20	24	2	0	0.242	2.420
Suncatcher Pedestals Delivery Truck	3	7	50%	3.5	11	20	24	4	364	0.242	2.420
Stirling Engines Delivery Truck	6	7	0%	0	0	20	24	72	0	0.242	2.420
Suncatcher Metal Supports Delivery Truck	11	7	0%	0	0	20	24	132	0	0.242	2.420
Suncatcher Mirrors Delivery Truck	7	7	0%	0	0	20	24	84	0	0.242	2.420
Electrical and Control Systems Delivery Truck	2	7	0%	0	0	20	24	24	0	0.242	2.420
Azimuth and Elevation Drive Delivery Truck	2	7	0%	0	0	20	24	24	0	0.242	2.420
Water Delivery Trucks	39	6	0%	0	0	11.7	24	468	0	0.190	1.901
Worker Passenger Vehicles	487	9	0%	0	0	2	24	4103	0	0.086	0.859

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Diesel Construction Equipment															
Air Compressor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	0%	68%	0.69	0.22	3.54	1.13	1.65%	0.52	0.17	0.07	0.02	0.35	0.11	0.05	0.02
Crane large	0%	68%	0.90	0.29	6.23	1.99	2.90%	0.10	0.03	0.09	0.03	0.62	0.20	0.01	0.00
Dozer	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane															
Aerial Lift	0%	68%	0.57	0.18	3.52	1.13	1.64%	0.40	0.13	0.06	0.02	0.35	0.11	0.04	0.01
Fork Lift	0%	68%	1.14	0.37	4.12	1.32	1.92%	0.63	0.20	0.11	0.04	0.41	0.13	0.06	0.02
Telehandler	0%	68%	0.42	0.13	2.58	0.82	1.20%	0.35	0.11	0.04	0.01	0.26	0.08	0.03	0.01
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0%	68%	0.03	0.01	0.39	0.12	0.18%	0.01	0.00	0.00	0.00	0.04	0.01	0.00	0.00
Concrete Pump Truck for bridge	0%	68%	0.00	0.00	0.02	0.01	0.01%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0%	68%	3.43	1.10	41.14	13.16	19.16%	2.14	0.68	0.34	0.11	4.11	1.32	0.21	0.07
Flatbed Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	0%	68%	0.37	0.12	4.39	1.40	2.04%	0.68	0.22	0.04	0.01	0.44	0.14	0.07	0.02
Water/Soiltac Truck	0%	68%	10.28	3.29	123.41	39.49	57.47%	19.25	6.16	1.03	0.33	12.34	3.95	1.93	0.62
General Materials Delivery Truck for general cor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Pedestals Delivery Truck	0%	68%	1.06	0.34	25.41	8.13	11.83%	0.44	0.14	0.11	0.03	2.54	0.81	0.04	0.01
Stirling Engines Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Metal Supports Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Mirrors Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electrical and Control Systems Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Azimuth and Elevation Drive Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Delivery Trucks	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL Fugitive emissions for vehicles traveled on unpaved surfaces			**18.90**	**6.05**	**214.75**	**68.72**		**24.52**	**7.85**	**1.89**	**0.60**	**21.47**	**6.87**	**2.45**	**0.78**

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily

Bulldozing & grading

EPA AP-42 Section 11.9

$E = p * 1 * s^{1.5} / M^{1.4}$

PM10 Emissions from bulldozing (lb/hr) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.75 p = particle size multiplier for PM10
6.9 s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9 M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.75 lb/hr of PM10

$E = p * 5.7 * s^{1.2} / M^{1.3}$

PM2.5 Emissions from bulldozing (lb/hr) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.105 p = particle size multiplier for PM2.5
6.9 s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9 M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.41 lb/hr of PM2.5

$E = p * 0.051 * S^{2.0}$

PM10 Emissions from grading (lb/VMT) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.6 p = particle size multiplier for PM10
7.1 S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
1.54 lb/VMT of PM10

$E = p * 0.040 * S^{2.5}$

PM2.5 Emissions from grading (lb/VMT) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.031 p = particle size multiplier for PM2.5
7.1 S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
0.17 lb/VMT of PM2.5

Equipment	Quantity/ month	Hours/ Day	VMT/day/ vehicle	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	Number of Vehicles per year (months 7-18)	VMT/year/ vehicle	PM10 Emissions (ton/yr)	PM2.5 Emissions (ton/yr)
Compactor	4	6	2	68%	3.95	0.43	31	1612	0.398	0.043
Dozer	1	7		68%	1.71	0.94	8		0.177	0.097
Maxi Sneeker (Trencher)	5	8	2	68%	4.94	0.53	60	3120	0.770	0.083
Grader	3	7	4	68%	5.92	0.64	14	1456	0.359	0.039
Skid Steer (Bobcat)	3	7		68%	5.38	2.96	37		0.862	0.474
				Grading Total	**14.81**	**1.60**			**1.53**	**0.16**
				Bulldozing Total	**7.08**	**3.89**			**1.04**	**0.57**
				Total	**21.89**	**5.49**			**2.57**	**0.74**

12 months of earth work
12 total construction hours per work day
26 construction days per month

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily

Dirt Piling or Material Handling

$E = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$

PM10 Emissions from Material Handling (lb/ton) from EPA AP-42 Chapter 13.2.4 Eq. 1
E = Emission factor (lb/ton material handled)
7.45 U = Mean Wind speed (mph) (from 1991-1995 Imperial Co. airport data)
12 M = Moisture content of surface material (%) (from Table 13.2.4-1 for cover at municipal landfill)

	$PM_{2.5}$	PM_{10}
k	0.053	0.35

0.00003 lb/ton of PM2.5
0.00022 lb/ton of PM10

Equipment	Quantity/ month	Hours/ Day	Material Handled per Day (ton)	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	Number of Vehicles per year (months 7-18)	Material Handled per year (ton)	PM10 Emissions (ton/yr)	PM2.5 Emissions (ton/yr)
Backhoe	6	6	3,236	68%	0.2268	0.0343	50	1009503	0.035	0.005
Loader	4	6	3,236	68%	0.2268	0.0343	27	1009503	0.035	0.005
Dump Truck	5	12	6,471	68%	0.4536	0.0687	1	2,019,006	0.071	0.011
				Total	**0.91**	**0.14**			**0.14**	**0.02**

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily
Assume 50% soil movement from loaders and 50% from backhoes

4,654 yd3/day 6,471 ton/day
1,452,000 yd3/project 2,019,006 tons/project 2781 density of soil (lb/yd3)
(USDA NRCS Physical Soil Properti 0.5 depth of disturbance (yards)
for Niland Fine Sand and Rositas Fine Sand soil)
total project
600 acres = 1,452,000 cubic yds, assume depth of soils moved is
3000 total acres disturbed as described in Table 3-17 of Project Description
only a small portion of this soil is picked up and moved via dump druck

Cover Storage Pile

$E = 1.7 * G/1.5 * (365-H)/235 * I/15 * J$ SCAQMD Table A9-9-E

PM10 Emission factor from wind erosion of storage piles per day per acre
15 G = Silt content (%) (from CEQA Handbook Table A9-9-E-1 for blended ore and dirt)
23 H = Number of days with >= 0.01 inches of precipitation per year (from Daggett FAA Airport Station)
34 I = Percentage of time that the unobstructed wind speed exceeds 12 mph at mean pile height
0.5 J = Fraction of TSP that is PM10 = 0.5
28.039 lb/acre/day

wind speed percentage based on 2005 wind speed data as recorded at Daggett FAA Airport station

Source	Quantity	Size of Pile (acre)	Hours/Day	Days/Year per Pile	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)
Cover Storage Pile	2	1	24	182.5	68%	17.95	3.98	1.64	0.36

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily
pile size assumed
piles present only for 6 months

Construction on-site fugitive dust PM10 | **Month 7 construction on-site fugitive dust** | **Months 7-18 construction on-site fugitive dust**

Vehicle Type	Number of Vehicles (month 7)	Max Daily Distance per Vehicle (mile/day)	Sealed Road - PM_{10} Fugitive Emissions	Paved Road - PM_{10} Fugitive Emissions	Unpaved Road - PM_{10} Fugitive Emissions	Earthmoving Equipment - PM_{10} Fugitive Emissions	Total PM_{10} Fugitive Emissions	Sealed Road - PM_{10} Fugitive Emissions	Paved Road - PM_{10} Fugitive Emissions	Unpaved Road - PM_{10} Fugitive Emissions	Earthmoving Equipment - PM_{10} Fugitive Emissions	Total PM_{10} Fugitive Emissions
			lb/day					ton/year				
Diesel Construction Equipment												
Air Compressor	3	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Asphalt Paver	0	0.2	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Backhoe	6	0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.04	0.04
Compactor	4	0	0.00	0.00	0.00	3.95	3.95	0.00	0.00	0.00	0.40	0.40
Crane small	8	0.5	0.45	0.00	1.13		1.58	0.07	0.00	0.17		0.23
Crane large	4	0.5	0.00	0.00	1.99		1.99	0.00	0.00	0.03		0.03
Dozer	1	0	0.00	0.00	0.00	1.71	1.71	0.00	0.00	0.00	0.18	0.18
Generator	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Grader	3	0	0.00	0.00	0.00	5.92	5.92	0.00	0.00	0.00	0.36	0.36
Light Tower	2	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Loader	4	0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.04	0.04
Maxi Sneeker (Trencher)	5	0	0.00	0.00	0.00	4.94	4.94	0.00	0.00	0.00	0.77	0.77
Skid Steer (Bobcat)	3	0	0.00	0.00	0.00	5.38	5.38	0.00	0.00	0.00	0.86	0.86
Welding Machine	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Equipment fueled with Propane												
Aerial Lift	6	1	0.17	0.00	1.13		1.29	0.02	0.00	0.13		0.15
Fork Lift	8	1	0.15	0.00	1.32		1.46	0.02	0.00	0.20		0.22
Telehandler	5	1	0.09	0.00	0.82		0.92	0.01	0.00	0.11		0.12
Vehicles with Onroad Engines for Emissions Estimates												
Concrete Delivery Truck for general construction	0	7	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Concrete Delivery Truck for bridge	1	1.6	0.91	0.00	0.12		1.04	0.01	0.00	0.00		0.01
Concrete Pump Truck for bridge	1	0.1	0.06	0.00	0.01		0.06	0.00	0.00	0.00		0.00
Dump Truck	5	6.8	10.78	0.00	13.16	0.45	24.40	0.56	0.00	0.68	0.07	1.32
Flatbed Truck	10	27.2	60.89	0.00	0.00		60.89	9.50	0.00	0.00		9.50
Staff & Security Truck	6	48	6.76	0.00	0.00		6.76	1.05	0.00	0.00		1.05
Pickup Truck	11	6.8	4.00	0.00	1.40		5.40	0.62	0.00	0.22		0.84
Water/Soiltac Truck	5	13.6	10.78	0.00	39.49		50.27	1.68	0.00	6.16		7.84
General Materials Delivery Truck for general cor	3	7	13.31	0.00	0.00		13.31	0.52	0.00	0.00		0.52
General Materials Delivery Truck for bridge	2	1.6	2.03	0.00	0.00		2.03	0.03	0.00	0.00		0.03
Suncatcher Pedestals Delivery Truck	3	7	6.66	0.00	8.13		14.79	0.12	0.00	0.14		0.26
Stirling Engines Delivery Truck	6	7	26.63	0.00	0.00		26.63	4.15	0.00	0.00		4.15
Suncatcher Metal Supports Delivery Truck	11	7	48.82	0.00	0.00		48.82	7.62	0.00	0.00		7.62
Suncatcher Mirrors Delivery Truck	7	7	31.07	0.00	0.00		31.07	4.85	0.00	0.00		4.85
Electrical and Control Systems Delivery Truck	2	7	8.88	0.00	0.00		8.88	1.38	0.00	0.00		1.38
Azimuth and Elevation Drive Delivery Truck	2	7	8.88	0.00	0.00		8.88	1.38	0.00	0.00		1.38
Water Delivery Trucks	39	6	66.32	0.00	0.00		66.32	10.35	0.00	0.00		10.35
Worker Passenger Vehicles	487	9	85.91	0.00	0.00		85.91	9.41	0.00	0.00		9.41
Storage piles						17.95	17.95				1.64	1.64
			393.53	**0.00**	**68.72**	**40.74**	**503.00**	**53.35**	**0.00**	**7.85**	**4.35**	**65.55**

Construction on-site fugitive dust PM2.5 | **Month 7 construction on-site fugitive dust** | **Months 7-18 construction on-site fugitive dust**

Vehicle Type	Number of Vehicles (month 7)	Max Daily Distance per Vehicle (mile/day)	Sealed Road - PM2.5 Fugitive Emissions	Paved Road - PM2.5 Fugitive Emissions	Unpaved Road - PM2.5 Fugitive Emissions	Earthmoving Equipment - PM2.5 Fugitive Emissions	Total PM2.5 Fugitive Emissions	Sealed Road - PM2.5 Fugitive Emissions	Paved Road - PM2.5 Fugitive Emissions	Unpaved Road - PM2.5 Fugitive Emissions	Earthmoving Equipment - PM2.5 Fugitive Emissions	Total PM2.5 Fugitive Emissions
			lb/day					ton/year				
Diesel Construction Equipment												
Air Compressor	3	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Asphalt Paver	0	0.2	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Backhoe	6	0	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01
Compactor	4	0	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.04	0.04
Crane small	8	0.5	0.07	0.00	0.11		0.18	0.01	0.00	0.02		0.03
Crane large	4	0.5	0.00	0.00	0.20		0.20	0.00	0.00	0.00		0.00
Dozer	1	0	0.00	0.00	0.00	0.94	0.94	0.00	0.00	0.00	0.10	0.10
Generator	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Grader	3	0	0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.00	0.04	0.04
Light Tower	2	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Loader	4	0	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01
Maxi Sneeker (Trencher)	5	0	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.00	0.08	0.08
Skid Steer (Bobcat)	3	0	0.00	0.00	0.00	2.96	2.96	0.00	0.00	0.00	0.47	0.47
Welding Machine	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Equipment fueled with Propane												
Aerial Lift	6	1	0.02	0.00	0.11		0.14	0.00	0.00	0.01		0.02
Fork Lift	8	1	0.02	0.00	0.13		0.15	0.00	0.00	0.02		0.02
Telehandler	5	1	0.01	0.00	0.08		0.10	0.00	0.00	0.01		0.01
Vehicles with Onroad Engines for Emissions Estimates												
Concrete Delivery Truck for general construction	0	7	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Concrete Delivery Truck for bridge	1	1.6	0.14	0.00	0.01		0.15	0.00	0.00	0.00		0.00
Concrete Pump Truck for bridge	1	0.1	0.01	0.00	0.00		0.01	0.00	0.00	0.00		0.00
Dump Truck	5	6.8	1.61	0.00	1.32	0.07	3.00	0.08	0.00	0.07	0.01	0.16
Flatbed Truck	10	27.2	9.06	0.00	0.00		9.06	1.41	0.00	0.00		1.41
Staff & Security Truck	6	48	0.93	0.00	0.00		0.93	0.15	0.00	0.00		0.15
Pickup Truck	11	6.8	0.58	0.00	0.14		0.72	0.09	0.00	0.02		0.11
Water/Soiltac Truck	5	13.6	1.61	0.00	3.95		5.56	0.25	0.00	0.62		0.87
General Materials Delivery Truck for general cor	3	7	1.99	0.00	0.00		1.99	0.08	0.00	0.00		0.08
General Materials Delivery Truck for bridge	2	1.6	0.30	0.00	0.00		0.30	0.00	0.00	0.00		0.00
Suncatcher Pedestals Delivery Truck	3	7	1.00	0.00	0.81		1.81	0.02	0.00	0.01		0.03
Stirling Engines Delivery Truck	6	7	3.98	0.00	0.00		3.98	0.62	0.00	0.00		0.62
Suncatcher Metal Supports Delivery Truck	11	7	7.30	0.00	0.00		7.30	1.14	0.00	0.00		1.14
Suncatcher Mirrors Delivery Truck	7	7	4.65	0.00	0.00		4.65	0.72	0.00	0.00		0.72
Electrical and Control Systems Delivery Truck	2	7	1.33	0.00	0.00		1.33	0.21	0.00	0.00		0.21
Azimuth and Elevation Drive Delivery Truck	2	7	1.33	0.00	0.00		1.33	0.21	0.00	0.00		0.21
Water Delivery Trucks	39	6	9.88	0.00	0.00		9.88	1.54	0.00	0.00		1.54
Worker Passenger Vehicles	487	9	11.64	0.00	0.00		11.64	1.27	0.00	0.00		1.27
Storage piles						3.98	3.98				0.36	0.36
			57.46	**0.00**	**6.87**	**9.61**	**73.94**	**7.82**	**0.00**	**0.78**	**1.12**	**9.72**

Calico Solar

Combustion Exhaust Emissions Off-site (short-term)

To be consistent with on-site emissions, months 7 was used to represent the daily/monthly construction off-site (on-road) emissions.
construction schedule = 12 hours per day 7 am to 7 pm pedestal installation = 16 hours per day
delivery trucks can arrive at the site anytime during the day or night

EMISSION FACTORS

				Emission factors (g/mile)										Emission rate per piece of equipment (lb/hr)									
Vehicles with Onroad Engines for Emissions Estimates	Off-site Miles per Day Travelled within MDAQMD jurisdictional area per Vehicle	Hours/Day	Vehicle Weight (lbs)	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Concrete Delivery Truck for general construction	74	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.30E-02	2.07E-02	1.70E-01	8.02E-02	3.79E-01	4.07E-04	4.30E+01	6.93E-05	6.52E-05	4.30E+01
Concrete Delivery Truck for bridge	74	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.30E-02	2.07E-02	1.70E-01	8.02E-02	3.79E-01	4.07E-04	4.30E+01	6.93E-05	6.52E-05	4.30E+01
Concrete Pump Truck for bridge	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dump Truck	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flatbed Truck	0	12	20,000	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Staff & Security Truck	0	24	4,500	1.00E-02	1.00E-02	2.10E+00	5.50E-02	3.00E-02	9.00E-03	3.26E+02	1.04E-01	8.13E-02	3.54E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pickup Truck	0	12	8,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	7.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water/Soiltac Truck	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
General Materials Delivery Truck for general cons	74	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.15E-02	1.03E-02	8.49E-02	4.01E-02	1.89E-01	2.04E-04	2.15E+01	3.46E-05	3.26E-05	2.15E+01
General Materials Delivery Truck for bridge	74	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.15E-02	1.03E-02	8.49E-02	4.01E-02	1.89E-01	2.04E-04	2.15E+01	3.46E-05	3.26E-05	2.15E+01
Suncatcher Pedestals Delivery Truck	200	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-02	2.79E-02	2.29E-01	1.08E-01	5.11E-01	5.51E-04	5.81E+01	9.36E-05	8.81E-05	5.81E+01
Stirling Engines Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Suncatcher Metal Supports Delivery Truck	180	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.80E-02	2.51E-02	2.06E-01	9.75E-02	4.60E-01	4.96E-04	5.23E+01	8.43E-05	7.93E-05	5.23E+01
Suncatcher Mirrors Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Electrical and Control Systems Delivery Truck	200	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-02	2.79E-02	2.29E-01	1.08E-01	5.11E-01	5.51E-04	5.81E+01	9.36E-05	8.81E-05	5.81E+01
Azimuth and Elevation Drive Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Water Delivery Trucks	0	24	23,400	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Worker Passenger Vehicles	74	24	4,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	3.54E+02	4.89E-04	3.72E-04	3.42E-02	2.36E-03	3.19E-03	4.75E-05	4.90E+00	4.78E-04	4.39E-04	5.05E+00
Train	**Load Factor**	**Hours/Day**	**Horsepower**	**Emission factors (g/bhp-hr)**																			
BNSF Locomotive Engine (in motion)	0.087	2.00	4,400	2.36E-01	2.17E-01	1.28E+00	4.18E-01	7.93E+00	4.62E-03	4.88E+02	3.85E-02	1.25E-02	4.93E+02	1.99E-01	1.83E-01	1.08E+00	3.53E-01	6.69E+00	3.89E-03	4.11E+02	3.24E-02	1.05E-02	4.15E+02
BNSF Locomotive Engine (idling)	0.087	1	4,400	7.27E-03	6.69E-03	1.12E-01	1.09E-01	1.41E-01	4.62E-03	4.88E+02	3.85E-02	1.25E-02	4.93E+02	6.13E-03	5.64E-03	9.43E-02	9.16E-02	1.19E-01	3.89E-03	4.11E+02	3.24E-02	1.05E-02	4.15E+02

Notes:

1. Onroad vehicle emissions from EMFAC2007 model. The vehicle description in EMFAC2007 model are as follows:
   - Flatbed Truck and Water Delivery Truck are Medium-Heavy-Duty (MHD-DSL).
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Worker Passenger Vehicle and Pickup Truck are Passenger Car (LDA-ALL)
   - Concrete Delivery Truck, Concrete Pump Truck, Dump Truck, Water/Soiltac Truck, General Materials Delivery Trucks, Suncatcher Pedestals Delivery Truck, Stirling Engines Delivery Truck, Suncatcher Metal Supports Delivery Truck, Suncatcher Mirrors Delivery Truck, Electrical and Control Systems Delivery Truck, and Azimuth & Elevation Drive Delivery Truck are all Heavy-Heavy-Duty (HHD-DSL)
2. The emissions of "Toyota Highlander Hybrid" (Staff & Security Truck) meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
3. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
4. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009. Hybrid Truck is assumed to be gasoline light truck here.
5. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)
   CO_2 GWP (SAR, 1996) = 1
   CH_4 GWP (SAR, 1996) = 21
   N_2O GWP (SAR, 1996) = 310
6. Off-site locomotive emission factors (both in motion and idling) are the same as on-site ones.
7. The average speed for off-site train is assumed to be 60 mph; the idling time at the Cadiz well station is assumed to be up to 1 hour (conservative) of the additional locomotive engine plus 3 (assumed) existing locomotive engines.
8. Off-site Miles per Day Travelled within MDAQMD jurisdictional area per Train equals 120

MONTHLY EMISSIONS (month 1-20)

	Month 1 Daily Emissions (lb/day)											Month 2 Daily Emissions (lb/day)											Month 3 Daily Emissions (lb/day)											Month 4 Daily Emissions (lb/day)										
	Quantity Mo 1	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 2	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 3	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 4	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	6.00	1.66	1.49	12.22	5.77	27.25	0.03	3,095.72	0.00	0.00	3,097.28	6.00	1.66	1.49	12.22	5.77	27.25	0.03	3,095.72	0.00	0.00	3,097.28	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Truck for bridge	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21
Concrete Pump Truck for bridge	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-
Dump Truck	3.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	7.00	-	-	-	-	-	-	-	-	-	-
Flatbed Truck	2.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-
Staff & Security Truck	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-
Pickup Truck	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-
Water/Soiltac Truck	5.00	-	-	-	-	-	-	-	-	-	-	14.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-
General Materials Delivery Truck for general cons	-	-	-	-	-	-	-	-	-	-	-	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
General Materials Delivery Truck for bridge	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43
Suncatcher Pedestals Delivery Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52
Stirling Engines Delivery Truck	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
Suncatcher Metal Supports Delivery Truck	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
Suncatcher Mirrors Delivery Truck	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
Electrical and Control Systems Delivery Truck	2.00	1.34	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
Azimuth and Elevation Drive Delivery Truck	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
Water Delivery Trucks	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-
Worker Passenger Vehicles	67.00	0.79	0.60	55.03	3.79	5.13	0.08	7,886.04	0.77	0.71	8,121.22	180.00	2.11	1.60	147.84	10.18	13.79	0.21	21,186.37	2.07	1.90	21,818.20	249.00	2.92	2.22	204.51	14.08	19.08	0.28	29,307.81	2.86	2.63	30,181.84	219.00	2.57	1.95	179.87	12.39	16.78	0.25	25,776.75	2.51	2.31	26,545.48
Train																																												
BNSF Locomotive Engine (in motion)	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
BNSF Locomotive Engine (idling)	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
Total	**168.00**	**20.42**	**18.23**	**199.30**	**71.85**	**335.09**	**0.44**	**46,262.35**	**1.02**	**0.82**	**46,539.32**	**310.00**	**23.68**	**20.98**	**306.37**	**84.97**	**375.54**	**0.60**	**63,174.36**	**2.32**	**2.02**	**63,849.80**	**373.00**	**24.49**	**21.59**	**363.04**	**88.88**	**380.82**	**0.68**	**71,295.80**	**3.12**	**2.75**	**72,213.44**	**339.00**	**24.72**	**21.85**	**342.70**	**89.21**	**388.10**	**0.66**	**68,852.43**	**2.77**	**2.43**	**69,665.31**

