ATTACHMENT A
Tech Memo Approval Form

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Construction Related Emissions Analysis HAR Units 2 and 3

Revision History:

Revision Number	Description	Approval Date	Affected Pages
0	Initial Submittal	04/23/2009	ALL
1	Tech Memo revised to provide additional detail for conformity determination.	06/22/2009	ALL

Document Review and Approval

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Project Manager:	Lorin Young/Project Manager	06/22/09
	Name/Position	Approval Date
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Construction Related Emissions Analysis HAR Units 2 and 3

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COPIES:	Lorin Young/IDF
DATE:	6/22/2009
PROJECT NUMBER:	338884

Purpose

This analysis was designed to estimate the emissions associated with the construction of the proposed Harris Advanced Reactor Units 2 and 3 (HAR). The HAR site will be co-located with the existing Shearon Harris Nuclear Power Plant Unit 1 (HNP). The site is located in Wake County, North Carolina which is currently designated a maintenance area for ozone and carbon monoxide and in attainment for all other criteria pollutants. Because of the "maintenance" classification of Wake County, these emissions are being estimated to facilitate compliance with the U.S. Environmental Protection Agency's (USEPA) conformity regulations.

The USEPA has issued regulations on the applicability of, and procedures for, ensuring that federally funded activities comply with the Clean Air Act Amendments of 1990. The USEPA Final Conformity Rules require all federal agencies to ensure that any federal action resulting in emissions of criteria pollutants for which an area is designated as either non-attainment or maintenance conforms with the approved or promulgated state implementation plan (SIP) or federal implementation plan (FIP). Conformity means compliance with a SIP/FIP's purpose of attaining or maintaining the National Ambient Air Quality Standards (NAAQS). Specifically, this means ensuring that the proposed action will not: (1) cause or contribute to a new violation of the NAAQS, (2) contribute to any increase in the frequency or severity of violations of existing NAAQS, or (3) delay the timely attainment of any NAAQS interim milestone or other attainment milestone.

A list of the construction equipment that will be used on the project as well as a list of the assumptions regarding the use of this equipment has been used to develop an inventory of emissions for the construction phase of the project as described later in this document.

Emission Factor Estimating Models Used in the Analysis

The USEPA's MOBILE6.2 model was used to calculate emission factors for diesel-fueled on-road vehicles that will be used on the project site (i.e., concrete mix trucks and delivery

trucks) during the construction of HAR Units 2 and 3. The MOBILE6.2 model was used to estimate emission factors for hydrocarbons, carbon monoxide, and oxides of nitrogen for diesel-fueled on-road construction vehicles used at the site during construction.

The USEPA's NONROAD2008 model was used to calculate emission factors for non-road diesel-fueled construction vehicles and equipment that will be used onsite during construction. The NONROAD2008 model was used to estimate emission factors for hydrocarbons, carbon monoxide, and oxides of nitrogen for a diverse collection of vehicles and equipment (i.e., all-terrain vehicles, construction equipment, and industrial equipment) that will be used during construction.

Rail emissions occurring onsite were estimated using an EPA recommended procedure for estimating emissions from locomotives.

Emissions Factors

The input parameters that were specified for the MOBILE6.2 model are provided in Table 1 and are consistent with guidance provided by the North Carolina Division of Air Quality (NC-DAQ) for estimating construction emissions in Wake County. The emission factors for diesel-fueled motor vehicles were based on a typical work day during two seasons (winter and summer) and one speed (10 miles per hour (mph)). Copies of the MOBILE6.2 model input and output are provided in Appendix A-1.

Table 1
MOBILE6.2 Model Input Data
On-Road Vehicles Used on the Project Site During Construction
HAR Units 2 and 3.

Model Parameter	Data Input
Calendar Year	2011 - 2017
Month, Winter	January
Month, Summer	July
Minimum Winter Temperature, °F	51.5
Maximum Winter Temperature, °F	51.5
Minimum Summer Temperature, °F	68.1
Maximum Summer Temperature, °F	88.9
Hourly Summer Temperatures, °F (00 - 23 hrs)	73, 73, 74, 77, 78, 81, 82, 85, 86, 89, 89, 88, 86, 86, 84, 81, 80, 77, 76, 75, 74, 73, 73, 73
Barometric Pressure, in. Hg	30
Hourly Summer Relative Humidity, % (00 - 23 hrs)	96, 96, 88, 80, 77, 68, 64, 54, 53, 50, 49, 51, 57, 60, 67, 70, 75, 82, 86, 90, 93, 94, 95, 96
Winter Fuel RVP, psi	14.25
Summer Fuel RVP, psi	7.8

Table 1
MOBILE6.2 Model Input Data
On-Road Vehicles Used on the Project Site During Construction
HAR Units 2 and 3.