MONTHLY EMISSIONS (month 21-41)

	Month 21 Daily Emissions (lb/day)											Month 22 Daily Emissions (lb/day)											Month 23 Daily Emissions (lb/day)											Month 24 Daily Emissions (lb/day)										
	Quantity Mo 21	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 22	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 23	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 24	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Pump Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general cons	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Pedestals Delivery Truck	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52
Stirling Engines Delivery Truck	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
Suncatcher Metal Supports Delivery Truck	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
Suncatcher Mirrors Delivery Truck	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
Electrical and Control Systems Delivery Truck	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
Azimuth and Elevation Drive Delivery Truck	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
Water Delivery Trucks	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	209	2.45	1.86	171.66	11.82	16.01	0.24	24599.73	2.40	2.20	25333.36	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14
Train																																												
BNSF Locomotive Engine (in motion)	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
BNSF Locomotive Engine (idling)	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
Total	**309**	**23**	**20**	**322**	**83**	**360**	**1**	**64580**	**3**	**2**	**65356**	**308**	**23**	**20**	**321**	**83**	**360**	**1**	**64462**	**3**	**2**	**65235**	**306**	**23**	**20**	**321**	**83**	**360**	**1**	**64462**	**3**	**2**	**65235**	**306**	**23**	**20**	**321**	**83**	**360**	**1**	**64462**	**3**	**2**	**65235**

Month 5 Daily Emissions (lb/day)											Month 6 Daily Emissions (lb/day)											Month 7 Daily Emissions (lb/day)											Month 8 Daily Emissions (lb/day)										
Quantity Mo 5	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 6	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 7	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 8	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	5.00	1.38	1.24	10.18	4.81	22.71	0.02	2,579.77	0.00	0.00	2,581.07	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	-	-	-	-	-	-	-	-	-	-	-
1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	-
7.00	-	-	-	-	-	-	-	-	-	-	7.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	-
3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	12.00	3.31	2.97	24.44	11.55	54.50	0.06	6,191.45	0.01	0.01	6,194.57	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	-	-	-	-	-	-	-	-	-	-	-
3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	1.00	0.75	0.67	5.50	2.60	12.28	0.01	1,394.47	0.00	0.00	1,395.17
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	-
219.00	2.57	1.95	179.87	12.39	16.78	0.25	25,776.75	2.51	2.31	26,545.48	479.00	5.62	4.27	393.42	27.09	36.70	0.55	56,379.28	5.50	5.05	58,060.66	487.00	5.72	4.34	399.99	27.54	37.31	0.56	57,320.90	5.59	5.14	59,030.36	385.00	4.52	3.43	316.21	21.78	29.49	0.44	45,315.29	4.42	4.06	46,666.71
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
336.00	**24.72**	**21.85**	**342.70**	**89.21**	**388.10**	**0.66**	**68,852.43**	**2.77**	**2.43**	**69,665.31**	**610.00**	**31.64**	**27.64**	**584.76**	**117.39**	**471.61**	**1.02**	########	**5.77**	**5.19**	########	**602.00**	**27.87**	**24.24**	**562.81**	**104.37**	**408.63**	**0.96**	########	**5.85**	**5.26**	########	**494.00**	**24.35**	**21.24**	**461.92**	**90.51**	**362.64**	**0.81**	**84,054.17**	**4.67**	**4.18**	**85,447.55**

Month 25 Daily Emissions (lb/day)											Month 26 Daily Emissions (lb/day)											Month 27 Daily Emissions (lb/day)											Month 28 Daily Emissions (lb/day)										
Quantity Mo 25	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 26	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 27	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 28	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
306	**23**	**20**	**321**	**83**	**360**	**1**	**64462**	**3**	**2**	**65235**	**303**	**21**	**18**	**305**	**75**	**323**	**1**	**60279**	**3**	**2**	**61049**	**303**	**21**	**18**	**305**	**75**	**323**	**1**	**60279**	**3**	**2**	**61049**	**261**	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**

Month 9 Daily Emissions (lb/day)											Month 10 Daily Emissions (lb/day)											Month 11 Daily Emissions (lb/day)											Month 12 Daily Emissions (lb/day)										
Quantity Mo 9	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 10	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 11	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 12	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	-
3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	39.00	-	-	-	-	-	-	-	-	-	-	-
334.00	3.92	2.98	274.33	18.89	25.59	0.38	39,312.49	3.83	3.52	40,484.88	305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73	305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73	305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60	4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
440.00	**23.01**	**20.12**	**414.53**	**85.02**	**346.46**	**0.73**	**76,656.89**	**4.08**	**3.64**	**77,870.55**	**405.00**	**21.84**	**19.12**	**384.60**	**80.49**	**330.61**	**0.69**	**71,695.67**	**3.75**	**3.33**	**72,806.76**	**405.00**	**21.84**	**19.12**	**384.60**	**80.49**	**330.61**	**0.69**	**71,695.67**	**3.75**	**3.33**	**72,806.76**	**405.00**	**21.84**	**19.12**	**384.60**	**80.49**	**330.61**	**0.69**	**71,695.67**	**3.75**	**3.33**	**72,806.76**

Month 29 Daily Emissions (lb/day)											Month 30 Daily Emissions (lb/day)											Month 31 Daily Emissions (lb/day)											Month 32 Daily Emissions (lb/day)										
Quantity Mo 29	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 30	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 31	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 32	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23	166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23	166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23	166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80	1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60	4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
259	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**	**259**	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**	**259**	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**	**259**	**20**	**18**	**270**	**73**	**320**	**1**	**55335**	**2**	**2**	**55958**

Month 13 Daily Emissions (lb/day)										
Quantity Mo 13	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
357.00	4.19	3.18	293.22	20.19	27.35	0.41	42,019.63	4.10	3.76	43,272.77
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
457.00	**22.45**	**19.58**	**427.31**	**83.44**	**334.59**	**0.75**	**77,816.18**	**4.34**	**3.88**	**79,109.79**

Month 14 Daily Emissions (lb/day)										
Quantity Mo 14	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
341.00	4.00	3.04	280.08	19.29	26.12	0.39	40,136.40	3.91	3.60	41,333.37
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
444.00	**22.26**	**19.44**	**414.17**	**82.53**	**333.37**	**0.73**	**75,932.94**	**4.16**	**3.71**	**77,170.40**

Month 15 Daily Emissions (lb/day)										
Quantity Mo 15	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
347.00	4.07	3.09	285.00	19.63	26.58	0.40	40,842.61	3.98	3.66	42,060.64
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
449.00	**22.33**	**19.49**	**419.09**	**82.87**	**333.83**	**0.74**	**76,639.16**	**4.23**	**3.77**	**77,897.67**

Month 16 Daily Emissions (lb/day)										
Quantity Mo 16	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
332.00	3.90	2.96	272.68	18.78	25.43	0.38	39,077.08	3.81	3.50	40,242.46
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
434.00	**22.15**	**19.36**	**406.77**	**82.02**	**332.68**	**0.72**	**74,873.63**	**4.06**	**3.61**	**76,079.49**

Month 17 Daily Emissions (lb/day)										
Quantity Mo 17	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
325.00	3.81	2.90	266.93	18.38	24.90	0.37	38,253.17	3.73	3.43	39,393.97
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
425.00	**22.07**	**19.30**	**401.02**	**81.63**	**332.14**	**0.71**	**74,049.71**	**3.98**	**3.54**	**75,231.00**

Month 33 Daily Emissions (lb/day)										
Quantity Mo 33	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
283	**20**	**18**	**290**	**74**	**322**	**1**	**58160**	**2**	**2**	**58867**

Month 34 Daily Emissions (lb/day)										
Quantity Mo 34	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
283	**20**	**18**	**290**	**74**	**322**	**1**	**58160**	**2**	**2**	**58867**

Month 35 Daily Emissions (lb/day)										
Quantity Mo 35	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2232.28	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
283	**20**	**18**	**290**	**74**	**322**	**1**	**58160**	**2**	**2**	**58867**

Month 36 Daily Emissions (lb/day)										
Quantity Mo 36	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
246	**20**	**18**	**260**	**72**	**319**	**1**	**53805**	**2**	**2**	**54382**

Month 37 Daily Emissions (lb/day)										
Quantity Mo 37	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
241	**20**	**18**	**260**	**72**	**319**	**1**	**53805**	**2**	**2**	**54382**

Month 18 Daily Emissions (lb/day)										
Quantity Mo 18	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
280.00	3.29	2.50	229.97	15.84	21.45	0.32	32,956.57	3.21	2.95	33,939.42
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
380.00	**21.54**	**18.89**	**364.06**	**79.08**	**328.69**	**0.66**	**68,753.12**	**3.46**	**3.07**	**69,776.45**

Month 19 Daily Emissions (lb/day)										
Quantity Mo 19	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
247.00	2.90	2.20	202.87	13.97	18.92	0.28	29,072.41	2.83	2.60	29,939.42
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
345.00	**21.16**	**18.60**	**336.96**	**77.21**	**326.17**	**0.62**	**64,868.95**	**3.08**	**2.72**	**65,776.45**

Month 20 Daily Emissions (lb/day)										
Quantity Mo 20	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	-	-	-	-	-	-	-	-	-	-
226.00	2.65	2.02	185.62	12.78	17.31	0.26	26,600.66	2.59	2.38	27,393.96
1.00	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4.00	0.02	0.02	0.38	0.37	0.48	0.02	1,645.81	0.13	0.04	1,661.60
324.00	**20.91**	**18.41**	**319.71**	**76.03**	**324.56**	**0.60**	**62,397.21**	**2.84**	**2.50**	**63,230.99**

Month 38 Daily Emissions (lb/day)										
Quantity Mo 38	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
241	**20**	**18**	**260**	**72**	**319**	**1**	**53805**	**2**	**2**	**54382**

Month 39 Daily Emissions (lb/day)										
Quantity Mo 39	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
241	**20**	**18**	**260**	**72**	**319**	**1**	**53805**	**2**	**2**	**54382**

Month 40 Daily Emissions (lb/day)										
Quantity Mo 40	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
152	1.78	1.36	124.84	8.60	11.64	0.17	17890.71	1.74	1.60	18424.26
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
240	**20**	**18**	**259**	**72**	**319**	**1**	**53687**	**2**	**2**	**54261**

Month 41 Daily Emissions (lb/day)										
Quantity Mo 41	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
152	1.78	1.36	124.84	8.60	11.64	0.17	17890.71	1.74	1.60	18424.26
1	0.40	0.37	2.16	0.71	13.38	0.01	822.90	0.06	0.02	830.80
4	0.02	0.02	0.38	0.37	0.48	0.02	1645.81	0.13	0.04	1661.60
240	**20**	**18**	**259**	**72**	**319**	**1**	**53687**	**2**	**2**	**54261**

Monthly Comparison of Construction Equipment Emissions:

		Daily Emissions (lb/day)										
Month of Contruction	Total Equipment Quantity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	168	20.42	18.23	199.30	71.85	335.09	0.44	46262.35	1.02	0.824	46539.32
2	310	23.68	20.98	306.37	84.97	375.54	0.60	63174.36	2.32	2.021	63849.80
3	373	24.49	21.59	363.04	88.88	380.82	0.68	71295.80	3.12	2.749	72213.44
4	339	24.72	21.85	342.70	89.21	388.10	0.66	68852.43	2.77	2.434	69665.31
5	336	24.72	21.85	342.70	89.21	388.10	0.66	68852.43	2.77	2.434	69665.31
6	610	31.64	27.64	584.76	117.39	471.61	1.02	106678.32	5.77	5.187	108407.48
7	602	27.87	24.24	562.81	104.37	408.63	0.96	100396.58	5.85	5.261	102150.18
8	494	24.35	21.24	461.92	90.51	362.64	0.81	84054.17	4.67	4.178	85447.55
9	440	23.01	20.12	414.53	85.02	346.46	0.73	76656.89	4.08	3.638	77870.55
10	405	21.84	19.12	384.60	80.49	330.61	0.69	71695.67	3.75	3.330	72806.76
11	405	21.84	19.12	384.60	80.49	330.61	0.69	71695.67	3.75	3.330	72806.76
12	405	21.84	19.12	384.60	80.49	330.61	0.69	71695.67	3.75	3.330	72806.76
13	457	22.45	19.58	427.31	83.44	334.59	0.75	77816.18	4.34	3.879	79109.79
14	444	22.26	19.44	414.17	82.53	333.37	0.73	75932.94	4.16	3.710	77170.40
15	449	22.33	19.49	419.09	82.87	333.83	0.74	76639.16	4.23	3.773	77897.67
16	434	22.15	19.36	406.77	82.02	332.68	0.72	74873.63	4.06	3.615	76079.49
17	425	22.07	19.30	401.02	81.63	332.14	0.71	74049.71	3.98	3.541	75231.00
18	380	21.54	18.89	364.06	79.08	328.69	0.66	68753.12	3.46	3.067	69776.45
19	345	21.16	18.60	336.96	77.21	326.17	0.62	64868.95	3.08	2.719	65776.45
20	324	20.91	18.41	319.71	76.03	324.56	0.60	62397.21	2.84	2.497	63230.99
21	309	22.95	20.27	322.26	82.87	360.08	0.62	64579.68	2.65	2.324	65355.90
22	308	22.94	20.26	321.44	82.81	360.01	0.62	64461.98	2.64	2.314	65234.69
23	306	22.94	20.26	321.44	82.81	360.01	0.62	64461.98	2.64	2.314	65234.69
24	306	22.94	20.26	321.44	82.81	360.01	0.62	64461.98	2.64	2.314	65234.69
25	306	22.94	20.26	321.44	82.81	360.01	0.62	64461.98	2.64	2.314	65234.69
26	303	20.70	18.25	304.93	75.01	323.18	0.58	60278.57	2.64	2.307	61049.17
27	303	20.70	18.25	304.93	75.01	323.18	0.58	60278.57	2.64	2.307	61049.17
28	261	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
29	259	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
30	259	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
31	259	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
32	259	20.21	17.88	270.43	72.63	319.96	0.53	55335.08	2.15	1.864	55958.26
33	283	20.49	18.09	290.14	73.99	321.80	0.56	58159.93	2.43	2.117	58867.35
34	283	20.49	18.09	290.14	73.99	321.80	0.56	58159.93	2.43	2.117	58867.35
35	283	20.49	18.09	290.14	73.99	321.80	0.56	58159.93	2.43	2.117	58867.35
36	246	20.05	17.76	259.76	71.90	318.96	0.51	53804.96	2.00	1.727	54382.50
37	241	20.05	17.76	259.76	71.90	318.96	0.51	53804.96	2.00	1.727	54382.50
38	241	20.05	17.76	259.76	71.90	318.96	0.51	53804.96	2.00	1.727	54382.50
39	241	20.05	17.76	259.76	71.90	318.96	0.51	53804.96	2.00	1.727	54382.50
40	240	20.04	17.75	258.93	71.84	318.89	0.51	53687.26	1.99	1.717	54261.29
41	240	20.04	17.75	258.93	71.84	318.89	0.51	53687.26	1.99	1.717	54261.29
MAX VALUE (lb/day)	**610**	**31.64**	**27.64**	**584.76**	**117.39**	**471.61**	**1.02**	**106678.3**	**5.85**	**5.261**	**108407.5**

		Annual Emissions (ton/year)									
Months for Annual Contruction		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	12	3.78	3.32	61.51	13.82	57.83	0.112	11717.03	0.57	0.5033	11884.98
2	13	3.80	3.33	64.48	13.97	57.83	0.116	12127.23	0.61	0.5431	12308.40
3	14	3.78	3.31	65.88	13.94	57.28	0.118	12293.10	0.63	0.5650	12481.56
4	15	3.76	3.29	66.61	13.86	56.67	0.119	12362.56	0.65	0.5783	12555.46
5	16	3.72	3.25	67.44	13.76	55.95	0.119	12440.83	0.67	0.5937	12638.84
6	17	3.69	3.22	68.20	13.67	55.22	0.120	12508.40	0.68	0.6081	12711.20
7	18	3.56	3.11	65.33	13.17	53.36	0.115	12015.37	0.65	0.5805	12208.99
8	19	3.47	3.03	62.40	12.82	52.29	0.111	11553.51	0.62	0.5474	11736.14
9	20	3.42	3.00	60.55	12.63	51.80	0.108	11271.97	0.59	0.5256	11447.32
10	21	3.42	3.00	59.35	12.60	51.97	0.107	11114.97	0.57	0.5085	11284.63
11	22	3.44	3.01	58.53	12.63	52.36	0.106	11020.93	0.56	0.4953	11186.19
12	23	3.45	3.03	57.71	12.66	52.74	0.105	10926.89	0.54	0.4821	11087.76
13	24	3.47	3.04	56.88	12.69	53.12	0.104	10832.85	0.53	0.4688	10989.32
14	25	3.47	3.05	55.51	12.68	53.45	0.102	10659.25	0.51	0.4485	10808.94
15	26	3.45	3.04	54.09	12.58	53.32	0.100	10455.74	0.49	0.4303	10599.37
16	27	3.43	3.02	52.60	12.48	53.18	0.098	10243.06	0.47	0.4112	10380.34
17	28	3.41	3.00	50.83	12.36	53.01	0.096	9989.05	0.44	0.3885	10118.76
18	29	3.38	2.98	49.13	12.24	52.86	0.093	9745.76	0.42	0.3667	9868.21
19	30	3.36	2.97	47.92	12.16	52.74	0.092	9571.33	0.40	0.3510	9688.58
20	31	3.35	2.96	47.05	12.10	52.66	0.090	9447.39	0.39	0.3399	9560.94
21	32	3.34	2.95	46.41	12.05	52.60	0.089	9355.58	0.38	0.3317	9466.40
22	33	3.31	2.93	45.99	11.94	52.10	0.089	9272.13	0.38	0.3290	9382.04
23	34	3.28	2.90	45.59	11.82	51.61	0.088	9190.20	0.37	0.3265	9299.27
24	35	3.25	2.87	45.18	11.71	51.11	0.087	9108.27	0.37	0.3239	9216.49
25	36	3.21	2.84	44.38	11.57	50.58	0.086	8969.73	0.36	0.3163	9075.42
26	37	3.17	2.80	43.58	11.43	50.04	0.084	8831.19	0.36	0.3087	8934.34
27	38	3.16	2.80	42.99	11.39	49.99	0.084	8747.03	0.35	0.3011	8847.67
28	39	3.16	2.79	42.40	11.35	49.93	0.083	8662.88	0.34	0.2936	8761.00
29	40	3.15	2.79	42.25	11.34	49.92	0.083	8641.45	0.34	0.2917	8738.94
30	41	3.15	2.79	42.10	11.32	49.91	0.082	8620.03	0.33	0.2897	8716.88
MAX VALUE (ton/year)		**3.80**	**3.33**	**68.20**	**13.97**	**57.83**	**0.12**	**12508.40**	**0.68**	**0.6081**	**12711.20**

Combustion Exhaust Emissions Off-site (annual)

To be consistency to on-site emissions, months 7-18 was used to represent the annual construction off-site (on-road) emissions.
Construction Assumptions - 26 days per month

Equipment	Number of Vehicles per year	Hours/Day	Emission rate per piece of equipment (lb/hr)										Annual Emissions (ton/year)										Number of Vehicles (entire construction period)	entire construction period emissions (ton)									
			PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																	
Concrete Delivery Truck for general construction	0	12	0.023	0.021	0.170	0.080	0.379	0.000	42.996	0.000	0.000	43.018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14	0.05	0.05	0.37	0.18	0.83	0.00	93.90	0.00	0.00	93.95
Concrete Delivery Truck for bridge	1	12	0.023	0.021	0.170	0.080	0.379	0.000	42.996	0.000	0.000	43.018	0.00	0.00	0.03	0.01	0.06	0.00	6.71	0.00	0.00	6.71	11	0.04	0.04	0.29	0.14	0.65	0.00	73.78	0.00	0.00	73.82
Concrete Pump Truck for bridge	1	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	20	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	120	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	310	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	72	24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	246	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	132	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	451	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	60	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general cons	9	24	0.012	0.010	0.085	0.040	0.189	0.000	21.498	0.000	0.000	21.509	0.03	0.03	0.24	0.11	0.53	0.00	60.37	0.00	0.00	60.40	24	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06
General Materials Delivery Truck for bridge	2	24	0.012	0.010	0.085	0.040	0.189	0.000	21.498	0.000	0.000	21.509	0.01	0.01	0.05	0.03	0.12	0.00	13.41	0.00	0.00	13.42	24	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06
Suncatcher Pedestals Delivery Truck	4	24	0.031	0.028	0.229	0.108	0.511	0.001	58.103	0.000	0.000	58.132	0.04	0.03	0.29	0.14	0.64	0.00	72.51	0.00	0.00	72.55	28	0.27	0.24	2.00	0.95	4.47	0.00	507.59	0.00	0.00	507.84
Stirling Engines Delivery Truck	72	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.56	0.50	4.12	1.95	9.19	0.01	1044.18	0.00	0.00	1044.71	246	1.91	1.71	14.08	6.66	31.41	0.03	3567.61	0.01	0.01	3569.41
Suncatcher Metal Supports Delivery Truck	132	24	0.028	0.025	0.206	0.098	0.460	0.000	52.293	0.000	0.000	52.319	1.15	1.03	8.50	4.02	18.96	0.02	2153.62	0.00	0.00	2154.70	451	3.94	3.53	29.05	13.73	64.78	0.07	7358.20	0.01	0.01	7361.91
Suncatcher Mirrors Delivery Truck	84	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.65	0.59	4.81	2.27	10.72	0.01	1218.21	0.00	0.00	1218.82	287	2.23	2.00	16.43	7.76	36.64	0.04	4162.21	0.01	0.01	4164.31
Electrical and Control Systems Delivery Truck	24	24	0.031	0.028	0.229	0.108	0.511	0.001	58.103	0.000	0.000	58.132	0.23	0.21	1.72	0.81	3.83	0.00	435.07	0.00	0.00	435.29	82	0.80	0.71	5.87	2.77	13.09	0.01	1486.51	0.00	0.00	1487.25
Azimuth and Elevation Drive Delivery Truck	24	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.19	0.17	1.37	0.65	3.06	0.00	348.06	0.00	0.00	348.24	82	0.64	0.57	4.69	2.22	10.47	0.01	1189.20	0.00	0.00	1189.80
Water Delivery Trucks	468	24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1599	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	4103	24	0.000	0.000	0.034	0.002	0.003	0.000	4.904	0.000	0.000	5.051	0.63	0.48	43.81	3.02	4.09	0.06	6278.11	0.61	0.56	6465.34	9762	1.49	1.13	104.23	7.18	9.72	0.14	14937.10	1.46	1.34	15382.56
Train																																	
BNSF Locomotive Engine (in motion)	12	2.00	0.199	0.183	1.079	0.353	6.689	0.004	411.452	0.032	0.011	415.400	0.06	0.06	0.34	0.11	2.09	0.00	128.37	0.01	0.00	129.60	41	0.21	0.19	1.15	0.38	7.13	0.00	438.61	0.03	0.01	442.82
BNSF Locomotive Engine (idling)	48	1	0.006	0.006	0.094	0.092	0.119	0.004	411.452	0.032	0.011	415.400	0.00	0.00	0.06	0.06	0.07	0.00	256.75	0.02	0.01	259.21	164	0.01	0.01	0.20	0.20	0.25	0.01	877.21	0.07	0.02	885.63
												Total	**3.56**	**3.11**	**65.33**	**13.17**	**53.36**	**0.12**	**12015.37**	**0.65**	**0.58**	**12208.99**		**11.75**	**10.35**	**179.64**	**42.75**	**182.26**	**0.34**	**35013.88**	**1.59**	**1.40**	**35481.42**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Calico Solar

Fugitive Dust Emissions (offsite)

To be consistent to on-site emissions, months 7 was used to represent the daily/month construction off-site (on-road) emissions.
To be consistent to on-site emissions, months 7-18 was used to represent the annual construction off-site (on-road) emissions.

Travel on paved road

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),

k = particle size multiplier for particle size range and units of interest

0.02 sL = road surface silt loading (grams per square meter) (g/m^2), Freeway Local Streets & Freeways (emission inventory code: 640-641-5400-0000), July 1997

W = average weight (tons) of the vehicles traveling the road, and

C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)

365 N = number of days in the year (averaging period)

Vehicle Type	Number of Vehicles (month 7)	Number of Vehicles per year (months 7 18)	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD Jurisdictional Area (mile/day)	Max Daily VMT (all vehicles)	Max Annual VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Vehicles with Onroad Engines for Emissions Estimates										
Concrete Delivery Truck for general construction	0	0	74	0	0	20	12	26	0.002	0.013
Concrete Delivery Truck for bridge	1	1	74	74	1924	20	12	26	0.002	0.013
Concrete Pump Truck for bridge	1	1	0	0	0	20	12	26	0.002	0.013
Dump Truck	5	20	0	0	0	20	12	26	0.002	0.013
Flatbed Truck	10	120	0	0	0	10	12	26	0.000	0.004
Staff & Security Truck	6	72	0	0	0	2.25	24	26	0.000	0.000
Pickup Truck	11	132	0	0	0	4	12	26	0.000	0.001
Water/Soiltac Truck	5	60	0	0	0	20	12	26	0.002	0.013
General Materials Delivery Truck for general construc	3	9	74	222	17316	20	24	26	0.002	0.013
General Materials Delivery Truck for bridge	2	2	74	148	3848	20	24	26	0.002	0.013
Suncatcher Pedestals Delivery Truck	3	4	200	600	20800	20	24	26	0.002	0.013
Stirling Engines Delivery Truck	6	72	160	960	299520	20	24	26	0.002	0.013
Suncatcher Metal Supports Delivery Truck	11	132	180	1980	617760	20	24	26	0.002	0.013
Suncatcher Mirrors Delivery Truck	7	84	160	1120	349440	20	24	26	0.002	0.013
Electrical and Control Systems Delivery Truck	2	24	200	400	124800	20	24	26	0.002	0.013
Azimuth and Elevation Drive Delivery Truck	2	24	160	320	99840	20	24	26	0.002	0.013
Water Delivery Trucks	39	468	0	0	0	11.7	24	26	0.001	0.006
Worker Passenger Vehicles	487	4103	74	36038	7894172	2	24	26	6.44E-05	4.30E-04

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0%	0%	0.08	0.08	0.97	0.97	1.06%	0.01	0.01	0.01	0.01	0.12	0.12	0.00	0.00
Concrete Pump Truck for bridge	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general construc	0%	0%	0.12	0.12	2.91	2.91	3.17%	0.11	0.11	0.02	0.02	0.37	0.37	0.01	0.01
General Materials Delivery Truck for bridge	0%	0%	0.08	0.08	1.94	1.94	2.11%	0.03	0.03	0.01	0.01	0.25	0.25	0.00	0.00
Suncatcher Pedestals Delivery Truck	0%	0%	0.33	0.33	7.87	7.87	8.57%	0.14	0.14	0.04	0.04	1.01	1.01	0.02	0.02
Stirling Engines Delivery Truck	0%	0%	0.52	0.52	12.60	12.60	13.71%	1.97	1.97	0.07	0.07	1.62	1.62	0.25	0.25
Suncatcher Metal Supports Delivery Truck	0%	0%	1.08	1.08	25.98	25.98	28.27%	4.05	4.05	0.14	0.14	3.33	3.33	0.52	0.52
Suncatcher Mirrors Delivery Truck	0%	0%	0.61	0.61	14.70	14.70	15.99%	2.29	2.29	0.08	0.08	1.89	1.89	0.29	0.29
Electrical and Control Systems Delivery Truck	0%	0%	0.22	0.22	5.25	5.25	5.71%	0.82	0.82	0.03	0.03	0.67	0.67	0.11	0.11
Azimuth and Elevation Drive Delivery Truck	0%	0%	0.17	0.17	4.20	4.20	4.57%	0.66	0.66	0.02	0.02	0.54	0.54	0.08	0.08
Water Delivery Trucks	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	0%	0%	0.65	0.65	15.48	15.48	16.85%	1.70	1.70	0.10	0.10	2.32	2.32	0.25	0.25
TOTAL Fugitive emissions for vehicle travel offsite paved roads			**3.87**	**3.87**	**91.91**	**91.91**		**11.77**	**11.77**	**0.51**	**0.51**	**12.13**	**12.13**	**1.55**	**1.55**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Attachment AQ-3b
Operation and Construction Overlap Emissions for Truck Transport
(Jan. 26, 2010)

Calico Solar

Construction Trade Projection (850 MW)

Discipline	Hours	Month After Construction Start																																										Highest Per Day Requirement by Solar One During Project
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
Carpenters	83,472	10	14	31	31	31	43	47	40	36	28	28	28	21	11	11	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	47
Concrete Crews	81,008	9	15	29	29	29	46	46	42	36	24	24	24	21	11	11	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	46
Electricians	212,010	17	28	57	57	57	84	84	60	54	54	54	54	69	69	113	105	105	88	48	48	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0	0	0	0	0	0	113
Ironworkers	100,330	19	23	41	41	41	44	48	36	32	24	24	24	36	26	26	25	25	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	48
Laborers	153,557	17	43	65	62	62	142	142	68	30	30	30	30	56	41	51	46	46	32	22	17	17	17	17	17	17	17	17	10	10	10	10	10	10	10	10	0	0	0	0	0	142
Miscellaneous Crews	10,000	0	0	0	0	0	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Operators	205,183	25	82	93	75	75	86	86	72	59	51	51	51	84	88	67	61	52	34	34	27	26	25	25	25	25	25	25	2	2	2	2	2	2	2	2	1	1	1	0	0	93
Plumbers	25,040	0	5	9	9	9	22	26	26	22	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Solar One Technicians	145,920	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
SunCatcher Assemblers	371,200	0	0	0	0	0	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
SunCatcher Electricians	92,800	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
SunCatcher Ironworkers	185,600	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
SunCatcher Laborers	58,880	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	0	16	16	16	16	16	16	16	16	16
SunCatcher Material Handlers	92,800	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
SunCatcher Operators	29,440	0	0	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8	8	8	8	8	8
SunCatcher Teamsters	44,160	0	0	0	0	0	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	12	12	12	12	12	12
SunCatcher Technicians	185,600	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Teamsters	65,160	4	60	49	24	24	25	25	7	5	5	5	5	31	53	29	28	26	24	24	4	4	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	0	60
Technicians	3,504	0	0	0	0	0	5	5	5	5	5	5	5	5	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Totals	**2,145,664**	**101**	**270**	**374**	**328**	**328**	**719**	**731**	**578**	**501**	**457**	**457**	**457**	**535**	**512**	**521**	**498**	**487**	**420**	**370**	**339**	**314**	**312**	**312**	**312**	**312**	**312**	**312**	**249**	**249**	**249**	**249**	**249**	**285**	**285**	**285**	**230**	**230**	**230**	**230**	**228**	**228**	**818**

Source: Bureau of Labor Statistics, 2008.

Note:

N/A = not applicable

14645 total personnel for 41 months
357 avg monthly personnel
731 max monthly personnel

Data from Appendix V Solar 1
Note does not match Solar 1 Table 3-15 from AFC

Calico Solar
Construction Equipment Projection (850 MW)

| Construction Equipment Description | HP | D | G | P | Month After Construction Start (number of equipment per day) | | |

Calico Solar

Description	Activity	Make / Model	Fuel	Quantity per day per month	Frequency	Horse-power	Vehicle Weight (tons)	Max Daily Onsite Distance per Vehicle (mile/day)	Assumed distance percentage to drive on onsite sealed roads	Assumed distance percentage to drive on onsite unpaved roads	Assumed distance percentage to drive on onsite paved roads	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD jurisdictional area (mile/day)	Offsite Travel to and from	Onsite Travel description
Concrete Delivery Truck for general construction			Diesel	variable - from construction equipment schedule	Daily	250	20	7	90%	10%	0%	74	Barstow	most concrete will be delivered to the MSC area
Concrete Delivery Truck for bridge			Diesel	variable - from construction equipment schedule	Daily	250	20	1.6	90%	10%	0%	74	Barstow	most concrete will be delivered to the bridge construction area
Concrete Pump Truck for bridge			Diesel	variable - from construction equipment schedule	Daily	250	20	0.1	90%	10%	0%	0	on-site only	concrete pump will be used mostly in the MSC area
Dump Truck			Diesel	variable - from construction equipment schedule	Daily	250	20	6.8	50%	50%	0%	0	on-site only	from the MSC area to the any construction area of the site
Flatbed Truck			Diesel	variable - from construction equipment schedule	Daily	250	10	27.2	100%	0%	0%	0	on-site only	delivers materials to installation location
Staff & Security Truck	Site Inspections & Security	Toyota Highlander or similar	Gasoline - Hybrid	6	Daily	187	2.25	48	100%	0%	0%	0	on-site only	travels mainly perimeter and main access road
Pickup Truck			Gasoline	variable - from construction equipment schedule	Daily	175	4	6.8	95%	5%	0%	0	on-site only	from the MSC area to the any construction area of the site
Water/Soiltac Truck			Diesel	variable - from construction equipment schedule	Daily	250	20	13.6	25%	75%	0%	0	on-site only	from the MSC area to the any construction area of the site
General Materials Delivery Truck for general construction	General Construction Materials	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	7	100%	0%	0%	74	Barstow	most materials will be delivered to the MSC area
General Materials Delivery Truck for bridge	General Construction Materials	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	1.6	100%	0%	0%	74	Barstow	most materials will be delivered to the bridge construction area
Suncatcher Delivery Trucks	Suncatcher Pedestals	transport truck	Diesel	variable - from construction equipment schedule	Daily	250	20	7	50%	50%	0%	200	Phoenix	delivers pedestals to installation location
	Stirling Engines	transport truck	Diesel	6	Daily	250	20	7	100%	0%	0%	160	railroad from Detroit to LA and then tranported by truck	delivers materials to MSC
	Suncatcher Metal Supports	transport truck	Diesel	11	Daily	250	20	7	100%	0%	0%	180	from near Phoenix or Los Angeles area.	delivers materials to MSC
	Suncatcher Mirrors	transport truck	Diesel	7	Daily	250	20	7	100%	0%	0%	160	railroad from Detroit to LA and then tranported by truck	delivers materials to MSC
	Electrical and Control Systems	transport truck	Diesel	2	Daily	250	20	7	100%	0%	0%	200	Phoenix	delivers materials to MSC
	Azimuth and Elevation Drive	transport truck	Diesel	2	Daily	250	20	7	100%	0%	0%	160	railroad from Midwest to LA and then tranported by truck	delivers materials to MSC
Water Delivery Trucks	All onsite water will be delivered by truck	3700 gal truck	Diesel	39	Daily	300	11.7	7	100%	0%	0%	128	Cadiz Well	delivers water to tanks in MSC
Worker Passenger Vehicles	Community to Work	Passenger vehicles	Gasoline & diesel	variable - from construction equipment schedule	Daily	100	2	9	100%	0%	0%	74	Barstow	half to MSC and the other half to the main laydown area

Note:

1. Vehicles with variable quantities, the quantity per month can be found in Table 5.2-19 Revised Construction Equipment Projection
2. The average distance from the Project site entrance to bridge construction area, MSC, and the main laydown area is about 0.8, 3.5, and 5.5 miles, one-way, respectively.
3. The average distance between the MSC and the main laydown area is about 2 miles.
4. The fenceline perimeter is approximately 30 miles. Each security vehicle is assumed to travel from the MSC around the perimeter plus one trip to the center of north fenced property (1.8 miles) and the center of south fenced property (5 miles) and back (and plus additional 10% for misc trips) = approximately 48 miles.
5. Average distance from main service complex to center of north and south portion of the site is 1.8 and 5 miles, respectively. Thus, the average round trip distance for each dump truck, pickup truck, and concrete pump truck travels is 6.8 [=(1.8+5)/2*2] miles.
6. Distance for water delivery truck travels was provided by the applicant (about 64 miles one way trip from Cadiz well to Project site entrance).
7. The distance from the Project site to Barstow is about 37 miles.
8. Deliveries coming from Detroit will travel by rail to Los Angeles then by transport truck to the site.
9. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Los Angeles is about 80 miles.
10. The distance from the Project site to the edge of the MDAQMD jurisdictional area toward Phoenix is about 100 miles.
11. On-site travelling:

    Delivery Trucks: mostly from the Project site entrance to the MSC (3.5 miles).

    Worker Passenger Vehicles: from the Project site entrance to either the laydown area in the MSC (3.5 miles) or the main laydown area (5.5 miles).

    Concrete Pump Trucks: mostly in the bridge construction area (traveling less than 0.1 miles per day).

    Flatbed Truck: assumed to make 4 trips per day to SunCatcher installation locations delivering assembled dishes and misc parts

    Water/Soiltac Truck: assumed to make 2 trips per day to SunCatcher instalation locations to watering or seaing the soiltac product.

    Construction laydown area is sealed

Calico Solar
Combustion Exhaust Emissions On-site (short-term)
month 7.

construction schedule = 12 hours per day 7 am to 7 pm pedestal installation = 16 hours per day
delivery trucks can arrive at the site anytime during the day or night

EMISSION FACTORS

				Emission factors (ton/hr)										Emission rate per piece of equipment (lb/hr)									
Equipment	**Load Factor**	**Hours/Day**	**Horsepower**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**ROG**	**NO_x**	**SO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**ROG**	**NO_x**	**SO_2**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Diesel Construction Equipment																							
Air Compressor	0.48	6	50	1.33E-05	1.23E-05	1.42E-04	5.88E-05	1.20E-04	1.44E-07	1.11E-02	5.31E-06	0.00E+00	1.12E-02	2.67E-02	2.46E-02	2.83E-01	1.18E-01	2.39E-01	2.88E-04	2.23E+01	1.06E-02	0.00E+00	2.25E+01
Asphalt Paver	0.59	7	120	4.26E-05	3.92E-05	2.61E-04	8.18E-05	4.84E-04	4.05E-07	3.46E-02	7.38E-06	0.00E+00	3.47E-02	8.52E-02	7.84E-02	5.22E-01	1.64E-01	9.68E-01	8.11E-04	6.91E+01	1.48E-02	0.00E+00	6.94E+01
Backhoe	0.47	6	120	2.57E-05	2.37E-05	1.81E-04	4.54E-05	2.83E-04	3.03E-07	2.58E-02	4.10E-06	0.00E+00	2.59E-02	5.14E-02	4.73E-02	3.62E-01	9.08E-02	5.66E-01	6.06E-04	5.17E+01	8.19E-03	0.00E+00	5.19E+01
Compactor	0.47	6	120	3.20E-05	2.95E-05	2.09E-04	6.00E-05	3.69E-04	3.46E-07	2.95E-02	5.41E-06	0.00E+00	2.96E-02	6.41E-02	5.89E-02	4.17E-01	1.20E-01	7.38E-01	6.91E-04	5.89E+01	1.08E-02	0.00E+00	5.92E+01
Crane small	0.43	5	175	2.69E-05	2.47E-05	2.44E-04	6.05E-05	4.65E-04	4.52E-07	4.01E-02	5.46E-06	0.00E+00	4.03E-02	5.38E-02	4.95E-02	4.88E-01	1.21E-01	9.29E-01	9.03E-04	8.03E+01	1.09E-02	0.00E+00	8.05E+01
Crane large	0.43	7	500	3.42E-05	3.15E-05	3.31E-04	9.10E-05	8.85E-04	8.83E-07	9.00E-02	8.21E-06	0.00E+00	9.01E-02	6.85E-02	6.30E-02	6.62E-01	1.82E-01	1.77E+00	1.77E-03	1.80E+02	1.64E-02	0.00E+00	1.80E+02
Dozer	0.59	7	250	3.92E-05	3.61E-05	2.87E-04	1.03E-04	9.71E-04	9.34E-07	8.30E-02	9.25E-06	0.00E+00	8.32E-02	7.84E-02	7.21E-02	5.74E-01	2.05E-01	1.94E+00	1.87E-03	1.66E+02	1.85E-02	0.00E+00	1.66E+02
Generator	0.74	9	50	1.43E-05	1.32E-05	1.46E-04	5.65E-05	1.54E-04	1.98E-07	1.53E-02	5.10E-06	0.00E+00	1.54E-02	2.86E-02	2.63E-02	2.92E-01	1.13E-01	3.07E-01	3.96E-04	3.06E+01	1.02E-02	0.00E+00	3.08E+01
Grader	0.58	7	175	3.91E-05	3.60E-05	3.70E-04	8.70E-05	6.76E-04	6.97E-07	6.19E-02	7.85E-06	0.00E+00	6.21E-02	7.82E-02	7.19E-02	7.40E-01	1.74E-01	1.35E+00	1.39E-03	1.24E+02	1.57E-02	0.00E+00	1.24E+02
Light Tower	0.62	7	50	1.31E-05	1.21E-05	1.46E-04	5.16E-05	1.39E-04	1.81E-07	1.40E-02	4.66E-06	0.00E+00	1.41E-02	2.63E-02	2.42E-02	2.93E-01	1.03E-01	2.78E-01	3.62E-04	2.80E+01	9.31E-03	0.00E+00	2.82E+01
Loader	0.54	6	250	2.81E-05	2.59E-05	2.10E-04	7.46E-05	7.67E-04	8.37E-07	7.44E-02	6.73E-06	0.00E+00	7.46E-02	5.63E-02	5.18E-02	4.21E-01	1.49E-01	1.53E+00	1.67E-03	1.49E+02	1.35E-02	0.00E+00	1.49E+02
Maxi Sneeker (Trencher)	0.70	8	50	2.02E-05	1.86E-05	2.18E-04	9.18E-05	1.81E-04	2.13E-07	1.64E-02	8.28E-06	0.00E+00	1.66E-02	4.05E-02	3.72E-02	4.36E-01	1.84E-01	3.62E-01	4.25E-04	3.29E+01	1.66E-02	0.00E+00	3.32E+01
Skid Steer (Bobcat)	0.62	7	50	1.08E-05	9.96E-06	1.25E-04	3.92E-05	1.23E-04	1.65E-07	1.27E-02	3.54E-06	0.00E+00	1.28E-02	2.17E-02	1.99E-02	2.50E-01	7.84E-02	2.46E-01	3.30E-04	2.55E+01	7.07E-03	0.00E+00	2.56E+01
Welding Machine	0.45	5	50	1.45E-05	1.33E-05	1.52E-04	6.22E-05	1.36E-04	1.68E-07	1.30E-02	5.62E-06	0.00E+00	1.31E-02	2.90E-02	2.67E-02	3.04E-01	1.24E-01	2.73E-01	3.35E-04	2.59E+01	1.12E-02	0.00E+00	2.62E+01
Equipment fueled with Propane				**Emission factors (ton/hr)**																			
Aerial Lift	0.51	6	120	1.39E-06	1.39E-06	7.09E-04	2.48E-06	1.02E-04	0.00E+00	1.56E-02	2.08E-05	0.00E+00	1.61E-02	2.78E-03	2.78E-03	1.42E+00	4.95E-03	2.03E-01	0.00E+00	3.12E+01	4.15E-02	0.00E+00	3.21E+01
Fork Lift	0.30	4	50	8.14E-07	8.14E-07	1.48E-04	1.41E-06	6.05E-05	0.00E+00	9.15E-03	1.18E-05	0.00E+00	9.40E-03	1.63E-03	1.63E-03	2.95E-01	2.82E-03	1.21E-01	0.00E+00	1.83E+01	2.36E-02	0.00E+00	1.88E+01
Telehandler	0.51	6	120	1.39E-06	1.39E-06	7.09E-04	2.48E-06	1.02E-04	0.00E+00	1.56E-02	2.08E-05	0.00E+00	1.61E-02	2.78E-03	2.78E-03	1.42E+00	4.95E-03	2.03E-01	0.00E+00	3.12E+01	4.15E-02	0.00E+00	3.21E+01
Vehicles with Onroad Engines for Emissions Estimates	Onsite Miles per Day Travelled per Vehicle	**Hours/Day**	**Vehicle Weight (lbs)**	**Emission factors (g/mile)**																			
Concrete Delivery Truck for general construction	7	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.18E-03	1.95E-03	1.61E-02	7.59E-03	3.58E-02	3.85E-05	4.07E+00	6.55E-06	6.17E-06	4.07E+00
Concrete Delivery Truck for bridge	1.6	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	4.98E-04	4.47E-04	3.67E-03	1.73E-03	8.18E-03	8.81E-06	9.30E-01	1.50E-06	1.41E-06	9.30E-01
Concrete Pump Truck for bridge	0.1	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-05	2.79E-05	2.29E-04	1.08E-04	5.11E-04	5.51E-07	5.81E-02	9.36E-08	8.81E-08	5.81E-02
Dump Truck	6.8	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.11E-03	1.90E-03	1.56E-02	7.37E-03	3.48E-02	3.74E-05	3.95E+00	6.37E-06	5.99E-06	3.95E+00
Flatbed Truck	27.2	12	20,000	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	2.90E-03	2.59E-03	2.61E-02	2.26E-03	4.65E-02	6.99E-05	7.51E+00	5.49E-06	8.49E-06	7.52E+00
Staff & Security Truck	48	24	4,500	1.00E-02	1.00E-02	2.10E+00	5.50E-02	3.00E-02	9.00E-03	3.26E+02	1.04E-01	8.13E-02	3.54E+02	4.41E-05	4.41E-05	9.25E-03	2.42E-04	1.32E-04	3.96E-05	1.44E+00	4.56E-04	3.58E-04	1.56E+00
Pickup Truck	6.8	12	8,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	7.44E+02	8.99E-05	6.83E-05	6.29E-03	4.33E-04	5.87E-04	9.74E-06	9.01E-01	8.79E-05	8.08E-05	9.28E-01
Water/Soiltac Truck	13.6	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	4.23E-03	3.80E-03	3.12E-02	1.47E-02	6.96E-02	7.49E-05	7.90E+00	1.27E-05	1.20E-05	7.91E+00
General Materials Delivery Truck for general cons	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
General Materials Delivery Truck for bridge	1.6	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-04	2.23E-04	1.83E-03	8.67E-04	4.09E-03	4.41E-06	4.65E-01	7.49E-07	7.05E-07	4.65E-01
Suncatcher Pedestals Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Stirling Engines Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Suncatcher Metal Supports Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Suncatcher Mirrors Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Electrical and Control Systems Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Azimuth and Elevation Drive Delivery Truck	7	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.09E-03	9.77E-04	8.03E-03	3.79E-03	1.79E-02	1.93E-05	2.03E+00	3.28E-06	3.08E-06	2.03E+00
Water Delivery Trucks	7	24	23,400	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	3.73E-04	3.34E-04	3.35E-03	2.91E-04	5.98E-03	8.99E-06	9.67E-01	7.07E-07	1.09E-06	9.67E-01
Worker Passenger Vehicles	9	24	4,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	3.54E+02	5.95E-05	4.52E-05	4.16E-03	2.87E-04	3.88E-04	5.78E-06	5.96E-01	5.81E-05	5.34E-05	6.14E-01

Notes:

1. Emission factors from CARB Off-road Mobile Source Emission Factors (2006-2020) for diesel and propane equipment. (2009 data used).
   Dozer = Crawler Tractor
   Loader = Rubber Tired Loader
   Backhoe = Tractors/Loaders/Backhoes
   Light Tower = Other Construction Equipment
2. Utilization Load Factors from SCAQMD
3. $PM_{2.5}$ emission factors obtained by multiplying the PM_{10} emissions by $PM_{2.5}$ fraction in SCAQMD CEIDARS list for onroad or offroad diesel vehicles.
4. For propane equipment assumed $PM_{2.5}$ and PM_{10} Fraction of total PM is 1.000
5. Onroad vehicle emissions from EMFAC2007 model. The vehicle description in EMFAC2007 model are as follows:
   - Flatbed Truck and Water Delivery Truck are Medium-Heavy-Duty (MHD-DSL).
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Worker Passenger Vehicle and Pickup Truck are Passenger Car (LDA-ALL)
   - Concrete Delivery Truck, Concrete Pump Truck, Dump Truck, Water/Soiltac Truck, General Materials Delivery Trucks, Suncatcher Pedestals Delivery Truck, Stirling Engines Delivery Truck, Suncatcher Metal Supports Delivery Truck, Suncatcher Mirrors Delivery Truck, Electrical and Control Systems Delivery Truck, and Azimuth & Elevation Drive Delivery Truck are all Heavy-Heavy-Duty (HHD-DSL)
6. The emissions of "Toyota Highlander Hybrid" (Staff & Security Truck) meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
7. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
8. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009. Hybrid Truck is assumed to be gasoline light truck here.
9. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)
   CO_2 GWP (SAR, 1996) = 1
   CH_4 GWP (SAR, 1996) = 21
   N_2O GWP (SAR, 1996) = 310

MONTHLY EMISSIONS (month 1-20)

	Month 1 Daily Emissions (lb/day)											Month 2 Daily Emissions (lb/day)											Month 3 Daily Emissions (lb/day)											Month 4 Daily Emissions (lb/day)										
	Quantity Mo 1	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 2	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 3	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 4	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																												
Air Compressor	1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45	1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
Asphalt Paver	-	-	-	-	-	-	-	-	-	-	-	1.00	0.60	0.56	3.69	1.16	6.86	0.01	489.47	0.10	-	491.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe	3.00	0.87	0.80	6.12	1.54	9.57	0.01	874.45	0.14	-	877.36	9.00	2.61	2.40	18.37	4.61	28.72	0.03	2,623.36	0.42	-	2,632.09	6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
Compactor	2.00	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36	4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72
Crane small	1.00	0.28	0.26	2.52	0.62	4.79	0.00	414.21	0.06	-	415.39	3.00	0.83	0.77	7.55	1.87	14.38	0.01	1,242.62	0.17	-	1,246.16	5.00	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94	6.00	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
Crane large	1.00	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	1.00	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	1.00	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36	4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43
Dozer	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
Generator	1.00	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	1.00	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	1.00	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	-	273.59	2.00	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
Grader	2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03	4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06
Light Tower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
Loader	2.00	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67	4.00	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	4.00	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	6.00	2.19	2.01	16.36	5.80	59.64	0.07	5,787.01	0.52	-	5,798.01
Mavi Sneeker (Trencher)	-	-	-	-	-	-	-	-	-	-	-	2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
Skid Steer (Bobcat)	-	-	-	-	-	-	-	-	-	-	-	1.00	0.16	0.15	1.86	0.58	1.83	0.00	189.69	0.05	-	190.80	1.00	0.16	0.15	1.86	0.58	1.83	0.00	189.69	0.05	-	190.80	2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
Welding Machine	-	-	-	-	-	-	-	-	-	-	-	1.00	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32	2.00	0.31	0.29	3.29	1.34	2.95	0.00	280.10	0.12	-	282.64	3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
Equipment fueled with Propane																																												
Aerial Lift	2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
Fork Lift	2.00	0.01	0.01	2.12	0.02	0.87	-	131.72	0.17	-	135.29	6.00	0.04	0.04	6.37	0.06	2.62	-	395.16	0.51	-	405.88	8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
Telehandler	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	0.02	0.02	8.67	0.03	1.24	-	191.16	0.25	-	196.49	1.00	0.02	0.02	8.67	0.03	1.24	-	191.16	0.25	-	196.49
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Truck for bridge	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16
Concrete Pump Truck for bridge	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70
Dump Truck	3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31	8.00	0.20	0.18	1.50	0.71	3.34	0.00	379.30	0.00	0.00	379.49	8.00	0.20	0.18	1.50	0.71	3.34	0.00	379.30	0.00	0.00	379.49	7.00	0.18	0.16	1.31	0.62	2.92	0.00	331.88	0.00	0.00	332.05
Flatbed Truck	2.00	0.07	0.06	0.63	0.05	1.12	0.00	180.33	0.00	0.00	180.40	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
Staff & Security Truck	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
Pickup Truck	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
Water/Soiltac Truck	5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36	14.00	0.71	0.64	5.24	2.48	11.69	0.01	1,327.54	0.00	0.00	1,328.20	8.00	0.41	0.36	2.99	1.42	6.68	0.01	758.59	0.00	0.00	758.97	8.00	0.41	0.36	2.99	1.42	6.68	0.01	758.59	0.00	0.00	758.97
General Materials Delivery Truck for general cons	-	-	-	-	-	-	-	-	-	-	-	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
General Materials Delivery Truck for bridge	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32
Suncatcher Pedestals Delivery Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
Stirling Engines Delivery Truck	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
Suncatcher Metal Supports Delivery Truck	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
Suncatcher Mirrors Delivery Truck	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
Electrical and Control Systems Delivery Truck	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
Azimuth and Elevation Drive Delivery Truck	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
Water Delivery Trucks	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
Worker Passenger Vehicles	67.00	0.10	0.07	6.69	0.46	0.62	0.01	959.11	0.09	0.09	987.72	180.00	0.26	0.20	17.98	1.24	1.68	0.02	2,576.72	0.25	0.23	2,653.56	249.00	0.36	0.27	24.87	1.71	2.32	0.03	3,564.46	0.35	0.32	3,670.76	219.00	0.31	0.24	21.88	1.51	2.04	0.03	3,135.01	0.31	0.28	3,226.50
Total	**185.00**	**6.83**	**6.24**	**82.38**	**17.16**	**120.83**	**0.14**	**13,418.04**	**1.96**	**0.15**	**13,506.49**	**354.00**	**14.56**	**13.31**	**193.03**	**36.52**	**237.65**	**0.27**	**26,483.47**	**4.88**	**0.30**	**26,679.05**	**419.00**	**13.63**	**12.44**	**205.33**	**35.21**	**230.03**	**0.27**	**26,829.68**	**5.33**	**0.39**	**27,061.87**	**395.00**	**16.67**	**15.24**	**231.48**	**43.98**	**297.38**	**0.34**	**33,073.04**	**6.13**	**0.35**	**33,310.03**

MONTHLY EMISSIONS (month 21-41)

	Month 21 Daily Emissions (lb/day)											Month 22 Daily Emissions (lb/day)											Month 23 Daily Emissions (lb/day)											Month 24 Daily Emissions (lb/day)										
	Quantity Mo 21	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 22	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 23	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 24	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																												
Air Compressor	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94	5	1.39	1.28	12.58	3.12	23.97	0.02	2071.03	0.28	0.00	2076.94
Crane large	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07	3	1.41	1.30	13.67	3.76	36.55	0.04	3713.95	0.34	0.00	3721.07
Dozer	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	2	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	0.00	547.18	1	0.25	0.23	2.59	1.00	2.73	0.00	271.69	0.09	0.00	273.59
Grader	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	1	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	0.00	209.51	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mavi Sneeker (Trencher)	1	0.34	0.31	3.66	1.54	3.04	0.00	276.26	0.14	0.00	279.18	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane																																												
Aerial Lift	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99	2	0.03	0.03	17.34	0.06	2.49	0.00	382.31	0.51	0.00	392.99
Fork Lift	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88	6	0.04	0.04	6.37	0.06	2.62	0.00	395.16	0.51	0.00	405.88
Telehandler	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48	3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Pump Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 5 Daily Emissions (lb/day)											Month 6 Daily Emissions (lb/day)											Month 7 Daily Emissions (lb/day)											Month 8 Daily Emissions (lb/day)										
Quantity Mo 5	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 6	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 7	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 8	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36	3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73	6.00	1.74	1.60	12.25	3.07	19.14	0.02	1,748.90	0.28	-	1,754.73
4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	4.00	1.45	1.33	9.41	2.71	16.64	0.02	1,329.59	0.24	-	1,334.72	3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
6.00	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33	8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11	8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11	8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	4.00	1.88	1.73	18.22	5.01	48.73	0.05	4,951.94	0.45	-	4,961.43	1.00	0.47	0.43	4.56	1.25	12.18	0.01	1,237.98	0.11	-	1,240.36
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91	1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
2.00	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18	5.00	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94	5.00	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94	5.00	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	4.00	2.18	2.00	20.61	4.85	37.63	0.04	3,446.88	0.44	-	3,456.06	3.00	1.63	1.50	15.45	3.63	28.22	0.03	2,585.16	0.33	-	2,592.05	2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02	2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
6.00	2.19	2.01	16.36	5.80	59.64	0.07	5,787.01	0.52	-	5,798.01	5.00	1.82	1.68	13.63	4.83	49.70	0.05	4,822.51	0.44	-	4,831.67	4.00	1.46	1.34	10.90	3.87	39.76	0.04	3,858.01	0.35	-	3,865.34	3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37	5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91	5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59	4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19	3.00	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39	3.00	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61	5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17	8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99	6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96	5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47	5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	5.00	0.03	0.03	0.22	0.10	0.49	0.00	55.78	0.00	0.00	55.81	1.00	0.01	0.01	0.04	0.02	0.10	0.00	11.16	0.00	0.00	11.16	-	-	-	-	-	-	-	-	-	-	-
1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.70	0.00	0.00	0.70	-	-	-	-	-	-	-	-	-	-	-
5.00	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5.00	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5.00	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18	5.00	0.13	0.11	0.94	0.44	2.09	0.00	237.06	0.00	0.00	237.18
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00	10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36	6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52	11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
7.00	0.36	0.32	2.62	1.24	5.84	0.01	663.77	0.00	0.00	664.10	7.00	0.36	0.32	2.62	1.24	5.84	0.01	663.77	0.00	0.00	664.10	5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36	5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.32	0.00	0.00	22.32	12.00	0.07	0.06	0.53	0.25	1.18	0.00	133.87	0.00	0.00	133.94	2.00	0.01	0.01	0.09	0.04	0.20	0.00	22.31	0.00	0.00	22.32	-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49	1.00	0.03	0.02	0.19	0.09	0.43	0.00	48.81	0.00	0.00	48.83
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99	6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14	11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82	7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66	2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32	39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
219.00	0.31	0.24	21.88	1.51	2.04	0.03	3,135.01	0.31	0.28	3,228.50	479.00	0.68	0.52	47.85	3.29	4.46	0.07	6,856.94	0.67	0.61	7,061.43	487.00	0.70	0.53	48.65	3.35	4.54	0.07	6,971.46	0.68	0.62	7,179.37	385.00	0.55	0.42	38.46	2.65	3.59	0.05	5,511.32	0.54	0.49	5,675.68
398.00	**17.40**	**15.92**	**248.13**	**47.12**	**304.72**	**0.35**	**33,819.04**	**6.69**	**0.35**	**34,067.83**	**685.00**	**20.21**	**18.46**	**334.20**	**58.41**	**334.11**	**0.41**	**40,348.92**	**8.89**	**0.68**	**40,747.34**	**673.00**	**18.95**	**17.30**	**315.22**	**55.02**	**308.72**	**0.38**	**37,910.54**	**8.40**	**0.69**	**38,301.64**	**559.00**	**16.06**	**14.66**	**280.61**	**47.47**	**246.55**	**0.31**	**30,446.05**	**7.66**	**0.56**	**30,781.01**

Month 25 Daily Emissions (lb/day)											Month 26 Daily Emissions (lb/day)											Month 27 Daily Emissions (lb/day)											Month 28 Daily Emissions (lb/day)										
Quantity Mo 25	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 26	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 27	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 28	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 9 Daily Emissions (lb/day)										
Quantity Mo 9	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
3.00	0.46	0.42	4.89	2.03	4.13	0.00	384.50	0.18	-	388.36
-	-	-	-	-	-	-	-	-	-	-
5.00	1.45	1.33	10.21	2.56	15.95	0.02	1,457.42	0.23	-	1,462.27
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
5.00	1.27	1.17	12.96	5.02	13.65	0.02	1,358.44	0.45	-	1,367.94
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
3.00	0.48	0.44	5.59	1.75	5.49	0.01	569.08	0.16	-	572.39
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
334.00	0.48	0.36	33.36	2.30	3.11	0.05	4,781.25	0.47	0.43	4,923.84
498.00	**15.06**	**13.75**	**224.99**	**44.93**	**223.22**	**0.28**	**27,087.09**	**6.16**	**0.50**	**27,370.18**

Month 10 Daily Emissions (lb/day)										
Quantity Mo 10	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
8.00	2.22	2.04	20.12	4.99	38.36	0.04	3,313.65	0.45	-	3,323.11
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
7.00	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
1.00	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
2.00	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
334.00	0.48	0.36	33.36	2.30	3.11	0.05	4,781.25	0.47	0.43	4,923.84
498.00	**15.06**	**13.75**	**224.99**	**44.93**	**223.22**	**0.28**	**27,087.09**	**6.16**	**0.50**	**27,370.18**

Month 11 Daily Emissions (lb/day)										
Quantity Mo 11	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7.00	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
7.00	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
1.00	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1.00	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
334.00	0.48	0.36	33.36	2.30	3.11	0.05	4,781.25	0.47	0.43	4,923.84
498.00	**15.06**	**13.75**	**224.99**	**44.93**	**223.22**	**0.28**	**27,087.09**	**6.16**	**0.50**	**27,370.18**

Month 12 Daily Emissions (lb/day)										
Quantity Mo 12	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7.00	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
7.00	1.78	1.64	18.14	7.02	19.11	0.02	1,901.82	0.63	-	1,915.12
1.00	0.54	0.50	5.15	1.21	9.41	0.01	861.72	0.11	-	864.02
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
1.00	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
2.00	0.32	0.30	3.73	1.17	3.66	0.00	379.38	0.11	-	381.59
5.00	0.78	0.72	8.22	3.36	7.37	0.01	700.24	0.30	-	706.61
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
3.00	0.08	0.07	0.58	0.27	1.29	0.00	146.42	0.00	0.00	146.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
334.00	0.48	0.36	33.36	2.30	3.11	0.05	4,781.25	0.47	0.43	4,923.84
498.00	**15.06**	**13.75**	**224.99**	**44.93**	**223.22**	**0.28**	**27,087.09**	**6.16**	**0.50**	**27,370.18**

Month 29 Daily Emissions (lb/day)										
Quantity Mo 29	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 13 Daily Emissions (lb/day)										
Quantity Mo 13	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
7.00	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
-	-	-	-	-	-	-	-	-	-	-
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
357.00	0.51	0.39	35.66	2.46	3.33	0.05	5,110.50	0.50	0.46	5,262.90
505.00	**11.86**	**10.80**	**191.51**	**36.98**	**158.53**	**0.22**	**21,348.66**	**5.26**	**0.52**	**21,621.80**

Month 14 Daily Emissions (lb/day)										
Quantity Mo 14	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
3.00	1.08	1.00	7.06	2.03	12.48	0.01	997.19	0.18	-	1,001.04
9.00	2.50	2.30	22.64	5.62	43.15	0.04	3,727.85	0.51	-	3,738.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
-	-	-	-	-	-	-	-	-	-	-
5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
8.00	0.05	0.05	8.50	0.08	3.49	-	526.89	0.68	-	541.17
5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.08	0.07	0.56	0.27	1.25	0.00	142.24	0.00	0.00	142.31
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
357.00	0.51	0.39	35.66	2.46	3.33	0.05	5,110.50	0.50	0.46	5,262.90
505.00	**11.86**	**10.80**	**191.51**	**36.98**	**158.53**	**0.22**	**21,348.66**	**5.26**	**0.52**	**21,621.80**

Month 15 Daily Emissions (lb/day)										
Quantity Mo 15	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2.00	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
9.00	2.50	2.30	22.64	5.62	43.15	0.04	3,727.85	0.51	-	3,738.49
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
-	-	-	-	-	-	-	-	-	-	-
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
9.00	0.05	0.05	9.56	0.09	3.92	-	592.75	0.77	-	608.81
8.00	0.14	0.14	69.38	0.24	9.95	-	1,529.25	2.03	-	1,571.95
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
357.00	0.51	0.39	35.66	2.46	3.33	0.05	5,110.50	0.50	0.46	5,262.90
505.00	**11.86**	**10.80**	**191.51**	**36.98**	**158.53**	**0.22**	**21,348.66**	**5.26**	**0.52**	**21,621.80**

Month 16 Daily Emissions (lb/day)										
Quantity Mo 16	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2.00	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
7.00	1.94	1.79	17.61	4.37	33.56	0.03	2,899.44	0.39	-	2,907.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
3.00	1.09	1.01	8.18	2.90	29.82	0.03	2,893.51	0.26	-	2,899.00
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
3.00	0.47	0.43	4.93	2.02	4.42	0.01	420.14	0.18	-	423.96
-	-	-	-	-	-	-	-	-	-	-
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
357.00	0.51	0.39	35.66	2.46	3.33	0.05	5,110.50	0.50	0.46	5,262.90
505.00	**11.86**	**10.80**	**191.51**	**36.98**	**158.53**	**0.22**	**21,348.66**	**5.26**	**0.52**	**21,621.80**

Month 17 Daily Emissions (lb/day)										
Quantity Mo 17	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
2.00	0.31	0.28	3.26	1.36	2.75	0.00	256.33	0.12	-	258.90
-	-	-	-	-	-	-	-	-	-	-
4.00	1.16	1.07	8.17	2.05	12.76	0.01	1,165.94	0.18	-	1,169.82
2.00	0.72	0.66	4.71	1.35	8.32	0.01	664.80	0.12	-	667.36
6.00	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
1.00	0.56	0.51	4.06	1.45	13.75	0.01	1,175.16	0.13	-	1,177.91
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
2.00	1.09	1.00	10.30	2.42	18.81	0.02	1,723.44	0.22	-	1,728.03
2.00	0.39	0.36	4.36	1.54	4.14	0.01	416.11	0.14	-	419.02
2.00	0.73	0.67	5.45	1.93	19.88	0.02	1,929.00	0.17	-	1,932.67
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
2.00	0.31	0.29	3.29	1.34	2.95	0.00	280.10	0.12	-	282.64
-	-	-	-	-	-	-	-	-	-	-
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
5.00	0.09	0.09	43.36	0.15	6.22	-	955.78	1.27	-	982.47
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
357.00	0.51	0.39	35.66	2.46	3.33	0.05	5,110.50	0.50	0.46	5,262.90
505.00	**11.86**	**10.80**	**191.51**	**36.98**	**158.53**	**0.22**	**21,348.66**	**5.26**	**0.52**	**21,621.80**

Month 33 Daily Emissions (lb/day)										
Quantity Mo 33	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month 18 Daily Emissions (lb/day)										
Quantity Mo 18	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
-	-	-	-	-	-	-	-	-	-	-
1.00	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
6.00	1.66	1.53	15.09	3.74	28.77	0.03	2,485.23	0.34	-	2,492.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	0.76	0.70	7.78	3.01	8.19	0.01	815.06	0.27	-	820.77
-	-	-	-	-	-	-	-	-	-	-
1.00	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
1.00	0.36	0.34	2.73	0.97	9.94	0.01	964.50	0.09	-	966.33
5.00	1.70	1.56	18.32	7.71	15.19	0.02	1,381.31	0.70	-	1,395.91
4.00	0.64	0.59	7.45	2.33	7.32	0.01	758.77	0.21	-	763.19
1.00	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
6.00	0.10	0.10	52.03	0.18	7.46	-	1,146.94	1.52	-	1,178.96
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	0.35	0.31	3.13	0.27	5.58	0.01	901.67	0.00	0.00	902.00
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
280.00	0.40	0.30	27.97	1.93	2.61	0.04	4,008.23	0.39	0.36	4,127.77
418.00	**8.23**	**7.48**	**188.01**	**26.73**	**121.85**	**0.17**	**17,335.63**	**5.19**	**0.43**	**17,576.83**

Month 19 Daily Emissions (lb/day)										
Quantity Mo 19	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1.00	0.15	0.14	1.63	0.68	1.38	0.00	128.17	0.06	-	129.45
-	-	-	-	-	-	-	-	-	-	-
1.00	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
5.00	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
-	-	-	-	-	-	-	-	-	-	-
1.00	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
-	-	-	-	-	-	-	-	-	-	-
2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
-	-	-	-	-	-	-	-	-	-	-
1.00	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	0.28	0.25	2.50	0.22	4.46	0.01	721.34	0.00	0.00	721.60
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
280.00	0.40	0.30	27.97	1.93	2.61	0.04	4,008.23	0.39	0.36	4,127.77
369.00	**5.48**	**4.96**	**123.12**	**16.78**	**81.55**	**0.12**	**12,680.32**	**3.27**	**0.38**	**12,867.92**

Month 20 Daily Emissions (lb/day)										
Quantity Mo 20	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
1.00	0.29	0.27	2.04	0.51	3.19	0.00	291.48	0.05	-	292.45
-	-	-	-	-	-	-	-	-	-	-
5.00	1.39	1.28	12.58	3.12	23.97	0.02	2,071.03	0.28	-	2,076.94
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	0.51	0.47	5.18	2.01	5.46	0.01	543.38	0.18	-	547.18
-	-	-	-	-	-	-	-	-	-	-
1.00	0.20	0.18	2.18	0.77	2.07	0.00	208.06	0.07	-	209.51
-	-	-	-	-	-	-	-	-	-	-
2.00	0.68	0.63	7.33	3.08	6.08	0.01	552.52	0.28	-	558.37
-	-	-	-	-	-	-	-	-	-	-
1.00	0.16	0.14	1.64	0.67	1.47	0.00	140.05	0.06	-	141.32
2.00	0.03	0.03	17.34	0.06	2.49	-	382.31	0.51	-	392.99
7.00	0.04	0.04	7.43	0.07	3.05	-	461.03	0.60	-	473.52
3.00	0.05	0.05	26.02	0.09	3.73	-	573.47	0.76	-	589.48
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	0.28	0.25	2.50	0.22	4.46	0.01	721.34	0.00	0.00	721.60
6.00	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11.00	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
5.00	0.25	0.23	1.87	0.88	4.17	0.00	474.12	0.00	0.00	474.36
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11.00	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7.00	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2.00	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39.00	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
226.00	0.32	0.25	22.58	1.55	2.11	0.03	3,235.22	0.32	0.29	3,331.70
347.00	**5.30**	**4.79**	**119.39**	**15.95**	**79.98**	**0.12**	**12,251.53**	**3.18**	**0.36**	**12,428.89**

Month 38 Daily Emissions (lb/day)										
Quantity Mo 38	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.10	0.10	52.03	0.18	7.46	0.00	1146.94	1.52	0.00	1178.96
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.07	0.06	0.63	0.05	1.12	0.00	180.33	0.00	0.00	180.40
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
1	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
153	0.22	0.17	15.28	1.05	1.43	0.02	2190.21	0.21	0.20	2255.53
253	**2.70**	**2.43**	**115.09**	**6.97**	**51.47**	**0.07**	**8440.14**	**2.81**	**0.26**	**8580.26**

Month 39 Daily Emissions (lb/day)										
Quantity Mo 39	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.10	0.10	52.03	0.18	7.46	0.00	1146.94	1.52	0.00	1178.96
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.07	0.06	0.63	0.05	1.12	0.00	180.33	0.00	0.00	180.40
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
1	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
153	0.22	0.17	15.28	1.05	1.43	0.02	2190.21	0.21	0.20	2255.53
253	**2.70**	**2.43**	**115.09**	**6.97**	**51.47**	**0.07**	**8440.14**	**2.81**	**0.26**	**8580.26**

Month 40 Daily Emissions (lb/day)										
Quantity Mo 40	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.10	0.10	52.03	0.18	7.46	0.00	1146.94	1.52	0.00	1178.96
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.07	0.06	0.63	0.05	1.12	0.00	180.33	0.00	0.00	180.40
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
1	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
152	0.22	0.16	15.18	1.05	1.42	0.02	2175.90	0.21	0.19	2240.79
252	**2.70**	**2.43**	**114.99**	**6.96**	**51.46**	**0.07**	**8425.82**	**2.80**	**0.26**	**8565.52**

Month 41 Daily Emissions (lb/day)										
Quantity Mo 41	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.11	1.02	10.06	2.50	19.18	0.02	1656.82	0.23	0.00	1661.55
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.10	0.10	52.03	0.18	7.46	0.00	1146.94	1.52	0.00	1178.96
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.05	0.05	26.02	0.09	3.73	0.00	573.47	0.76	0.00	589.48
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.07	0.06	0.63	0.05	1.12	0.00	180.33	0.00	0.00	180.40
6	0.01	0.01	1.33	0.03	0.02	0.01	206.99	0.07	0.05	224.36
11	0.01	0.01	0.83	0.06	0.08	0.00	118.97	0.01	0.01	122.52
1	0.05	0.05	0.37	0.18	0.83	0.00	94.82	0.00	0.00	94.87
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.16	0.14	1.16	0.55	2.58	0.00	292.84	0.00	0.00	292.99
11	0.29	0.26	2.12	1.00	4.73	0.01	536.87	0.00	0.00	537.14
7	0.18	0.16	1.35	0.64	3.01	0.00	341.65	0.00	0.00	341.82
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
2	0.05	0.05	0.39	0.18	0.86	0.00	97.61	0.00	0.00	97.66
39	0.35	0.31	3.14	0.27	5.60	0.01	904.99	0.00	0.00	905.32
152	0.22	0.16	15.18	1.05	1.42	0.02	2175.90	0.21	0.19	2240.79
252	**2.70**	**2.43**	**114.99**	**6.96**	**51.46**	**0.07**	**8425.82**	**2.80**	**0.26**	**8565.52**

Monthly Comparison of Construction Equipment Emissions:

		Daily Emissions (lb/day)										
Month of Contruction	Total Equipment Quantity	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	185	6.83	6.24	82.38	17.16	120.83	0.14	13418.04	1.96	0.153	13506.49
2	354	14.56	13.31	193.03	36.52	237.65	0.27	26483.47	4.88	0.301	26679.05
3	419	13.63	12.44	205.33	35.21	230.03	0.27	26829.68	5.33	0.388	27061.87
4	395	16.67	15.24	231.48	43.98	297.38	0.34	33073.04	6.13	0.349	33310.03
5	398	17.40	15.92	248.13	47.12	304.72	0.35	33819.04	6.69	0.349	34067.83
6	685	20.21	18.46	334.20	58.41	334.11	0.41	40348.92	8.89	0.683	40747.34
7	673	18.95	17.30	315.22	55.02	308.72	0.38	37910.54	8.40	0.693	38301.64
8	559	16.06	14.66	280.61	47.47	246.55	0.31	30446.05	7.66	0.562	30781.01
9	498	15.06	13.75	224.99	44.93	223.22	0.28	27087.09	6.16	0.496	27370.18
10	460	13.86	12.65	212.73	42.25	200.13	0.26	24491.11	5.94	0.458	24757.99
11	455	12.10	11.03	189.60	37.96	160.99	0.22	20884.37	5.31	0.458	21137.85
12	455	12.10	11.03	189.60	37.96	160.99	0.22	20884.37	5.31	0.458	21137.85
13	505	11.86	10.80	191.51	36.98	158.53	0.22	21348.66	5.26	0.525	21621.80
14	502	14.23	12.99	252.04	41.49	220.62	0.27	27166.28	6.89	0.505	27467.32
15	511	13.93	12.72	285.85	40.90	221.51	0.27	27702.85	7.93	0.512	28028.27
16	489	12.76	11.64	254.70	38.26	199.02	0.25	25283.96	7.01	0.493	25584.07
17	476	11.89	10.84	238.07	35.74	180.67	0.23	23379.02	6.54	0.484	23666.47
18	418	8.23	7.48	188.01	26.73	121.85	0.17	17335.63	5.19	0.426	17576.83
19	369	5.48	4.96	123.12	16.78	81.55	0.12	12680.32	3.27	0.384	12867.92
20	347	5.30	4.79	119.39	15.95	79.98	0.12	12251.53	3.18	0.357	12428.89
21	331	5.94	5.38	123.22	17.10	108.96	0.14	15004.73	3.16	0.335	15175.03
22	329	5.59	5.07	119.45	15.56	105.91	0.14	14714.15	3.02	0.334	14881.10
23	326	5.30	4.80	116.53	14.43	102.17	0.13	14316.45	2.95	0.333	14481.85
24	325	5.04	4.56	113.93	13.43	99.44	0.13	14044.76	2.86	0.333	14208.26
25	325	5.04	4.56	113.93	13.43	99.44	0.13	14044.76	2.86	0.333	14208.26
26	318	3.27	2.94	97.17	8.78	56.81	0.09	9770.18	2.47	0.333	9925.31
27	317	3.02	2.71	94.58	7.77	54.08	0.08	9498.49	2.38	0.333	9651.72
28	275	2.96	2.66	90.39	7.48	53.69	0.08	8897.26	2.32	0.279	9032.56
29	273	2.86	2.57	89.64	7.13	52.02	0.08	8707.61	2.32	0.279	8842.81
30	273	2.86	2.57	89.64	7.13	52.02	0.08	8707.61	2.32	0.279	8842.81
31	273	2.86	2.57	89.64	7.13	52.02	0.08	8707.61	2.32	0.279	8842.81
32	267	2.82	2.53	83.27	7.07	49.40	0.08	8312.45	1.81	0.279	8436.94
33	291	2.86	2.56	85.66	7.24	49.63	0.08	8656.01	1.84	0.310	8790.75
34	291	2.86	2.56	85.66	7.24	49.63	0.08	8656.01	1.84	0.310	8790.75
35	295	2.93	2.63	120.35	7.36	54.60	0.08	9420.64	2.86	0.310	9576.72
36	258	2.87	2.59	116.66	7.10	54.26	0.07	8890.98	2.81	0.262	9031.26
37	253	2.70	2.43	115.09	6.97	51.47	0.07	8440.14	2.81	0.262	8580.26
38	253	2.70	2.43	115.09	6.97	51.47	0.07	8440.14	2.81	0.262	8580.26
39	253	2.70	2.43	115.09	6.97	51.47	0.07	8440.14	2.81	0.262	8580.26
40	252	2.70	2.43	114.99	6.96	51.46	0.07	8425.82	2.80	0.261	8565.52
41	252	2.70	2.43	114.99	6.96	51.46	0.07	8425.82	2.80	0.261	8565.52
MAX VALUE (lb/day)	**685**	**20.21**	**18.46**	**334.20**	**58.41**	**334.11**	**0.41**	**40348.9**	**8.89**	**0.693**	**40747.3**

		Annual Emissions (ton/year)									
Months for Annual Contruction		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	12	2.31	2.11	35.19	6.55	36.73	0.045	4363.78	0.94	0.0695	4405.17
2	13	2.37	2.17	36.61	6.81	37.22	0.046	4466.88	0.99	0.0744	4510.67
3	14	2.37	2.16	37.38	6.87	37.00	0.046	4475.76	1.01	0.0770	4520.92
4	15	2.37	2.17	38.43	6.95	36.89	0.046	4487.11	1.05	0.0786	4533.48
5	16	2.32	2.12	38.73	6.87	35.61	0.045	4385.85	1.06	0.0805	4433.04
6	17	2.25	2.05	38.60	6.73	34.00	0.043	4250.13	1.06	0.0822	4297.82
7	18	2.09	1.91	36.70	6.31	31.24	0.040	3950.96	1.01	0.0789	3996.61
8	19	1.92	1.75	34.20	5.82	28.28	0.037	3622.97	0.94	0.0749	3665.97
9	20	1.78	1.62	32.10	5.41	26.12	0.034	3386.44	0.88	0.0722	3427.39
10	21	1.66	1.51	30.78	5.05	24.63	0.032	3229.37	0.84	0.0701	3268.85
11	22	1.55	1.41	29.57	4.70	23.41	0.031	3102.27	0.81	0.0685	3140.45
12	23	1.46	1.33	28.62	4.39	22.64	0.030	3016.88	0.78	0.0669	3053.93
13	24	1.37	1.25	27.64	4.07	21.84	0.029	2927.97	0.74	0.0653	2963.84
14	25	1.28	1.17	26.63	3.77	21.07	0.027	2833.02	0.71	0.0628	2867.47
15	26	1.14	1.04	24.61	3.34	18.95	0.025	2606.87	0.66	0.0606	2639.42
16	27	1.00	0.91	22.13	2.91	16.77	0.023	2370.21	0.58	0.0582	2400.52
17	28	0.87	0.79	19.99	2.51	14.88	0.020	2157.18	0.52	0.0555	2185.35
18	29	0.75	0.68	18.06	2.14	13.21	0.018	1966.46	0.47	0.0528	1992.65
19	30	0.68	0.62	16.78	1.88	12.30	0.017	1854.29	0.43	0.0509	1879.10
20	31	0.65	0.59	16.35	1.76	11.92	0.017	1802.65	0.42	0.0495	1826.78
21	32	0.62	0.56	15.88	1.64	11.52	0.016	1751.44	0.40	0.0485	1774.88
22	33	0.58	0.52	15.39	1.52	10.75	0.015	1668.91	0.38	0.0482	1691.89
23	34	0.54	0.49	14.95	1.41	10.01	0.014	1590.15	0.37	0.0479	1612.71
24	35	0.51	0.46	15.00	1.32	9.40	0.014	1526.50	0.37	0.0476	1548.95
25	36	0.48	0.43	15.04	1.23	8.81	0.013	1459.50	0.37	0.0466	1481.65
26	37	0.45	0.41	15.05	1.15	8.19	0.012	1386.64	0.37	0.0457	1408.48
27	38	0.45	0.40	15.28	1.13	8.12	0.012	1369.35	0.37	0.0448	1391.00
28	39	0.44	0.40	15.55	1.12	8.08	0.012	1355.60	0.38	0.0439	1377.07
29	40	0.44	0.39	15.87	1.11	8.05	0.012	1349.47	0.38	0.0436	1371.00
30	41	0.44	0.39	16.20	1.11	8.05	0.012	1345.80	0.39	0.0434	1367.39
MAX VALUE (ton/year)		**2.37**	**2.17**	**38.73**	**6.95**	**37.22**	**0.05**	**4487.11**	**1.06**	**0.0822**	**4533.48**

Combustion Exhaust Emissions On-site (annual)

months 7-18.

Construction Assumptions - 26 days per month

Equipment	Number of Vehicles per year	Hours/Day	Emission rate per piece of equipment (lb/hr)										Annual Emissions (ton/year)										Number of Vehicles (entire construction period)	entire construction period emissions (ton)									
			PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Diesel Construction Equipment																																	
Air Compressor	26	6	0.027	0.025	0.283	0.118	0.239	0.000	22.251	0.011	0.000	22.474	0.05	0.05	0.55	0.23	0.47	0.00	43.32	0.02	0.00	43.75	37	0.07	0.07	0.78	0.33	0.66	0.00	61.65	0.03	0.00	62.27
Asphalt Paver	0	7	0.085	0.078	0.522	0.164	0.968	0.001	69.134	0.015	0.000	69.444	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.01	0.01	0.05	0.02	0.09	0.00	6.36	0.00	0.00	6.39
Backhoe	50	6	0.051	0.047	0.362	0.091	0.566	0.001	51.682	0.008	0.000	51.854	0.19	0.17	1.33	0.33	2.07	0.00	189.46	0.03	0.00	190.10	88	0.33	0.31	2.34	0.59	3.65	0.00	333.46	0.05	0.00	334.57
Compactor	31	6	0.064	0.059	0.417	0.120	0.738	0.001	58.936	0.011	0.000	59.163	0.15	0.13	0.95	0.27	1.68	0.00	133.96	0.02	0.00	134.47	53	0.25	0.23	1.62	0.47	2.87	0.00	229.02	0.04	0.00	229.91
Crane small	90	5	0.054	0.049	0.488	0.121	0.929	0.001	80.272	0.011	0.000	80.502	0.32	0.30	2.94	0.73	5.61	0.01	484.62	0.07	0.00	486.00	218	0.79	0.72	7.13	1.77	13.59	0.01	1173.86	0.16	0.00	1177.21
Crane large	5	7	0.068	0.063	0.662	0.182	1.771	0.002	179.940	0.016	0.000	180.284	0.03	0.03	0.30	0.08	0.79	0.00	80.47	0.01	0.00	80.62	35	0.21	0.20	2.07	0.57	5.54	0.01	563.28	0.05	0.00	564.36
Dozer	8	7	0.078	0.072	0.574	0.205	1.942	0.002	165.992	0.018	0.000	166.371	0.06	0.05	0.42	0.15	1.43	0.00	122.22	0.01	0.00	122.50	14	0.10	0.09	0.74	0.26	2.50	0.00	213.88	0.02	0.00	214.38
Generator	58	9	0.029	0.026	0.292	0.113	0.307	0.000	30.595	0.010	0.000	30.810	0.19	0.18	1.95	0.76	2.06	0.00	204.85	0.07	0.00	206.29	83	0.27	0.25	2.80	1.08	2.95	0.00	293.15	0.10	0.00	295.20
Grader	14	7	0.078	0.072	0.740	0.174	1.352	0.001	123.810	0.016	0.000	124.140	0.10	0.09	0.94	0.22	1.71	0.00	156.83	0.02	0.00	157.25	36	0.25	0.23	2.41	0.57	4.40	0.00	403.28	0.05	0.00	404.36
Light Tower	23	7	0.026	0.024	0.293	0.103	0.278	0.000	27.964	0.009	0.000	28.160	0.06	0.05	0.65	0.23	0.62	0.00	62.21	0.02	0.00	62.64	32	0.08	0.07	0.91	0.32	0.86	0.00	86.55	0.03	0.00	87.16
Loader	27	6	0.056	0.052	0.421	0.149	1.534	0.002	148.843	0.013	0.000	149.126	0.13	0.12	0.96	0.34	3.49	0.00	338.54	0.03	0.00	339.18	54	0.26	0.24	1.91	0.68	6.98	0.01	677.08	0.06	0.00	678.37
Maxi Sneeker (Trencher)	60	8	0.040	0.037	0.436	0.184	0.362	0.000	32.888	0.017	0.000	33.236	0.27	0.24	2.86	1.20	2.37	0.00	215.48	0.11	0.00	217.76	78	0.34	0.32	3.71	1.56	3.08	0.00	280.13	0.14	0.00	283.09
Skid Steer (Bobcat)	37	7	0.022	0.020	0.250	0.078	0.246	0.000	25.496	0.007	0.000	25.645	0.08	0.07	0.90	0.28	0.88	0.00	91.24	0.03	0.00	91.77	47	0.10	0.09	1.14	0.36	1.12	0.00	115.90	0.03	0.00	116.58
Welding Machine	45	5	0.029	0.027	0.304	0.124	0.273	0.000	25.935	0.011	0.000	26.171	0.09	0.08	0.96	0.39	0.86	0.00	81.93	0.04	0.00	82.67	63	0.13	0.12	1.35	0.55	1.21	0.00	114.70	0.05	0.00	115.74
Equipment fueled with Propane																																	
Aerial Lift	53	6	0.003	0.003	1.417	0.005	0.203	0.000	31.235	0.042	0.000	32.107	0.01	0.01	5.98	0.02	0.86	0.00	131.71	0.18	0.00	135.38	159	0.04	0.04	17.93	0.06	2.57	0.00	395.12	0.53	0.00	406.15
Fork Lift	94	4	0.002	0.002	0.295	0.003	0.121	0.000	18.295	0.024	0.000	18.791	0.01	0.01	1.30	0.01	0.53	0.00	80.48	0.10	0.00	82.66	214	0.02	0.02	2.95	0.03	1.21	0.00	183.22	0.24	0.00	188.19
Telehandler	52	6	0.003	0.003	1.417	0.005	0.203	0.000	31.235	0.042	0.000	32.107	0.01	0.01	5.86	0.02	0.84	0.00	129.22	0.17	0.00	132.83	131	0.03	0.03	14.77	0.05	2.12	0.00	325.54	0.43	0.00	334.63
Vehicles with Onroad Engines for Emissions Estimates																																	
Concrete Delivery Truck for general construction	0	12	0.002	0.002	0.016	0.008	0.036	0.000	4.067	0.000	0.000	4.069	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14	0.00	0.00	0.04	0.02	0.08	0.00	8.88	0.00	0.00	8.89
Concrete Delivery Truck for bridge	1	12	0.000	0.000	0.004	0.002	0.008	0.000	0.930	0.000	0.000	0.930	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.15	11	0.00	0.00	0.01	0.00	0.01	0.00	1.60	0.00	0.00	1.60
Concrete Pump Truck for bridge	1	12	0.000	0.000	0.000	0.000	0.001	0.000	0.058	0.000	0.000	0.058	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	7	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06
Dump Truck	20	12	0.002	0.002	0.016	0.007	0.035	0.000	3.951	0.000	0.000	3.953	0.01	0.01	0.05	0.02	0.11	0.00	12.33	0.00	0.00	12.33	56	0.02	0.02	0.14	0.06	0.30	0.00	34.52	0.00	0.00	34.53
Flatbed Truck	120	12	0.003	0.003	0.026	0.002	0.046	0.000	7.514	0.000	0.000	7.517	0.05	0.05	0.49	0.04	0.87	0.00	140.66	0.00	0.00	140.71	310	0.14	0.13	1.26	0.11	2.25	0.00	363.37	0.00	0.00	363.51
Staff & Security Truck	72	24	0.000	0.000	0.009	0.000	0.000	0.000	1.437	0.000	0.000	1.558	0.00	0.00	0.21	0.01	0.00	0.00	32.29	0.01	0.01	35.00	246	0.00	0.00	0.71	0.02	0.01	0.00	110.33	0.03	0.03	119.58
Pickup Truck	132	12	0.000	0.000	0.006	0.000	0.001	0.000	0.901	0.000	0.000	0.928	0.00	0.00	0.13	0.01	0.01	0.00	18.56	0.00	0.00	19.11	451	0.01	0.00	0.44	0.03	0.04	0.00	63.41	0.01	0.01	65.30
Water/Soiltac Truck	60	12	0.004	0.004	0.031	0.015	0.070	0.000	7.902	0.000	0.000	7.906	0.04	0.04	0.29	0.14	0.65	0.00	73.96	0.00	0.00	74.00	160	0.11	0.09	0.78	0.37	1.74	0.00	197.23	0.00	0.00	197.33
General Materials Delivery Truck for general cons	9	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.00	0.00	0.02	0.01	0.05	0.00	5.71	0.00	0.00	5.71	24	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24
General Materials Delivery Truck for bridge	2	24	0.000	0.000	0.002	0.001	0.004	0.000	0.465	0.000	0.000	0.465	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29	24	0.00	0.00	0.01	0.01	0.03	0.00	3.48	0.00	0.00	3.48
Suncatcher Pedestals Delivery Truck	4	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.00	0.00	0.01	0.00	0.02	0.00	2.54	0.00	0.00	2.54	28	0.01	0.01	0.07	0.03	0.16	0.00	17.77	0.00	0.00	17.77
Stirling Engines Delivery Truck	72	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.02	0.02	0.18	0.09	0.40	0.00	45.68	0.00	0.00	45.71	246	0.08	0.07	0.62	0.29	1.37	0.00	156.08	0.00	0.00	156.16
Suncatcher Metal Supports Delivery Truck	132	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.04	0.04	0.33	0.16	0.74	0.00	83.75	0.00	0.00	83.79	451	0.15	0.14	1.13	0.53	2.52	0.00	286.15	0.00	0.00	286.30
Suncatcher Mirrors Delivery Truck	84	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.03	0.03	0.21	0.10	0.47	0.00	53.30	0.00	0.00	53.32	287	0.10	0.09	0.72	0.34	1.60	0.00	182.10	0.00	0.00	182.19
Electrical and Control Systems Delivery Truck	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	82	0.03	0.02	0.21	0.10	0.46	0.00	52.03	0.00	0.00	52.05
Azimuth and Elevation Drive Delivery Truck	24	24	0.001	0.001	0.008	0.004	0.018	0.000	2.034	0.000	0.000	2.035	0.01	0.01	0.06	0.03	0.13	0.00	15.23	0.00	0.00	15.24	82	0.03	0.02	0.21	0.10	0.46	0.00	52.03	0.00	0.00	52.05
Water Delivery Trucks	468	24	0.000	0.000	0.003	0.000	0.006	0.000	0.967	0.000	0.000	0.967	0.05	0.05	0.49	0.04	0.87	0.00	141.18	0.00	0.00	141.23	1599	0.19	0.17	1.67	0.15	2.98	0.00	482.36	0.00	0.00	482.54
Worker Passenger Vehicles	4103	24	0.000	0.000	0.004	0.000	0.000	0.000	0.596	0.000	0.000	0.614	0.08	0.06	5.33	0.37	0.50	0.01	763.55	0.07	0.07	786.33	9762	0.18	0.14	12.68	0.87	1.18	0.02	1816.67	0.18	0.16	1870.85
	6001										Total		**2.09**	**1.91**	**36.70**	**6.31**	**31.24**	**0.04**	**3950.96**	**1.01**	**0.08**	**3996.61**		**4.34**	**3.95**	**85.34**	**12.31**	**70.73**	**0.09**	**9299.49**	**2.24**	**0.20**	**9407.99**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Calico Solar
Fugitive Dust Emissions (on-site)
month = 7

Maximum annual construction on-site exhausted emissions occurs in months 2-13.

Travel on sealed roads (paved)

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest
7.4 sL = road surface silt loading (grams per square meter) (g/m^2), from Table 13.2.1-4 for Municipal solid waste landfill
W = average weight (tons) of the vehicles traveling the road, and
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants
Solar One Technicians

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)
365 N = number of days in the year (averaging period)

Vehicle Type	Number of Vehicles (month 7)	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on sealed roads	Max Daily Distance per Vehicle to drive on sealed roads (mile/day)	Max Daily VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Number of Vehicles per year (months 7-18)	Max Annual VMT (all vehicles)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Diesel Construction Equipment											
Air Compressor	3	0	0%	0.0	0	0.5	6	26	0	0.000	0.002
Asphalt Paver	0	0.2	0%	0.0	0	25	7	0	0	0.133	0.886
Backhoe	6	0	0%	0.0	0	11	6	50	0	0.038	0.258
Compactor	4	0	0%	0.0	0	10	6	31	0	0.033	0.224
Crane small	8	0.5	50%	0.3	2	10	5	90	585	0.033	0.224
Crane large	4	0.5	0%	0.0	0	35	7	5	0	0.220	1.468
Dozer	1	0	0%	0.0	0	20	7	8	0	0.095	0.634
Generator	5	0	0%	0.0	0	0.5	9	58	0	0.000	0.002
Grader	3	0	0%	0.0	0	20	7	14	0	0.095	0.634
Light Tower	2	0	0%	0.0	0	0.25	7	23	0	0.000	0.000
Loader	4	0	0%	0.0	0	25	6	27	0	0.133	0.886
Maxi Sneeker (Trencher)	5	0	0%	0.0	0	5	8	60	0	0.012	0.079
Skid Steer (Bobcat)	3	0	0%	0.0	0	2	7	37	0	0.003	0.020
Welding Machine	5	0	0%	0.0	0	0.5	5	45	0	0.000	0.002
Equipment fueled with Propane											
Aerial Lift	6	1	50%	0.5	3	4	6	53	689	0.008	0.056
Fork Lift	8	1	50%	0.5	4	3	4	94	1222	0.005	0.036
Telehandler	5	1	50%	0.5	3	3	6	52	676	0.005	0.036
Vehicles with Onroad Engines for Emissions Estimates											
Concrete Delivery Truck for general construction	0	7	90%	6.3	0	20	12	0	0	0.095	0.634
Concrete Delivery Truck for bridge	1	1.6	90%	1.4	1	20	12	1	37.44	0.095	0.634
Concrete Pump Truck for bridge	1	0.1	90%	0.1	0	20	12	1	2.34	0.095	0.634
Dump Truck	5	6.8	50%	3.4	17	20	12	20	1768	0.095	0.634
Flatbed Truck	10	27.2	100%	27.2	272	10	12	120	84864	0.033	0.224
Staff & Security Truck	6	48	100%	48.0	288	2.25	24	72	89856	0.003	0.023
Pickup Truck	11	6.8	95%	6.5	71	4	12	132	22170.72	0.008	0.056
Water/Soiltac Truck	5	13.6	25%	3.4	17	20	12	60	5304	0.095	0.634
General Materials Delivery Truck for general cor	3	7	100%	7.0	21	20	24	9	1638	0.095	0.634
General Materials Delivery Truck for bridge	2	1.6	100%	1.6	3	20	24	2	83.2	0.095	0.634
Suncatcher Pedestals Delivery Truck	3	7	50%	3.5	11	20	24	4	364	0.095	0.634
Stirling Engines Delivery Truck	6	7	100%	7.0	42	20	24	72	13104	0.095	0.634
Suncatcher Metal Supports Delivery Truck	11	7	100%	7.0	77	20	24	132	24024	0.095	0.634
Suncatcher Mirrors Delivery Truck	7	7	100%	7.0	49	20	24	84	15288	0.095	0.634
Electrical and Control Systems Delivery Truck	2	7	100%	7.0	14	20	24	24	4368	0.095	0.634
Azimuth and Elevation Drive Delivery Truck	2	7	100%	7.0	14	20	24	24	4368	0.095	0.634
Water Delivery Trucks	39	7	100%	7.0	273	11.7	24	468	85176	0.042	0.283
Worker Passenger Vehicles	487	9	100%	9.0	4383	2	24	4103	960102	0.003	0.020

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Diesel Construction Equipment															
Air Compressor	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	0%	0%	0.09	0.09	0.45	0.45	0.11%	0.07	0.07	0.01	0.01	0.07	0.07	0.01	0.01
Crane large	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dozer	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane															
Aerial Lift	0%	0%	0.03	0.03	0.17	0.17	0.04%	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
Fork Lift	0%	0%	0.04	0.04	0.15	0.15	0.04%	0.02	0.02	0.01	0.01	0.02	0.02	0.00	0.00
Telehandler	0%	0%	0.01	0.01	0.09	0.09	0.02%	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0%	0%	0.08	0.08	0.91	0.91	0.23%	0.01	0.01	0.01	0.01	0.14	0.14	0.00	0.00
Concrete Pump Truck for bridge	0%	0%	0.00	0.00	0.06	0.06	0.01%	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Dump Truck	0%	0%	0.90	0.90	10.78	10.78	2.66%	0.56	0.56	0.13	0.13	1.61	1.61	0.08	0.08
Flatbed Truck	0%	0%	5.07	5.07	60.89	60.89	15.05%	9.50	9.50	0.75	0.75	9.06	9.06	1.41	1.41
Staff & Security Truck	0%	0%	0.28	0.28	6.76	6.76	1.67%	1.05	1.05	0.04	0.04	0.93	0.93	0.15	0.15
Pickup Truck	0%	0%	0.33	0.33	4.00	4.00	0.99%	0.62	0.62	0.05	0.05	0.58	0.58	0.09	0.09
Water/Soiltac Truck	0%	0%	0.90	0.90	10.78	10.78	2.66%	1.68	1.68	0.13	0.13	1.61	1.61	0.25	0.25
General Materials Delivery Truck for general cor	0%	0%	0.55	0.55	13.31	13.31	3.29%	0.52	0.52	0.08	0.08	1.99	1.99	0.08	0.08
General Materials Delivery Truck for bridge	0%	0%	0.08	0.08	2.03	2.03	0.50%	0.03	0.03	0.01	0.01	0.30	0.30	0.00	0.00
Suncatcher Pedestals Delivery Truck	0%	0%	0.28	0.28	6.66	6.66	1.65%	0.12	0.12	0.04	0.04	1.00	1.00	0.02	0.02
Stirling Engines Delivery Truck	0%	0%	1.11	1.11	26.63	26.63	6.58%	4.15	4.15	0.17	0.17	3.98	3.98	0.62	0.62
Suncatcher Metal Supports Delivery Truck	0%	0%	2.03	2.03	48.82	48.82	12.07%	7.62	7.62	0.30	0.30	7.30	7.30	1.14	1.14
Suncatcher Mirrors Delivery Truck	0%	0%	1.29	1.29	31.07	31.07	7.68%	4.85	4.85	0.19	0.19	4.65	4.65	0.72	0.72
Electrical and Control Systems Delivery Truck	0%	0%	0.37	0.37	8.88	8.88	2.19%	1.38	1.38	0.06	0.06	1.33	1.33	0.21	0.21
Azimuth and Elevation Drive Delivery Truck	0%	0%	0.37	0.37	8.88	8.88	2.19%	1.38	1.38	0.06	0.06	1.33	1.33	0.21	0.21
Water Delivery Trucks	0%	0%	3.22	3.22	77.38	77.38	19.12%	12.07	12.07	0.48	0.48	11.53	11.53	1.80	1.80
Worker Passenger Vehicles	0%	0%	3.58	3.58	85.91	85.91	21.23%	9.41	9.41	0.48	0.48	11.64	11.64	1.27	1.27
TOTAL Fugitive emissions for vehicles traveled on sealed road (paved)			**20.63**	**20.63**	**404.59**	**404.59**		**55.08**	**55.08**	**3.02**	**3.02**	**59.10**	**59.10**	**8.07**	**8.07**

Travel on unpaved surfaces

$E = k * (s/12)^a * (W/3)^b * [(365 - P)/365]$ EPA AP-42 Section 13.2.2 Unpaved Roads Equations 1a and 2

E = size-specific emission factor (lb/VMT)

k, a, b = empirical constants

8.5 s = surface material silt content (%) Construction sites - Scraper routes

W = mean vehicle weight (tons)

constants

	$PM_{2.5}$	PM_{10}
k	0.15	1.5
a	0.9	0.9
b	0.45	0.45

Industrial Roads

23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)

Vehicle Type	Number of Vehicles (month 7)	Max Daily Distance per Vehicle (mile/day)	Assumed distance percentage to drive on unpaved roads	Max Daily Distance per Vehicle to drive on unpaved roads (mile/day)	Max Daily VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Number of Vehicles per year (months 7-18)	Max Annual VMT (all vehicles)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Diesel Construction Equipment											
Air Compressor	3	0	100%	0	0	0.5	6	26	0	0.046	0.460
Asphalt Paver	0	0.2	100%	0.2	0	25	7	0	0	0.268	2.676
Backhoe	6	0	100%	0	0	11	6	50	0	0.185	1.849
Compactor	4	0	100%	0	0	10	6	31	0	0.177	1.771
Crane small	8	0.5	50%	0.25	2	10	5	90	585	0.177	1.771
Crane large	4	0.5	100%	0.5	2	35	7	5	65	0.311	3.113
Dozer	1	0	100%	0	0	20	7	8	0	0.242	2.420
Generator	5	0	100%	0	0	0.5	9	58	0	0.046	0.460
Grader	3	0	100%	0	0	20	7	14	0	0.242	2.420
Light Tower	2	0	100%	0	0	0.25	7	23	0	0.034	0.337
Loader	4	0	100%	0	0	25	6	27	0	0.268	2.676
Maxi Sneeker (Trencher)	5	0	100%	0	0	5	8	60	0	0.130	1.297
Skid Steer (Bobcat)	3	0	100%	0	0	2	7	37	0	0.086	0.859
Welding Machine	5	0	100%	0	0	0.5	5	45	0	0.046	0.460
Equipment fueled with Propane											
Aerial Lift	6	1	50%	0.5	3	4	6	53	689	0.117	1.173
Fork Lift	8	1	50%	0.5	4	3	4	94	1222	0.103	1.030
Telehandler	5	1	50%	0.5	3	3	6	52	676	0.103	1.030
Vehicles with Onroad Engines for Emissions Estimates											
Concrete Delivery Truck for general construction	0	7	10%	0.7	0	20	12	0	0	0.242	2.420
Concrete Delivery Truck for bridge	1	1.6	10%	0.16	0	20	12	1	4.16	0.242	2.420
Concrete Pump Truck for bridge	1	0.1	10%	0.01	0	20	12	1	0.26	0.242	2.420
Dump Truck	5	6.8	50%	3.4	17	20	12	20	1768	0.242	2.420
Flatbed Truck	10	27.2	0%	0	0	10	12	120	0	0.177	1.771
Staff & Security Truck	6	48	0%	0	0	2.25	24	72	0	0.091	0.905
Pickup Truck	11	6.8	5%	0.34	4	4	12	132	1166.88	0.117	1.173
Water/Soiltac Truck	5	13.6	75%	10.2	51	20	12	60	15912	0.242	2.420
General Materials Delivery Truck for general cor	3	7	0%	0	0	20	24	9	0	0.242	2.420
General Materials Delivery Truck for bridge	2	1.6	0%	0	0	20	24	2	0	0.242	2.420
Suncatcher Pedestals Delivery Truck	3	7	50%	3.5	11	20	24	4	364	0.242	2.420
Stirling Engines Delivery Truck	6	7	0%	0	0	20	24	72	0	0.242	2.420
Suncatcher Metal Supports Delivery Truck	11	7	0%	0	0	20	24	132	0	0.242	2.420
Suncatcher Mirrors Delivery Truck	7	7	0%	0	0	20	24	84	0	0.242	2.420
Electrical and Control Systems Delivery Truck	2	7	0%	0	0	20	24	24	0	0.242	2.420
Azimuth and Elevation Drive Delivery Truck	2	7	0%	0	0	20	24	24	0	0.242	2.420
Water Delivery Trucks	39	7	0%	0	0	11.7	24	468	0	0.190	1.901
Worker Passenger Vehicles	487	9	0%	0	0	2	24	4103	0	0.086	0.859

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Diesel Construction Equipment															
Air Compressor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paver	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crane small	0%	68%	0.69	0.22	3.54	1.13	1.65%	0.52	0.17	0.07	0.02	0.35	0.11	0.05	0.02
Crane large	0%	68%	0.90	0.29	6.23	1.99	2.90%	0.10	0.03	0.09	0.03	0.62	0.20	0.01	0.00
Dozer	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Generator	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grader	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Tower	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maxi Sneeker (Trencher)	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer (Bobcat)	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welding Machine	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equipment fueled with Propane															
Aerial Lift	0%	68%	0.57	0.18	3.52	1.13	1.64%	0.40	0.13	0.06	0.02	0.35	0.11	0.04	0.01
Fork Lift	0%	68%	1.14	0.37	4.12	1.32	1.92%	0.63	0.20	0.11	0.04	0.41	0.13	0.06	0.02
Telehandler	0%	68%	0.42	0.13	2.58	0.82	1.20%	0.35	0.11	0.04	0.01	0.26	0.08	0.03	0.01
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0%	68%	0.03	0.01	0.39	0.12	0.18%	0.01	0.00	0.00	0.00	0.04	0.01	0.00	0.00
Concrete Pump Truck for bridge	0%	68%	0.00	0.00	0.02	0.01	0.01%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0%	68%	3.43	1.10	41.14	13.16	19.16%	2.14	0.68	0.34	0.11	4.11	1.32	0.21	0.07
Flatbed Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	0%	68%	0.37	0.12	4.39	1.40	2.04%	0.68	0.22	0.04	0.01	0.44	0.14	0.07	0.02
Water/Soiltac Truck	0%	68%	10.28	3.29	123.41	39.49	57.47%	19.25	6.16	1.03	0.33	12.34	3.95	1.93	0.62
General Materials Delivery Truck for general cor	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Pedestals Delivery Truck	0%	68%	1.06	0.34	25.41	8.13	11.83%	0.44	0.14	0.11	0.03	2.54	0.81	0.04	0.01
Stirling Engines Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Metal Supports Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Mirrors Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electrical and Control Systems Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Azimuth and Elevation Drive Delivery Truck	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Delivery Trucks	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Passenger Vehicles	0%	68%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL Fugitive emissions for vehicles traveled on unpaved surfaces			**18.90**	**6.05**	**214.75**	**68.72**		**24.52**	**7.85**	**1.89**	**0.60**	**21.47**	**6.87**	**2.45**	**0.78**

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily

Bulldozing & grading EPA AP-42 Section 11.9

$E = p * 1 * s^{1.5} / M^{1.4}$ PM10 Emissions from bulldozing (lb/hr) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.75 p = particle size multiplier for PM10
6.9 s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9 M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.75 lb/hr of PM10

$E = p * 5.7 * s^{1.2} / M^{1.3}$ PM2.5 Emissions from bulldozing (lb/hr) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.105 p = particle size multiplier for PM2.5
6.9 s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9 M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.41 lb/hr of PM2.5

$E = p * 0.051 * S^{2.0}$ PM10 Emissions from grading (lb/VMT) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.6 p = particle size multiplier for PM10
7.1 S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
1.54 lb/VMT of PM10

$E = p * 0.040 * S^{2.5}$ PM2.5 Emissions from grading (lb/VMT) Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.031 p = particle size multiplier for PM2.5
7.1 S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
0.17 lb/VMT of PM2.5

Equipment	Quantity/ month	Hours/ Day	VMT/day/ vehicle	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	Number of Vehicles per year (months 7-18)	VMT/year/ vehicle	PM10 Emissions (ton/yr)	PM2.5 Emissions (ton/yr)
Compactor	4	6	2	68%	3.95	0.43	31	1612	0.398	0.043
Dozer	1	7		68%	1.71	0.94	8		0.177	0.097
Maxi Sneeker (Trencher)	5	8	2	68%	4.94	0.53	60	3120	0.770	0.083
Grader	3	7	4	68%	5.92	0.64	14	1456	0.359	0.039
Skid Steer (Bobcat)	3	7		68%	5.38	2.96	37		0.862	0.474
				Grading Total	**14.81**	**1.60**			**1.53**	**0.16**
				Bulldozing Total	**7.08**	**3.89**			**1.04**	**0.57**
				Total	**21.89**	**5.49**			**2.57**	**0.74**

12 months of earth work
12 total construction hours per work day
26 construction days per month

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily

Dirt Piling or Material Handling

$E = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ PM10 Emissions from Material Handling (lb/ton) from EPA AP-42 Chapter 13.2.4 Eq. 1

E = Emission factor (lb/ton material handled)
7.45 U = Mean Wind speed (mph) (from 1991-1995 Imperial Co. airport data)
12 M = Moisture content of surface material (%) (from Table 13.2.4-1 for cover at municipal landfill)

	$PM_{2.5}$	PM_{10}
k	0.053	0.35

0.00003 lb/ton of PM2.5
0.00022 lb/ton of PM10

Equipment	Quantity/ month	Hours/ Day	Material Handled per Day (ton)	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	Number of Vehicles per year (months 7-18)	Material Handled per year (ton)	PM10 Emissions (ton/yr)	PM2.5 Emissions (ton/yr)
Backhoe	6	6	3,236	68%	0.2268	0.0343	50	1009503	0.035	0.005
Loader	4	6	3,236	68%	0.2268	0.0343	27	1009503	0.035	0.005
Dump Truck	5	12	6,471	68%	0.4536	0.0687	1	2,019,006	0.071	0.011
				Total	**0.91**	**0.14**			**0.14**	**0.02**

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily
Assume 50% soil movement from loaders and 50% from backhoes

4,654 yd3/day 6,471 ton/day
1,452,000 yd3/project 2,019,006 tons/project 2781 density of soil (lb/yd3)
(USDA NRCS Physical Soil Properti 0.5 depth of disturbance (yards)
for Niland Fine Sand and Rositas Fine Sand soil)
total project

600 acres = 1,452,000 cubic yds, assume depth of soils moved is
3000 total acres disturbed as described in Table 3-17 of Project Description
only a small portion of this soil is picked up and moved via dump druck

Cover Storage Pile

$E = 1.7 * G/1.5 * (365-H)/235 * I/15 * J$ SCAQMD Table A9-9-E
PM10 Emission factor from wind erosion of storage piles per day per acre

15 G = Silt content (%) (from CEQA Handbook Table A9-9-E-1 for blended ore and dirt)
23 H = Number of days with >= 0.01 inches of precipitation per year (from Daggett FAA Airport Station)
34 I = Percentage of time that the unobstructed wind speed exceeds 12 mph at mean pile height
0.5 J = Fraction of TSP that is PM10 = 0.5
28.039 lb/acre/day

wind speed percentage based on 2005 wind speed data as recorded at Daggett FAA Airport station

Source	Quantity	Size of Pile (acre)	Hours/Day	Days/Year per Pile	Watering Control Efficiency	PM10 Emissions (lb/day)	PM2.5 Emissions (lb/day)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)
Cover Storage Pile	2	1	24	182.5	68%	17.95	3.98	1.64	0.36

Water efficiency from CEQA Table 11-4 maximum value for watering active sites 2 times daily
pile size assumed
piles present only for 6 months

Construction on-site fugitive dust PM10 | **Month 7 construction on-site fugitive dust** | **Months 7-18 construction on-site fugitive dust**

Vehicle Type	Number of Vehicles (month 7)	Max Daily Distance per Vehicle (mile/day)	Sealed Road - PM_{10} Fugitive Emissions	Paved Road - PM_{10} Fugitive Emissions	Unpaved Road - PM_{10} Fugitive Emissions	Earthmoving Equipment - PM_{10} Fugitive Emissions	Total PM_{10} Fugitive Emissions	Sealed Road - PM_{10} Fugitive Emissions	Paved Road - PM_{10} Fugitive Emissions	Unpaved Road - PM_{10} Fugitive Emissions	Earthmoving Equipment - PM_{10} Fugitive Emissions	Total PM_{10} Fugitive Emissions
			lb/day					ton/year				
Diesel Construction Equipment												
Air Compressor	3	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Asphalt Paver	0	0.2	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Backhoe	6	0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.04	0.04
Compactor	4	0	0.00	0.00	0.00	3.95	3.95	0.00	0.00	0.00	0.40	0.40
Crane small	8	0.5	0.45	0.00	1.13		1.58	0.07	0.00	0.17		0.23
Crane large	4	0.5	0.00	0.00	1.99		1.99	0.00	0.00	0.03		0.03
Dozer	1	0	0.00	0.00	0.00	1.71	1.71	0.00	0.00	0.00	0.18	0.18
Generator	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Grader	3	0	0.00	0.00	0.00	5.92	5.92	0.00	0.00	0.00	0.36	0.36
Light Tower	2	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Loader	4	0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.04	0.04
Maxi Sneeker (Trencher)	5	0	0.00	0.00	0.00	4.94	4.94	0.00	0.00	0.00	0.77	0.77
Skid Steer (Bobcat)	3	0	0.00	0.00	0.00	5.38	5.38	0.00	0.00	0.00	0.86	0.86
Welding Machine	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Equipment fueled with Propane												
Aerial Lift	6	1	0.17	0.00	1.13		1.29	0.02	0.00	0.13		0.15
Fork Lift	8	1	0.15	0.00	1.32		1.46	0.02	0.00	0.20		0.22
Telehandler	5	1	0.09	0.00	0.82		0.92	0.01	0.00	0.11		0.12
Vehicles with Onroad Engines for Emissions Estimates												
Concrete Delivery Truck for general construction	0	7	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Concrete Delivery Truck for bridge	1	1.6	0.91	0.00	0.12		1.04	0.01	0.00	0.00		0.01
Concrete Pump Truck for bridge	1	0.1	0.06	0.00	0.01		0.06	0.00	0.00	0.00		0.00
Dump Truck	5	6.8	10.78	0.00	13.16	0.45	24.40	0.56	0.00	0.68	0.07	1.32
Flatbed Truck	10	27.2	60.89	0.00	0.00		60.89	9.50	0.00	0.00		9.50
Staff & Security Truck	6	48	6.76	0.00	0.00		6.76	1.05	0.00	0.00		1.05
Pickup Truck	11	6.8	4.00	0.00	1.40		5.40	0.62	0.00	0.22		0.84
Water/Soiltac Truck	5	13.6	10.78	0.00	39.49		50.27	1.68	0.00	6.16		7.84
General Materials Delivery Truck for general cor	3	7	13.31	0.00	0.00		13.31	0.52	0.00	0.00		0.52
General Materials Delivery Truck for bridge	2	1.6	2.03	0.00	0.00		2.03	0.03	0.00	0.00		0.03
Suncatcher Pedestals Delivery Truck	3	7	6.66	0.00	8.13		14.79	0.12	0.00	0.14		0.26
Stirling Engines Delivery Truck	6	7	26.63	0.00	0.00		26.63	4.15	0.00	0.00		4.15
Suncatcher Metal Supports Delivery Truck	11	7	48.82	0.00	0.00		48.82	7.62	0.00	0.00		7.62
Suncatcher Mirrors Delivery Truck	7	7	31.07	0.00	0.00		31.07	4.85	0.00	0.00		4.85
Electrical and Control Systems Delivery Truck	2	7	8.88	0.00	0.00		8.88	1.38	0.00	0.00		1.38
Azimuth and Elevation Drive Delivery Truck	2	7	8.88	0.00	0.00		8.88	1.38	0.00	0.00		1.38
Water Delivery Trucks	39	7	77.38	0.00	0.00		77.38	12.07	0.00	0.00		12.07
Worker Passenger Vehicles	487	9	85.91	0.00	0.00		85.91	9.41	0.00	0.00		9.41
Storage piles						17.95	17.95				1.64	1.64
			404.59	**0.00**	**68.72**	**40.74**	**514.05**	**55.08**	**0.00**	**7.85**	**4.35**	**67.27**

Construction on-site fugitive dust PM2.5 | **Month 7 construction on-site fugitive dust** | **Months 7-18 construction on-site fugitive dust**

Vehicle Type	Number of Vehicles (month 7)	Max Daily Distance per Vehicle (mile/day)	Sealed Road - PM2.5 Fugitive Emissions	Paved Road - PM2.5 Fugitive Emissions	Unpaved Road - PM2.5 Fugitive Emissions	Earthmoving Equipment - PM2.5 Fugitive Emissions	Total PM2.5 Fugitive Emissions	Sealed Road - PM2.5 Fugitive Emissions	Paved Road - PM2.5 Fugitive Emissions	Unpaved Road - PM2.5 Fugitive Emissions	Earthmoving Equipment - PM2.5 Fugitive Emissions	Total PM2.5 Fugitive Emissions
			lb/day					ton/year				
Diesel Construction Equipment												
Air Compressor	3	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Asphalt Paver	0	0.2	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Backhoe	6	0	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01
Compactor	4	0	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.04	0.04
Crane small	8	0.5	0.07	0.00	0.11		0.18	0.01	0.00	0.02		0.03
Crane large	4	0.5	0.00	0.00	0.20		0.20	0.00	0.00	0.00		0.00
Dozer	1	0	0.00	0.00	0.00	0.94	0.94	0.00	0.00	0.00	0.10	0.10
Generator	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Grader	3	0	0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.00	0.04	0.04
Light Tower	2	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Loader	4	0	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01
Maxi Sneeker (Trencher)	5	0	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.00	0.08	0.08
Skid Steer (Bobcat)	3	0	0.00	0.00	0.00	2.96	2.96	0.00	0.00	0.00	0.47	0.47
Welding Machine	5	0	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Equipment fueled with Propane												
Aerial Lift	6	1	0.02	0.00	0.11		0.14	0.00	0.00	0.01		0.02
Fork Lift	8	1	0.02	0.00	0.13		0.15	0.00	0.00	0.02		0.02
Telehandler	5	1	0.01	0.00	0.08		0.10	0.00	0.00	0.01		0.01
Vehicles with Onroad Engines for Emissions Estimates												
Concrete Delivery Truck for general construction	0	7	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00
Concrete Delivery Truck for bridge	1	1.6	0.14	0.00	0.01		0.15	0.00	0.00	0.00		0.00
Concrete Pump Truck for bridge	1	0.1	0.01	0.00	0.00		0.01	0.00	0.00	0.00		0.00
Dump Truck	5	6.8	1.61	0.00	1.32	0.07	3.00	0.08	0.00	0.07	0.01	0.16
Flatbed Truck	10	27.2	9.06	0.00	0.00		9.06	1.41	0.00	0.00		1.41
Staff & Security Truck	6	48	0.93	0.00	0.00		0.93	0.15	0.00	0.00		0.15
Pickup Truck	11	6.8	0.58	0.00	0.14		0.72	0.09	0.00	0.02		0.11
Water/Soiltac Truck	5	13.6	1.61	0.00	3.95		5.56	0.25	0.00	0.62		0.87
General Materials Delivery Truck for general cor	3	7	1.99	0.00	0.00		1.99	0.08	0.00	0.00		0.08
General Materials Delivery Truck for bridge	2	1.6	0.30	0.00	0.00		0.30	0.00	0.00	0.00		0.00
Suncatcher Pedestals Delivery Truck	3	7	1.00	0.00	0.81		1.81	0.02	0.00	0.01		0.03
Stirling Engines Delivery Truck	6	7	3.98	0.00	0.00		3.98	0.62	0.00	0.00		0.62
Suncatcher Metal Supports Delivery Truck	11	7	7.30	0.00	0.00		7.30	1.14	0.00	0.00		1.14
Suncatcher Mirrors Delivery Truck	7	7	4.65	0.00	0.00		4.65	0.72	0.00	0.00		0.72
Electrical and Control Systems Delivery Truck	2	7	1.33	0.00	0.00		1.33	0.21	0.00	0.00		0.21
Azimuth and Elevation Drive Delivery Truck	2	7	1.33	0.00	0.00		1.33	0.21	0.00	0.00		0.21
Water Delivery Trucks	39	7	11.53	0.00	0.00		11.53	1.80	0.00	0.00		1.80
Worker Passenger Vehicles	487	9	11.64	0.00	0.00		11.64	1.27	0.00	0.00		1.27
Storage piles						3.98	3.98				0.36	0.36
			59.10	**0.00**	**6.87**	**9.61**	**75.59**	**8.07**	**0.00**	**0.78**	**1.12**	**9.98**

Calico Solar

Combustion Exhaust Emissions Off-site (short-term)

To be consistent with on-site emissions, months 7 was used to represent the daily/monthly construction off-site (on-road) emissions.
construction schedule = 12 hours per day 7 am to 7 pm pedestal installation = 16 hours per day
delivery trucks can arrive at the site anytime during the day or night

EMISSION FACTORS

Vehicles with Onroad Engines for Emissions Estimates	Off-site Miles per Day Travelled within MDA(MD) jurisdictional area per Vehicle	Hours/Day	Vehicle Weight (lbs)	Emission factors (g/mile)										Emission rate per piece of equipment (lb/hr)									
				PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Concrete Delivery Truck for general construction	74	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.30E-02	2.07E-02	1.70E-01	8.02E-02	3.79E-01	4.07E-04	4.30E+01	6.93E-05	6.52E-05	4.30E+01
Concrete Delivery Truck for bridge	74	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.30E-02	2.07E-02	1.70E-01	8.02E-02	3.79E-01	4.07E-04	4.30E+01	6.93E-05	6.52E-05	4.30E+01
Concrete Pump Truck for bridge	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dump Truck	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flatbed Truck	0	12	20,000	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Staff & Security Truck	0	24	4,500	1.00E-02	1.00E-02	2.10E+00	5.50E-02	3.00E-02	9.00E-03	3.26E+02	1.04E-01	8.13E-02	3.54E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pickup Truck	0	12	8,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	7.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water/Soiltac Truck	0	12	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
General Materials Delivery Truck for general cons	74	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.15E-02	1.03E-02	8.49E-02	4.01E-02	1.89E-01	2.04E-04	2.15E+01	3.46E-05	3.26E-05	2.15E+01
General Materials Delivery Truck for bridge	74	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	1.15E-02	1.03E-02	8.49E-02	4.01E-02	1.89E-01	2.04E-04	2.15E+01	3.46E-05	3.26E-05	2.15E+01
Suncatcher Pedestals Delivery Truck	200	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-02	2.79E-02	2.29E-01	1.08E-01	5.11E-01	5.51E-04	5.81E+01	9.36E-05	8.81E-05	5.81E+01
Stirling Engines Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Suncatcher Metal Supports Delivery Truck	180	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.80E-02	2.51E-02	2.06E-01	9.75E-02	4.60E-01	4.96E-04	5.23E+01	8.43E-05	7.93E-05	5.23E+01
Suncatcher Mirrors Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Electrical and Control Systems Delivery Truck	200	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	3.11E-02	2.79E-02	2.29E-01	1.08E-01	5.11E-01	5.51E-04	5.81E+01	9.36E-05	8.81E-05	5.81E+01
Azimuth and Elevation Drive Delivery Truck	160	24	40,000	1.69E+00	1.52E+00	1.25E+01	5.91E+00	2.79E+01	3.00E-02	3.17E+03	5.10E-03	4.80E-03	3.17E+03	2.49E-02	2.23E-02	1.83E-01	8.67E-02	4.09E-01	4.41E-04	4.65E+01	7.49E-05	7.05E-05	4.65E+01
Water Delivery Trucks	128	24	23,400	5.80E-01	5.19E-01	5.22E+00	4.53E-01	9.31E+00	1.40E-02	1.51E+03	1.10E-03	1.70E-03	1.51E+03	6.81E-03	6.10E-03	6.13E-02	5.32E-03	1.09E-01	1.64E-04	1.77E+01	1.29E-05	2.00E-05	1.77E+01
Worker Passenger Vehicles	74	24	4,000	7.20E-02	5.47E-02	5.04E+00	3.47E-01	4.70E-01	7.00E-03	7.22E+02	7.04E-02	6.47E-02	3.54E+02	4.89E-04	3.72E-04	3.42E-02	2.36E-03	3.19E-03	4.75E-05	4.90E+00	4.78E-04	4.39E-04	5.05E+00

Notes:

1. Onroad vehicle emissions from EMFAC2007 model. The vehicle description in EMFAC2007 model are as follows:
   - Flatbed Truck and Water Delivery Truck are Medium-Heavy-Duty (MHD-DSL).
   - Staff & Security Truck (gasoline) is Light-Heavy-Duty (LDT2-CAT)
   - Worker Passenger Vehicle and Pickup Truck are Passenger Car (LDA-ALL)
   - Concrete Delivery Truck, Concrete Pump Truck, Dump Truck, Water/Soiltac Truck, General Materials Delivery Trucks, Suncatcher Pedestals Delivery Truck, Stirling Engines Delivery Truck, Suncatcher Metal Supports Delivery Truck, Suncatcher Mirrors Delivery Truck, Electrical and Control Systems Delivery Truck, and Azimuth & Elevation Drive Delivery Truck are all Heavy-Heavy-Duty (HHD-DSL)
2. The emissions of "Toyota Highlander Hybrid" (Staff & Security Truck) meet the Tier 2/Bin 3 Federal emissions standard (reference source 3) and its performance is 27 mile/gallon in city (from Toyota website)
3. SO_2 emission factors for the Toyota Highlander Hybrid are from EMFAC2007- Light-Duty Trucks (LDT2-CAT).
4. CH_4 and N_2O emission factors for the running vehicles are from Reference source 1: Table C.4, California Climate Action Registry General Reporting Protocol Version 3.1, January 2009. Hybrid Truck is assumed to be gasoline light truck here.
5. Greenhouse Gas Global Warming Potential (GWP) - Intergovernmental Panel on Climate Change, Second Assessment Report (1996)
   CO_2 GWP (SAR, 1996) = 1
   CH_4 GWP (SAR, 1996) = 21
   N_2O GWP (SAR, 1996) = 310

MONTHLY EMISSIONS (month 1-20)

	Month 1 Daily Emissions (lb/day)											Month 2 Daily Emissions (lb/day)											Month 3 Daily Emissions (lb/day)											Month 4 Daily Emissions (lb/day)										
	Quantity Mo 1	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 2	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 3	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 4	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	6.00	1.66	1.49	12.22	5.77	27.25	0.03	3,095.72	0.00	0.00	3,097.28	6.00	1.66	1.49	12.22	5.77	27.25	0.03	3,095.72	0.00	0.00	3,097.28	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Truck for bridge	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21
Concrete Pump Truck for bridge	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-
Dump Truck	3.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	7.00	-	-	-	-	-	-	-	-	-	-
Flatbed Truck	2.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-
Staff & Security Truck	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-
Pickup Truck	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-
Water/Soiltac Truck	5.00	-	-	-	-	-	-	-	-	-	-	14.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-	8.00	-	-	-	-	-	-	-	-	-	-
General Materials Delivery Truck for general cons	-	-	-	-	-	-	-	-	-	-	-	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
General Materials Delivery Truck for bridge	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43
Suncatcher Pedestals Delivery Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52
Stirling Engines Delivery Truck	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
Suncatcher Metal Supports Delivery Truck	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
Suncatcher Mirrors Delivery Truck	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
Electrical and Control Systems Delivery Truck	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
Azimuth and Elevation Drive Delivery Truck	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
Water Delivery Trucks	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
Worker Passenger Vehicles	67.00	0.79	0.60	55.03	3.79	5.13	0.08	7,886.04	0.77	0.71	8,121.22	180.00	2.11	1.60	147.84	10.18	13.79	0.21	21,186.37	2.07	1.90	21,818.20	249.00	2.92	2.22	204.51	14.08	19.08	0.28	29,307.81	2.86	2.63	30,181.84	219.00	2.57	1.95	179.87	12.39	16.78	0.25	25,776.75	2.51	2.31	26,545.48
Total	**167.00**	**26.38**	**23.56**	**254.18**	**75.75**	**423.57**	**0.57**	**60,342.01**	**0.84**	**0.78**	**60,601.34**	**309.00**	**29.64**	**26.30**	**361.24**	**88.88**	**464.02**	**0.73**	**77,254.02**	**2.14**	**1.98**	**77,911.82**	**372.00**	**30.45**	**26.91**	**417.92**	**92.79**	**469.31**	**0.81**	**85,375.46**	**2.93**	**2.70**	**86,275.46**	**338.00**	**30.68**	**27.17**	**397.57**	**93.12**	**476.58**	**0.79**	**82,932.09**	**2.59**	**2.39**	**83,727.33**

MONTHLY EMISSIONS (month 21-41)

	Month 21 Daily Emissions (lb/day)											Month 22 Daily Emissions (lb/day)											Month 23 Daily Emissions (lb/day)											Month 24 Daily Emissions (lb/day)										
	Quantity Mo 21	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 22	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 23	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 24	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																												
Concrete Delivery Truck for general construction	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Pump Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general cons	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for bridge	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Suncatcher Pedestals Delivery Truck	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52
Stirling Engines Delivery Truck	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
Suncatcher Metal Supports Delivery Truck	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
Suncatcher Mirrors Delivery Truck	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
Electrical and Control Systems Delivery Truck	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
Azimuth and Elevation Drive Delivery Truck	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
Water Delivery Trucks	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
Worker Passenger Vehicles	209	2.45	1.86	171.66	11.82	16.01	0.24	24599.73	2.40	2.20	25333.36	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14
Total	**308**	**28.90**	**25.59**	**377.14**	**86.78**	**448.57**	**0.75**	**78659.34**	**2.47**	**2.28**	**79417.92**	**307**	**28.89**	**25.58**	**376.31**	**86.72**	**448.49**	**0.75**	**78541.64**	**2.46**	**2.27**	**79296.71**	**305**	**28.89**	**25.58**	**376.31**	**86.72**	**448.49**	**0.75**	**78541.64**	**2.46**	**2.27**	**79296.71**	**305**	**28.89**	**25.58**	**376.31**	**86.72**	**448.49**	**0.75**	**78541.64**	**2.46**	**2.27**	**79296.71**

Month 5 Daily Emissions (lb/day)											Month 6 Daily Emissions (lb/day)										Month 7 Daily Emissions (lb/day)										Month 8 Daily Emissions (lb/day)									
Quantity Mo 5	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 6	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 7	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 8	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	5.00	1.38	1.24	10.18	4.81	22.71	0.02	2,579.77	0.00	0.00	2,581.07	1.00	0.28	0.25	2.04	0.96	4.54	0.00	515.95	0.00	0.00	516.21	-	-	-	-	-	-	-	-	-	-
1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-	-	6.00	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-	-	11.00	-	-	-	-	-	-	-	-	-
7.00	-	-	-	-	-	-	-	-	-	-	7.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-	-	5.00	-	-	-	-	-	-	-	-	-
3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64	3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64
2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	12.00	3.31	2.97	24.44	11.55	54.50	0.06	6,191.45	0.01	0.01	6,194.57	2.00	0.55	0.50	4.07	1.92	9.08	0.01	1,031.91	0.00	0.00	1,032.43	-	-	-	-	-	-	-	-	-	-
3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	3.00	2.24	2.01	16.51	7.80	36.83	0.04	4,183.41	0.01	0.01	4,185.52	1.00	0.75	0.67	5.50	2.60	12.28	0.01	1,394.47	0.00	0.00	1,395.17
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83	6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21	11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97	7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35	2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28	2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42	39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
219.00	2.57	1.95	179.87	12.39	16.78	0.25	25,776.75	2.51	2.31	26,545.48	479.00	5.62	4.27	393.42	27.09	36.70	0.55	56,379.28	5.50	5.05	58,060.66	487.00	5.72	4.34	399.99	27.54	37.31	0.56	57,320.90	5.59	5.14	59,030.36	385.00	4.52	3.43	316.21	21.78	29.49	0.44	45,315.29	4.42	4.06	46,666.71
335.00	**30.68**	**27.17**	**397.57**	**93.12**	**476.58**	**0.79**	**82,932.09**	**2.59**	**2.39**	**83,727.33**	**609.00**	**37.60**	**32.96**	**639.63**	**121.30**	**560.09**	**1.15**	########	**5.59**	**5.14**	########	**601.00**	**33.82**	**29.56**	**617.69**	**108.28**	**497.11**	**1.09**	########	**5.67**	**5.22**	########	**493.00**	**30.31**	**26.56**	**516.79**	**94.42**	**451.12**	**0.94**	**98,133.83**	**4.49**	**4.13**	**99,509.57**

Month 25 Daily Emissions (lb/day)											Month 26 Daily Emissions (lb/day)										Month 27 Daily Emissions (lb/day)										Month 28 Daily Emissions (lb/day)									
Quantity Mo 25	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 26	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 27	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	Quantity Mo 28	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	2.24	2.01	16.51	7.80	36.83	0.04	4183.41	0.01	0.01	4185.52	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83	6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21	11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97	7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35	2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28	2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42	39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	208	2.44	1.85	170.84	11.76	15.93	0.24	24482.03	2.39	2.19	25212.14	166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
305	**28.89**	**25.58**	**376.31**	**86.72**	**448.49**	**0.75**	**78541.64**	**2.46**	**2.27**	**79296.71**	**302**	**26.65**	**23.57**	**359.80**	**78.92**	**411.66**	**0.71**	**74358.23**	**2.45**	**2.26**	**75111.19**	**302**	**26.65**	**23.57**	**359.80**	**78.92**	**411.66**	**0.71**	**74358.23**	**2.45**	**2.26**	**75111.19**	**260**	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**

Month 9 Daily Emissions (lb/day)												Month 10 Daily Emissions (lb/day)												Month 11 Daily Emissions (lb/day)												Month 12 Daily Emissions (lb/day)											
Quantity Mo 9	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 10	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 11	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 12	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
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3.00	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-		10.00	-	-	-	-	-	-	-	-	-	-		10.00	-	-	-	-	-	-	-	-	-	-		10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-		6.00	-	-	-	-	-	-	-	-	-	-		6.00	-	-	-	-	-	-	-	-	-	-		6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-		11.00	-	-	-	-	-	-	-	-	-	-		11.00	-	-	-	-	-	-	-	-	-	-		11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-		5.00	-	-	-	-	-	-	-	-	-	-		5.00	-	-	-	-	-	-	-	-	-	-		5.00	-	-	-	-	-	-	-	-	-	-
3.00	0.83	0.74	6.11	2.89	13.63	0.01	1,547.86	0.00	0.00	1,548.64		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
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6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83		6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83		6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83		6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21		11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21		11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21		11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97		7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97		7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97		7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35		2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35		2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35		2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28		2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28		2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28		2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42		39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42		39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42		39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
334.00	3.92	2.98	274.33	18.89	25.59	0.38	39,312.49	3.83	3.52	40,484.88		305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73		305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73		305.00	3.58	2.72	250.51	17.25	23.37	0.35	35,899.13	3.50	3.22	36,969.73
439.00	**28.96**	**25.44**	**469.40**	**88.93**	**434.94**	**0.87**	**90,736.55**	**3.90**	**3.59**	**91,932.57**		**404.00**	**27.79**	**24.44**	**439.47**	**84.40**	**419.09**	**0.82**	**85,775.33**	**3.57**	**3.29**	**86,868.78**		**404.00**	**27.79**	**24.44**	**439.47**	**84.40**	**419.09**	**0.82**	**85,775.33**	**3.57**	**3.29**	**86,868.78**		**404.00**	**27.79**	**24.44**	**439.47**	**84.40**	**419.09**	**0.82**	**85,775.33**	**3.57**	**3.29**	**86,868.78**

Month 29 Daily Emissions (lb/day)												Month 30 Daily Emissions (lb/day)												Month 31 Daily Emissions (lb/day)												Month 32 Daily Emissions (lb/day)											
Quantity Mo 29	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 30	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 31	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		Quantity Mo 32	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83		6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83		6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83		6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21		11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21		11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21		11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97		7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97		7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97		7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35		2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35		2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35		2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28		2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28		2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28		2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42		39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42		39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42		39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23		166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23		166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23		166	1.95	1.48	136.34	9.39	12.72	0.19	19538.54	1.90	1.75	20121.23
258	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**		**258**	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**		**258**	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**		**258**	**26.16**	**23.20**	**325.30**	**76.54**	**408.44**	**0.66**	**69414.74**	**1.97**	**1.82**	**70020.28**

Month 13 Daily Emissions (lb/day)										
Quantity Mo 13	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
357.00	4.19	3.18	293.22	20.19	27.35	0.41	42,019.63	4.10	3.76	43,272.77
456.00	**28.40**	**24.90**	**482.18**	**87.34**	**423.08**	**0.88**	**91,895.84**	**4.16**	**3.83**	**93,171.81**

Month 14 Daily Emissions (lb/day)										
Quantity Mo 14	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
3.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
341.00	4.00	3.04	280.08	19.29	26.12	0.39	40,136.40	3.91	3.60	41,333.37
443.00	**28.21**	**24.76**	**469.04**	**86.44**	**421.85**	**0.86**	**90,012.60**	**3.98**	**3.67**	**91,232.42**

Month 15 Daily Emissions (lb/day)										
Quantity Mo 15	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
347.00	4.07	3.09	285.00	19.63	26.58	0.40	40,842.61	3.98	3.66	42,060.64
448.00	**28.29**	**24.81**	**473.97**	**86.78**	**422.31**	**0.87**	**90,718.82**	**4.05**	**3.73**	**91,959.69**

Month 16 Daily Emissions (lb/day)										
Quantity Mo 16	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
2.00	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
332.00	3.90	2.96	272.68	18.78	25.43	0.38	39,077.08	3.81	3.50	40,242.46
433.00	**28.11**	**24.68**	**461.65**	**85.93**	**421.16**	**0.85**	**88,953.29**	**3.88**	**3.57**	**90,141.51**

Month 17 Daily Emissions (lb/day)										
Quantity Mo 17	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
325.00	3.81	2.90	266.93	18.38	24.90	0.37	38,253.17	3.73	3.43	39,393.97
424.00	**28.03**	**24.62**	**455.90**	**85.53**	**420.62**	**0.84**	**88,129.37**	**3.80**	**3.50**	**89,293.02**

Month 33 Daily Emissions (lb/day)										
Quantity Mo 33	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
282	**26.44**	**23.41**	**345.02**	**77.90**	**410.28**	**0.69**	**72239.59**	**2.25**	**2.07**	**72929.37**

Month 34 Daily Emissions (lb/day)										
Quantity Mo 34	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
282	**26.44**	**23.41**	**345.02**	**77.90**	**410.28**	**0.69**	**72239.59**	**2.25**	**2.07**	**72929.37**

Month 35 Daily Emissions (lb/day)										
Quantity Mo 35	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
190	2.23	1.69	156.05	10.75	14.56	0.22	22363.39	2.18	2.00	23030.32
282	**26.44**	**23.41**	**345.02**	**77.90**	**410.28**	**0.69**	**72239.59**	**2.25**	**2.07**	**72929.37**

Month 36 Daily Emissions (lb/day)										
Quantity Mo 36	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
245	**26.01**	**23.08**	**314.63**	**75.81**	**407.45**	**0.64**	**67884.62**	**1.82**	**1.68**	**68444.52**

Month 37 Daily Emissions (lb/day)										
Quantity Mo 37	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
240	**26.01**	**23.08**	**314.63**	**75.81**	**407.45**	**0.64**	**67884.62**	**1.82**	**1.68**	**68444.52**

Month 18 Daily Emissions (lb/day)

Quantity Mo 18	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
10.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
280.00	3.29	2.50	229.97	15.84	21.45	0.32	32,956.57	3.21	2.95	33,939.42
379.00	**27.50**	**24.22**	**418.94**	**82.99**	**417.18**	**0.79**	**82,832.78**	**3.28**	**3.02**	**83,838.47**

Month 19 Daily Emissions (lb/day)

Quantity Mo 19	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
247.00	2.90	2.20	202.87	13.97	18.92	0.28	29,072.41	2.83	2.60	29,939.42
344.00	**27.11**	**23.92**	**391.83**	**81.12**	**414.65**	**0.75**	**78,948.61**	**2.90**	**2.67**	**79,838.47**

Month 20 Daily Emissions (lb/day)

Quantity Mo 20	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.00	-	-	-	-	-	-	-	-	-	-
6.00	-	-	-	-	-	-	-	-	-	-
11.00	-	-	-	-	-	-	-	-	-	-
5.00	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
6.00	3.58	3.22	26.42	12.49	58.92	0.06	6,693.46	0.01	0.01	6,696.83
11.00	7.39	6.63	54.49	25.75	121.53	0.13	13,805.25	0.02	0.02	13,812.21
7.00	4.18	3.75	30.82	14.57	68.74	0.07	7,809.03	0.01	0.01	7,812.97
2.00	1.49	1.34	11.01	5.20	24.55	0.03	2,788.94	0.00	0.00	2,790.35
2.00	1.19	1.07	8.81	4.16	19.64	0.02	2,231.15	0.00	0.00	2,232.28
39.00	6.38	5.71	57.41	4.98	102.34	0.15	16,548.37	0.01	0.02	16,554.42
226.00	2.65	2.02	185.62	12.78	17.31	0.26	26,600.66	2.59	2.38	27,393.96
323.00	**26.87**	**23.73**	**374.58**	**79.94**	**413.04**	**0.73**	**76,476.87**	**2.66**	**2.45**	**77,293.01**

Month 38 Daily Emissions (lb/day)

Quantity Mo 38	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
240	**26.01**	**23.08**	**314.63**	**75.81**	**407.45**	**0.64**	**67884.62**	**1.82**	**1.68**	**68444.52**

Month 39 Daily Emissions (lb/day)

Quantity Mo 39	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
153	1.80	1.36	125.66	8.65	11.72	0.17	18008.41	1.76	1.61	18545.47
240	**26.01**	**23.08**	**314.63**	**75.81**	**407.45**	**0.64**	**67884.62**	**1.82**	**1.68**	**68444.52**

Month 40 Daily Emissions (lb/day)

Quantity Mo 40	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
152	1.78	1.36	124.84	8.60	11.64	0.17	17890.71	1.74	1.60	18424.26
239	**26.00**	**23.07**	**313.81**	**75.75**	**407.37**	**0.64**	**67766.92**	**1.81**	**1.67**	**68323.31**

Month 41 Daily Emissions (lb/day)

Quantity Mo 41	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	3.58	3.22	26.42	12.49	58.92	0.06	6693.46	0.01	0.01	6696.83
11	7.39	6.63	54.49	25.75	121.53	0.13	13805.25	0.02	0.02	13812.21
7	4.18	3.75	30.82	14.57	68.74	0.07	7809.03	0.01	0.01	7812.97
2	1.49	1.34	11.01	5.20	24.55	0.03	2788.94	0.00	0.00	2790.35
2	1.19	1.07	8.81	4.16	19.64	0.02	2231.15	0.00	0.00	2232.28
39	6.38	5.71	57.41	4.98	102.34	0.15	16548.37	0.01	0.02	16554.42
152	1.78	1.36	124.84	8.60	11.64	0.17	17890.71	1.74	1.60	18424.26
239	**26.00**	**23.07**	**313.81**	**75.75**	**407.37**	**0.64**	**67766.92**	**1.81**	**1.67**	**68323.31**

Monthly Comparison of Construction Equipment Emissions:

Month of Contruction	Total Equipment Quantity	Daily Emissions (lb/day)										
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	167	26.38	23.56	254.18	75.75	423.57	0.57	60342.01	0.84	0.780	60601.34
2	309	29.64	26.30	361.24	88.88	464.02	0.73	77254.02	2.14	1.977	77911.82
3	372	30.45	26.91	417.92	92.79	469.31	0.81	85375.46	2.93	2.705	86275.46
4	338	30.68	27.17	397.57	93.12	476.58	0.79	82932.09	2.59	2.390	83727.33
5	335	30.68	27.17	397.57	93.12	476.58	0.79	82932.09	2.59	2.390	83727.33
6	609	37.60	32.96	639.63	121.30	560.09	1.15	120757.98	5.59	5.143	122469.50
7	601	33.82	29.56	617.69	108.28	497.11	1.09	114476.24	5.67	5.216	116212.20
8	493	30.31	26.56	516.79	94.42	451.12	0.94	98133.83	4.49	4.134	99509.57
9	439	28.96	25.44	469.40	88.93	434.94	0.87	90736.55	3.90	3.594	91932.57
10	404	27.79	24.44	439.47	84.40	419.09	0.82	85775.33	3.57	3.286	86868.78
11	404	27.79	24.44	439.47	84.40	419.09	0.82	85775.33	3.57	3.286	86868.78
12	404	27.79	24.44	439.47	84.40	419.09	0.82	85775.33	3.57	3.286	86868.78
13	456	28.40	24.90	482.18	87.34	423.08	0.88	91895.84	4.16	3.834	93171.81
14	443	28.21	24.76	469.04	86.44	421.85	0.86	90012.60	3.98	3.665	91232.42
15	448	28.29	24.81	473.97	86.78	422.31	0.87	90718.82	4.05	3.729	91959.69
16	433	28.11	24.68	461.65	85.93	421.16	0.85	88953.29	3.88	3.570	90141.51
17	424	28.03	24.62	455.90	85.53	420.62	0.84	88129.37	3.80	3.497	89293.02
18	379	27.50	24.22	418.94	82.99	417.18	0.79	82832.78	3.28	3.022	83838.47
19	344	27.11	23.92	391.83	81.12	414.65	0.75	78948.61	2.90	2.674	79838.47
20	323	26.87	23.73	374.58	79.94	413.04	0.73	76476.87	2.66	2.453	77293.01
21	308	28.90	25.59	377.14	86.78	448.57	0.75	78659.34	2.47	2.280	79417.92
22	307	28.89	25.58	376.31	86.72	448.49	0.75	78541.64	2.46	2.269	79296.71
23	305	28.89	25.58	376.31	86.72	448.49	0.75	78541.64	2.46	2.269	79296.71
24	305	28.89	25.58	376.31	86.72	448.49	0.75	78541.64	2.46	2.269	79296.71
25	305	28.89	25.58	376.31	86.72	448.49	0.75	78541.64	2.46	2.269	79296.71
26	302	26.65	23.57	359.80	78.92	411.66	0.71	74358.23	2.45	2.263	75111.19
27	302	26.65	23.57	359.80	78.92	411.66	0.71	74358.23	2.45	2.263	75111.19
28	260	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
29	258	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
30	258	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
31	258	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
32	258	26.16	23.20	325.30	76.54	408.44	0.66	69414.74	1.97	1.820	70020.28
33	282	26.44	23.41	345.02	77.90	410.28	0.69	72239.59	2.25	2.073	72929.37
34	282	26.44	23.41	345.02	77.90	410.28	0.69	72239.59	2.25	2.073	72929.37
35	282	26.44	23.41	345.02	77.90	410.28	0.69	72239.59	2.25	2.073	72929.37
36	245	26.01	23.08	314.63	75.81	407.45	0.64	67884.62	1.82	1.683	68444.52
37	240	26.01	23.08	314.63	75.81	407.45	0.64	67884.62	1.82	1.683	68444.52
38	240	26.01	23.08	314.63	75.81	407.45	0.64	67884.62	1.82	1.683	68444.52
39	240	26.01	23.08	314.63	75.81	407.45	0.64	67884.62	1.82	1.683	68444.52
40	239	26.00	23.07	313.81	75.75	407.37	0.64	67766.92	1.81	1.672	68323.31
41	239	26.00	23.07	313.81	75.75	407.37	0.64	67766.92	1.81	1.672	68323.31
MAX VALUE (lb/day)	**609**	**37.60**	**32.96**	**639.63**	**121.30**	**560.09**	**1.15**	**120758.0**	**5.67**	**5.216**	**122469.5**

Months for Annual Contruction		Annual Emissions (ton/year)									
		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
1	12	4.70	4.15	70.08	14.43	71.64	0.133	13913.46	0.54	0.4964	14078.65
2	13	4.73	4.16	73.04	14.58	71.63	0.137	14323.66	0.58	0.5361	14502.07
3	14	4.71	4.14	74.44	14.55	71.08	0.138	14489.52	0.61	0.5581	14675.24
4	15	4.68	4.12	75.17	14.47	70.47	0.139	14558.99	0.62	0.5714	14749.13
5	16	4.65	4.08	76.00	14.37	69.75	0.140	14637.26	0.64	0.5867	14832.52
6	17	4.62	4.05	76.76	14.28	69.02	0.140	14704.83	0.65	0.6011	14904.87
7	18	4.49	3.94	73.89	13.78	67.17	0.136	14211.80	0.62	0.5735	14402.67
8	19	4.40	3.86	70.96	13.43	66.09	0.131	13749.94	0.59	0.5405	13929.81
9	20	4.35	3.83	69.11	13.24	65.60	0.128	13468.40	0.56	0.5186	13640.99
10	21	4.35	3.83	67.91	13.21	65.78	0.127	13311.40	0.54	0.5015	13478.30
11	22	4.37	3.84	67.09	13.24	66.16	0.126	13217.36	0.53	0.4883	13379.87
12	23	4.38	3.86	66.27	13.27	66.54	0.125	13123.32	0.52	0.4751	13281.43
13	24	4.40	3.87	65.44	13.30	66.92	0.124	13029.28	0.50	0.4619	13182.99
14	25	4.40	3.88	64.07	13.29	67.25	0.122	12855.68	0.48	0.4416	13002.62
15	26	4.38	3.87	62.65	13.19	67.12	0.120	12652.17	0.46	0.4233	12793.04
16	27	4.36	3.85	61.16	13.09	66.98	0.118	12439.48	0.44	0.4043	12574.01
17	28	4.33	3.83	59.39	12.97	66.82	0.116	12185.48	0.41	0.3815	12312.43
18	29	4.31	3.81	57.69	12.85	66.66	0.114	11942.19	0.39	0.3597	12061.89
19	30	4.29	3.80	56.48	12.77	66.55	0.112	11767.76	0.37	0.3441	11882.25
20	31	4.28	3.79	55.61	12.71	66.46	0.111	11643.82	0.36	0.3330	11754.62
21	32	4.27	3.78	54.97	12.66	66.40	0.110	11552.01	0.35	0.3247	11660.07
22	33	4.24	3.76	54.55	12.55	65.91	0.109	11468.55	0.35	0.3221	11575.72
23	34	4.21	3.73	54.15	12.43	65.41	0.108	11386.63	0.35	0.3195	11492.94
24	35	4.18	3.70	53.74	12.32	64.91	0.107	11304.70	0.34	0.3170	11410.17
25	36	4.14	3.67	52.94	12.18	64.38	0.106	11166.16	0.34	0.3093	11269.09
26	37	4.10	3.63	52.14	12.04	63.85	0.105	11027.62	0.33	0.3017	11128.01
27	38	4.09	3.63	51.55	12.00	63.79	0.104	10943.46	0.32	0.2942	11041.35
28	39	4.08	3.62	50.96	11.96	63.74	0.103	10859.30	0.31	0.2866	10954.68
29	40	4.08	3.62	50.81	11.94	63.72	0.103	10837.88	0.31	0.2847	10932.62
30	41	4.08	3.62	50.66	11.93	63.71	0.103	10816.46	0.31	0.2828	10910.56
MAX VALUE (ton/year)		**4.73**	**4.16**	**76.76**	**14.58**	**71.64**	**0.14**	**14704.83**	**0.65**	**0.6011**	**14904.87**

Combustion Exhaust Emissions Off-site (annual)

To be consistency to on-site emissions, months 7-18 was used to represent the annual construction off-site (on-road) emissions.
Construction Assumptions - 26 days per month

Equipment	Number of Vehicles per year	Hours/Day	Emission rate per piece of equipment (lb/hr)									Annual Emissions (ton/year)									Number of Vehicles (entire construction period)	entire construction period emissions (ton)								
			PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e		PM_{10}	$PM_{2.5}$	CO	ROG	NO_x	SO_2	CO_2	CH_4	N_2O	CO_2e
Vehicles with Onroad Engines for Emissions Estimates																																
Concrete Delivery Truck for general construction	0	12	0.023	0.021	0.170	0.080	0.379	0.000	42.996	0.000	0.000	43.018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14	0.05	0.05	0.37	0.18	0.83	0.00	93.90	0.00	0.00	93.95
Concrete Delivery Truck for bridge	1	12	0.023	0.021	0.170	0.080	0.379	0.000	42.996	0.000	0.000	43.018	0.00	0.00	0.03	0.01	0.06	0.00	6.71	0.00	0.00	6.71	11	0.04	0.04	0.29	0.14	0.65	0.00	73.78	0.00	0.00	73.82
Concrete Pump Truck for bridge	1	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	20	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	120	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	310	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	72	24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	246	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	132	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	451	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	60	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general cons	9	24	0.012	0.010	0.085	0.040	0.189	0.000	21.498	0.000	0.000	21.509	0.03	0.03	0.24	0.11	0.53	0.00	60.37	0.00	0.00	60.40	24	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06
General Materials Delivery Truck for bridge	2	24	0.012	0.010	0.085	0.040	0.189	0.000	21.498	0.000	0.000	21.509	0.01	0.01	0.05	0.03	0.12	0.00	13.41	0.00	0.00	13.42	24	0.09	0.08	0.64	0.30	1.42	0.00	160.98	0.00	0.00	161.06
Suncatcher Pedestals DeliveryTruck	4	24	0.031	0.028	0.229	0.108	0.511	0.001	58.103	0.000	0.000	58.132	0.04	0.03	0.29	0.14	0.64	0.00	72.51	0.00	0.00	72.55	28	0.27	0.24	2.00	0.95	4.47	0.00	507.59	0.00	0.00	507.84
Stirling Engines Delivery Truck	72	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.56	0.50	4.12	1.95	9.19	0.01	1044.18	0.00	0.00	1044.71	246	1.91	1.71	14.08	6.66	31.41	0.03	3567.61	0.01	0.01	3569.41
Suncatcher Metal Supports Delivery Truck	132	24	0.028	0.025	0.206	0.098	0.460	0.000	52.293	0.000	0.000	52.319	1.15	1.03	8.50	4.02	18.96	0.02	2153.62	0.00	0.00	2154.70	451	3.94	3.53	29.05	13.73	64.78	0.07	7358.20	0.01	0.01	7361.91
Suncatcher Mirrors Delivery Truck	84	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.65	0.59	4.81	2.27	10.72	0.01	1218.21	0.00	0.00	1218.82	287	2.23	2.00	16.43	7.76	36.64	0.04	4162.21	0.01	0.01	4164.31
Electrical and Control Systems Delivery Truck	24	24	0.031	0.028	0.229	0.108	0.511	0.001	58.103	0.000	0.000	58.132	0.23	0.21	1.72	0.81	3.83	0.00	435.07	0.00	0.00	435.29	82	0.80	0.71	5.87	2.77	13.09	0.01	1486.51	0.00	0.00	1487.25
Azimuth and Elevation Drive Delivery Truck	24	24	0.025	0.022	0.183	0.087	0.409	0.000	46.482	0.000	0.000	46.506	0.19	0.17	1.37	0.65	3.06	0.00	348.06	0.00	0.00	348.24	82	0.64	0.57	4.69	2.22	10.47	0.01	1189.20	0.00	0.00	1189.80
Water Delivery Trucks	468	24	0.007	0.006	0.061	0.005	0.109	0.000	17.680	0.000	0.000	17.686	0.99	0.89	8.96	0.78	15.96	0.02	2581.55	0.00	0.00	2582.49	1599	3.40	3.04	30.60	2.65	54.55	0.08	8820.28	0.01	0.01	8823.51
Worker Passenger Vehicles	4103	24	0.000	0.000	0.034	0.002	0.003	0.000	4.904	0.000	0.000	5.051	0.63	0.48	43.81	3.02	4.09	0.06	6278.11	0.61	0.56	6465.34	9762	1.49	1.13	104.23	7.18	9.72	0.14	14937.10	1.46	1.34	15382.56
											Total		**4.49**	**3.94**	**73.89**	**13.78**	**67.17**	**0.14**	**14211.80**	**0.62**	**0.57**	**14402.67**		**14.93**	**13.19**	**208.89**	**44.83**	**229.42**	**0.40**	**42518.34**	**1.49**	**1.38**	**42976.48**

Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night

Calico Solar

Fugitive Dust Emissions (offsite)

To be consistent to on-site emissions, months 7 was used to represent the daily/month construction off-site (on-road) emissions.
To be consistent to on-site emissions, months 7-18 was used to represent the annual construction off-site (on-road) emissions.

Travel on paved road

$E = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C] (1 - P/4N)$ EPA AP-42 Section 13.2.1 Paved Roads Equation 2

E = particulate emission factor (lb/VMT),

k = particle size multiplier for particle size range and units of interest

0.02 sL = road surface silt loading (grams per square meter) (g/m^2), Freeway Local Streets & Freeways (emission inventory code: 640-641-5400-0000), July 1997

W = average weight (tons) of the vehicles traveling the road, and

C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

constants

	$PM_{2.5}$	PM_{10}
k	0.0024	0.016
C	0.00036	0.00047

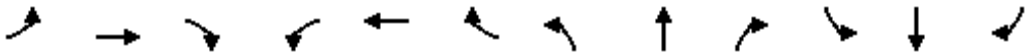
23 P = Mean number of days per year with at least 0.01 inches of precipitation (from Daggett FAA Airport Station)

365 N = number of days in the year (averaging period)

Vehicle Type	Number of Vehicles (month 7)	Number of Vehicles per year (months 7 18)	Max Daily Offsite Round-trip Distance per Vehicle within MDAQMD Jurisdictional Area (mile/day)	Max Daily VMT (all vehicles)	Max Annual VMT (all vehicles)	Mean Vehicle Weight (tons)	Max. Operating Hours / Day	Max. Operating Days / Month	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)
Vehicles with Onroad Engines for Emissions Estimates										
Concrete Delivery Truck for general construction	0	0	74	0	0	20	12	26	0.002	0.013
Concrete Delivery Truck for bridge	1	1	74	74	1924	20	12	26	0.002	0.013
Concrete Pump Truck for bridge	1	1	0	0	0	20	12	26	0.002	0.013
Dump Truck	5	20	0	0	0	20	12	26	0.002	0.013
Flatbed Truck	10	120	0	0	0	10	12	26	0.000	0.004
Staff & Security Truck	6	72	0	0	0	2.25	24	26	0.000	0.000
Pickup Truck	11	132	0	0	0	4	12	26	0.000	0.001
Water/Soiltac Truck	5	60	0	0	0	20	12	26	0.002	0.013
General Materials Delivery Truck for general construc	3	9	74	222	17316	20	24	26	0.002	0.013
General Materials Delivery Truck for bridge	2	2	74	148	3848	20	24	26	0.002	0.013
Suncatcher Pedestals Delivery Truck	3	4	200	600	20800	20	24	26	0.002	0.013
Stirling Engines Delivery Truck	6	72	160	960	299520	20	24	26	0.002	0.013
Suncatcher Metal Supports Delivery Truck	11	132	180	1980	617760	20	24	26	0.002	0.013
Suncatcher Mirrors Delivery Truck	7	84	160	1120	349440	20	24	26	0.002	0.013
Electrical and Control Systems Delivery Truck	2	24	200	400	124800	20	24	26	0.002	0.013
Azimuth and Elevation Drive Delivery Truck	2	24	160	320	99840	20	24	26	0.002	0.013
Water Delivery Trucks	39	468	128	4992	1557504	11.7	24	26	0.001	0.006
Worker Passenger Vehicles	487	4103	74	36038	7894172	2	24	26	6.44E-05	4.30E-04

Vehicle Type	Watering Control Efficiency		PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/day)		% of daily emissions	PM_{10} Emissions (tons/year)		$PM_{2.5}$ Emissions (lb/hr)		$PM_{2.5}$ Emissions (lb/day)		$PM_{2.5}$ Emissions (tons/year)	
	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated		Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Vehicles with Onroad Engines for Emissions Estimates															
Concrete Delivery Truck for general construction	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Delivery Truck for bridge	0%	0%	0.08	0.08	0.97	0.97	0.81%	0.01	0.01	0.01	0.01	0.12	0.12	0.00	0.00
Concrete Pump Truck for bridge	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flatbed Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff & Security Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pickup Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Soiltac Truck	0%	0%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Materials Delivery Truck for general construc	0%	0%	0.12	0.12	2.91	2.91	2.43%	0.11	0.11	0.02	0.02	0.37	0.37	0.01	0.01
General Materials Delivery Truck for bridge	0%	0%	0.08	0.08	1.94	1.94	1.62%	0.03	0.03	0.01	0.01	0.25	0.25	0.00	0.00
Suncatcher Pedestals Delivery Truck	0%	0%	0.33	0.33	7.87	7.87	6.56%	0.14	0.14	0.04	0.04	1.01	1.01	0.02	0.02
Stirling Engines Delivery Truck	0%	0%	0.52	0.52	12.60	12.60	10.50%	1.97	1.97	0.07	0.07	1.62	1.62	0.25	0.25
Suncatcher Metal Supports Delivery Truck	0%	0%	1.08	1.08	25.98	25.98	21.66%	4.05	4.05	0.14	0.14	3.33	3.33	0.52	0.52
Suncatcher Mirrors Delivery Truck	0%	0%	0.61	0.61	14.70	14.70	12.25%	2.29	2.29	0.08	0.08	1.89	1.89	0.29	0.29
Electrical and Control Systems Delivery Truck	0%	0%	0.22	0.22	5.25	5.25	4.38%	0.82	0.82	0.03	0.03	0.67	0.67	0.11	0.11
Azimuth and Elevation Drive Delivery Truck	0%	0%	0.17	0.17	4.20	4.20	3.50%	0.66	0.66	0.02	0.02	0.54	0.54	0.08	0.08
Water Delivery Trucks	0%	0%	1.17	1.17	28.04	28.04	23.37%	4.37	4.37	0.12	0.12	2.78	2.78	0.43	0.43
Worker Passenger Vehicles	0%	0%	0.65	0.65	15.48	15.48	12.91%	1.70	1.70	0.10	0.10	2.32	2.32	0.25	0.25
TOTAL Fugitive emissions for vehicle travel offsite paved roads			**5.04**	**5.04**	**119.95**	**119.95**		**16.14**	**16.14**	**0.63**	**0.63**	**14.91**	**14.91**	**1.98**	**1.98**

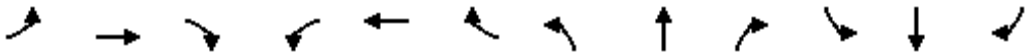
Number of Vehicles per year = sum of monthly daily maximum vehicle usage for the peak 12 months
delivery trucks can arrive at the site anytime during the day or night



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	121	5	614	0	0	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	132	5	667	0	0	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	821	686	8	686	689	667	11			667		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	821	686	8	686	689	667	11			667		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	99	71	100			100		
cM capacity (veh/h)	206	369	1074	360	367	459	1608			922		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	142	673	11
Volume Left	5	5	0
Volume Right	132	0	5
cSH	450	1608	1700
Volume to Capacity	0.32	0.00	0.01
Queue Length 95th (ft)	34	0	0
Control Delay (s)	16.7	0.1	0.0
Lane LOS	C	A	
Approach Delay (s)	16.7	0.1	0.0
Approach LOS	C		

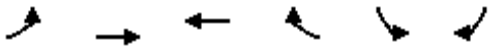
Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	51.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	619	5	5	0	0	0	0	5	5	5	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	673	5	5	0	0	0	0	5	5	5	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	24	27	5	33	24	8	5			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	24	27	5	33	24	8	5			11		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	32	99	99	100	100	100	100			100		
cM capacity (veh/h)	984	863	1078	963	866	1074	1616			1608		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	684	11	11
Volume Left	673	0	5
Volume Right	5	5	0
cSH	984	1700	1608
Volume to Capacity	0.70	0.01	0.00
Queue Length 95th (ft)	148	0	0
Control Delay (s)	16.5	0.0	3.6
Lane LOS	C		A
Approach Delay (s)	16.5	0.0	3.6
Approach LOS	C		

Intersection Summary				
Average Delay	16.1			
Intersection Capacity Utilization	46.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	5	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	11				24	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				24	8
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1608				988	1074

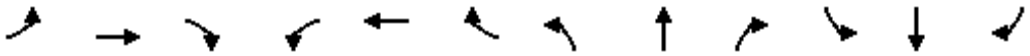
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	11	11
Volume Left	5	0	5
Volume Right	0	5	5
cSH	1608	1700	1029
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization		14.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	5	5	5	0	0	168	602
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	5	5	5	0	0	183	654
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	534	526	510	526	853	5	837			5		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	534	526	510	526	853	5	837			5		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	98	99	99			100		
cM capacity (veh/h)	446	454	564	460	294	1078	797			1616		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	11	837
Volume Left	5	5	0
Volume Right	5	0	654
cSH	461	797	1700
Volume to Capacity	0.04	0.01	0.49
Queue Length 95th (ft)	3	1	0
Control Delay (s)	13.1	4.8	0.0
Lane LOS	B	A	
Approach Delay (s)	13.1	4.8	0.0
Approach LOS	B		

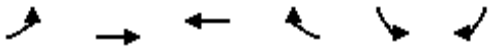
Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		55.9%	ICU Level of Service B
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	5	0	0	0	0	10	5	203	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	0	0	0	0	11	5	221	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	460	463	5	468	460	14	5			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	460	463	5	468	460	14	5			16		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	100	100	100	100			86		
cM capacity (veh/h)	457	428	1078	445	429	1066	1616			1601		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	16	226
Volume Left	5	0	221
Volume Right	5	5	0
cSH	550	1700	1601
Volume to Capacity	0.03	0.01	0.14
Queue Length 95th (ft)	2	0	12
Control Delay (s)	11.7	0.0	7.4
Lane LOS	B		A
Approach Delay (s)	11.7	0.0	7.4
Approach LOS	B		

Intersection Summary			
Average Delay		7.3	
Intersection Capacity Utilization		28.2%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	10	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	11	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	16				27	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				27	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1601				985	1070

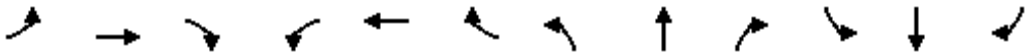
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	16	11
Volume Left	5	0	5
Volume Right	0	11	5
cSH	1601	1700	1026
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay		3.5	
Intersection Capacity Utilization		14.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	43	5	114	0	0	8	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	47	5	124	0	0	9	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	200	151	16	151	158	124	23			124		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	200	151	16	151	158	124	23			124		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	99	95	100			100		
cM capacity (veh/h)	714	739	1064	815	732	927	1592			1463		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	58	129	23
Volume Left	5	5	0
Volume Right	47	0	14
cSH	893	1592	1700
Volume to Capacity	0.06	0.00	0.01
Queue Length 95th (ft)	5	0	0
Control Delay (s)	9.3	0.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.3	0.0
Approach LOS	A		

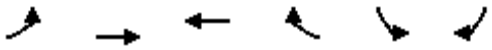
Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	20.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	119	5	5	0	0	0	0	5	5	8	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	5	5	0	0	0	0	5	5	9	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	31	34	5	39	31	8	5			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	31	34	5	39	31	8	5			11		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	99	99	100	100	100	100			99		
cM capacity (veh/h)	973	854	1078	952	857	1074	1616			1608		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	140	11	14
Volume Left	129	0	9
Volume Right	5	5	0
cSH	972	1700	1608
Volume to Capacity	0.14	0.01	0.01
Queue Length 95th (ft)	13	0	0
Control Delay (s)	9.3	0.0	4.5
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	4.5
Approach LOS	A		

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	5	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	11				24	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				24	8
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1608				988	1074

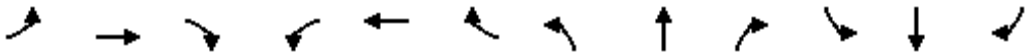
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	11	11
Volume Left	5	0	5
Volume Right	0	5	5
cSH	1608	1700	1029
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	5	6	5	9	0	0	33	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	5	5	7	5	10	0	0	36	122
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	127	117	97	117	178	10	158			10		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	127	117	97	117	178	10	158			10		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	99	99	100			100		
cM capacity (veh/h)	834	770	960	856	713	1072	1422			1610		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	17	15	158
Volume Left	5	5	0
Volume Right	7	0	122
cSH	867	1422	1700
Volume to Capacity	0.02	0.00	0.09
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.2	2.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	2.7	0.0
Approach LOS	A		

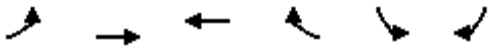
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	5	5	0	0	0	0	10	5	42	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	5	5	0	0	0	0	11	5	46	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	110	113	5	118	110	14	5			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110	113	5	118	110	14	5			16		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	100	100	100	100			97		
cM capacity (veh/h)	849	755	1078	830	758	1066	1616			1601		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	21	16	51
Volume Left	10	0	46
Volume Right	5	5	0
cSH	869	1700	1601
Volume to Capacity	0.02	0.01	0.03
Queue Length 95th (ft)	2	0	2
Control Delay (s)	9.2	0.0	6.6
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	6.6
Approach LOS	A		

Intersection Summary				
Average Delay		6.0		
Intersection Capacity Utilization	19.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	5	5	10	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	5	11	5	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	16				27	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	16				27	11
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1601				985	1070

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	16	11
Volume Left	5	0	5
Volume Right	0	11	5
cSH	1601	1700	1026
Volume to Capacity	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	3.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay		3.5	
Intersection Capacity Utilization		14.7%	ICU Level of Service A
Analysis Period (min)		15	

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION
For the SES SOLAR ONE PROJECT

Docket No. 08-AFC-13

PROOF OF SERVICE
(Revised 12/2/09)

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*indicates change

DECLARATION OF SERVICE

I Corinne Lytle , declare that on January 28, 2010, I served and filed copies of the attached Applicant's Submittal of Information Supplemental to the Application for Certification.The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:

[www.energy.ca.gov/sitingcases/solarone].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(***Check all that Apply***)

FOR SERVICE TO ALL OTHER PARTIES:

_____ sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery or by depositing in the United States mail at with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_____ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

~~***OR***~~

depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-13
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Original signed by

Corinne Lytle

*indicates change