Model Parameter	Data Input
Average Speed On-site, mph	10
Diesel Fuel Sulfur Content, ppm	15
Exhaust I/M Program	No
Vehicle Age, years	Default National Vehicle Mix
Stage II Refueling Emissions Inspection Program	No
Anti-tampering Inspection Program	No
Reformulated Gas	No

The input parameters for the NONROAD2008 model are provided in Table 2 and are consistent with guidance provided by the North Carolina Division of Air Quality (NC-DAQ) for estimating construction emissions in Wake County. The emission factors for diesel-fueled vehicles and equipment were based on three scenarios, namely 300 – 600 horsepower (hp) crawlers with four 175 – 300 hp pump engines, 750 – 1000 hp crawlers (no external pumps), and 100 - 175 hp tractors/loaders/backhoes. Copies of the NONROAD2008 model input and output are provided in Appendix A-2.

Additionally, the emission factors for rail operation were obtained from an EPA document entitled "Emission Factors for Locomotives," (EPA420-F-97-051, U.S. EPA December 1997) a copy of which is provided in Appendix A-3.

Table 2
NONROAD2008 Model Input Data
Off-Road Construction Vehicles and Equipment
HAR Units 2 and 3.

Model Parameter	Data Input
Calendar Year	2011 – 2017
300 Ton Link Belt Crawler	
Equipment Age, years	Default National Vehicle Mix
Fuel Type	Diesel
Application	Construction and Mining Equipment
Average Load Factor[1]	0.59
Available Power, hp	430
Crawler Hydraulic Pumps	

Table 2
NONROAD2008 Model Input Data
Off-Road Construction Vehicles and Equipment
HAR Units 2 and 3.

Model Parameter	Data Input
Equipment Age, years	Default National Vehicle Mix
Fuel Type	Diesel
Application	Commercial Equipment
Average Load Factor [1]	0.59
Available Power, hp	262
Large Equipment (greater than 750 hp)	
Equipment Age, years	Default National Vehicle Mix
Fuel Type	Diesel
Application	Construction and Mining Equipment
Average Load Factor [1]	0.59
Available Power, hp	750
Small Equipment (100 - 175 hp)	
Equipment Age, years	Default National Vehicle Mix
Fuel Type	Diesel
Application	Construction and Mining Equipment
Average Load Factor [1]	0.59
Available Power, hp	175
Oxygen Weight, %	0.00
Diesel Sulfur, %	0.30
Minimum Winter Temperature, °F	29
Maximum Winter Temperature, °F	61
Average Winter Temperature, °F	44
Minimum Summer Temperature, °F	72.6
Maximum Summer Temperature, °F	89.1
Average Summer Temperature, °F	80
Altitude of Region	Low
ETOH Blend, % Market	75.1
ETOH, Volume %	9.3
Region	Southeast

1 Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for

Table 2
NONROAD2008 Model Input Data
Off-Road Construction Vehicles and Equipment
HAR Units 2 and 3.

Model Parameter	Data Input
Nonroad Engine Emissions Modeling", EPA, 2004.	

Calculation of Emissions

A spreadsheet for each year of construction (calendar years 2011 - 2017) was used to facilitate the calculation of total miles per year for each on-road vehicle that will be used on the project site (i.e., concrete mix trucks and delivery trucks), the total usage per day for each type of nonroad construction vehicle or unit (off-road diesel vehicles and equipment), and the associated emissions. The peak construction period is scheduled to occur during calendar years 2013 and 2014. The emission calculation spreadsheets used to estimate the construction emissions are provided in Appendix B of this technical memorandum, as follows:

Appendix	Title
B-1	Summary of Construction Related Emissions
B-2	Calculation of Emissions from on-road and off-road diesel engines and vehicles used during construction for 2011 - 2017

On-Road Vehicles

On-road vehicle emissions that will be used on the project site during construction are calculated and detailed in the emission calculation spreadsheets in Appendix B-2. The assumptions used in the estimation of these emissions is provided in Appendix C-2

On-road construction vehicle emissions were calculated for each year of construction using a combination of hours of operation and onsite mileage for delivery trucks and concrete mix trucks. For example, the calculation for onsite delivery truck mileage for a typical day during calendar year 2013 is as follows:

= 25 trucks/day x 5 miles/truck/day

= 125 miles/day

In addition, it is assumed that forty percent of the delivery trucks visiting the site during construction will idle for less than one hour during each delivery. An example calculation for delivery truck idling for a typical day during calendar year 2013 is as follows:

= 25 trucks/day x 0.40 x 1 hour

= 10 hours/day

An example calculation for concrete mix truck operations for a typical day during calendar year 2013 is as follows:

= 30 trucks/day x 30 miles/truck/day

= 900 miles/day

After the daily mileage and idling time were calculated for each vehicle, criteria pollutant emissions were calculated using the emissions factors obtained from MOBILE6.2. An example calculation for winter carbon monoxide emissions for a typical day during year 2013 from delivery trucks (Heavy-Duty Diesel Vehicles (HDDV)) is as follows:

Daily Mileage for Delivery Trucks (HDDV) x Vehicle Emission Factor x Conversion Factor

= 125 miles/day x 2.71 grams/mile x 0.002205 lb/gram

= 0.75 lb/day

An example calculation for winter carbon monoxide emissions from idling delivery trucks is as follows:

Daily Idling Time for Delivery Trucks (HDDV) x Vehicle Emission Factor x Conversion Factor

= 10 hr/day x 12.0 grams/mile x 0.002205 lb/gram x 1 mile/hr

= 0.26 lb/day

Off-Road Vehicles

The off-road diesel vehicles spreadsheet (Tables 1.2 and 1.3 in each of the spreadsheets) calculates the total usage for five groups of equipment: Rail Delivery, 300 ton Link Belt Crawler, Crawler Hydraulic Pumps (each crawler was assumed to have four pumps), Large Equipment (greater than 750 horsepower), and Small Equipment (100 - 175 horsepower). The latter four groups were used as surrogates for similar equipment. A list of the construction equipment that will be used on the project is provided in Appendix C-1; however, it is noted that this equipment list was generated for Progress Energy's Levy Nuclear Plant and the equipment associated with excavation dewatering and marine construction will not be required for the Harris site and was therefore excluded from consideration. A list of assumptions regarding the use of this equipment on the project site is provided for each year of construction in Appendix C-2 (refer to Table 1 "Assumptions for HAR 2 and 3 Air Quality Conformity Determination" in the appendix).

The construction equipment identified in Appendix C-2 (excluding the dewatering and marine equipment as described above) is identified in the emission calculation spreadsheets in Appendix B-2. The sections below describe the total usage calculations for the five groups of equipment that will be used at the project site.

The total daily usage calculation for Rail Delivery (calendar year 2013) is as follows:

= 5000 hp x 1 delivery/day x 4 hours/delivery

= 20,000 hp-hr/day

The total daily usage calculation for 300 ton Link Belt Crawlers (calendar year 2013) is as follows:

= 430 hp x 38 units x 6 hours/day

= 98,040 hp-hr/day

The total daily usage calculation for crawler hydraulic pumps (calendar year 2013) is as follows:

= 262 hp x 38 crawlers x 4 pumps/crawler x 6 hours/day

= 238,944 hp-hr/day

The total daily usage calculation for Large Equipment (calendar year 2013) is as follows:

= 750 hp x 81 units x 6 hours/day

= 364,500 hp-hr/day

The total daily usage calculation for Small Equipment (calendar year 2013) is as follows:

= 175 hp x 155 units x 6 hours/day

= 162,750 hp-hr/day

After the total usage was calculated for each group, criteria pollutant emissions were calculated using the emissions factors from the NONROAD2008 model. An example calculation for carbon monoxide emissions from Rail Delivery is as follows:

Total Daily Usage x Load Factor x Emission Factor x Conversion Factor x Activity Factor

= 20,000 hp-hr/day x 0.59 x 1.28 grams/hp-hr x 0.002205 lb/gram x 1.0

= 33.3 lb/day

An example calculation for carbon monoxide emissions from 300 ton Link Belt is as follows:

Total Daily Usage x Load Factor x Emission Factor x Conversion Factor x Activity Factor

= 98,040 hp-hr/day x 0.59 x 1.26 grams/hp-hr x 0.002205 lb/gram x 1.0

= 161 lb/day

The Activity Factors (defined for this analysis as the percentage of construction equipment that will be used during the identified year of construction) for construction equipment use during each year of construction are provided in Appendix C-2, Table 1 "Assumptions for HAR 2 and 3 Air Quality Conformity Determination".

Results

The results of the emissions estimates as described above are provided in Appendices B-1 (Summary) and B-2 (individual years) for each year of the proposed construction schedule (2011 - 2017) as wells as for the winter and summer seasons. Table B.1 in Appendix B-1 contains a summary of the calculated emissions.

It is noted that the emissions estimates provided in Table B.1 are temporary (due to the limited construction period) and representative of typical emissions, primarily as a result of the following assumptions:

1. Emission factors provided in EPA's MOBOLE6.2 and NONROAD2008 emissions estimating models are generally considered to be conservative.

2. Off-road vehicle emissions are based on the assumption that all construction equipment will be operated simultaneously and continuously for 6 hours per day. It is likely that this will not occur and that actual emissions could be lower.

References

U.S. Environmental Protection Agency, 2004. Motor Vehicle Emission Factor. Office of Transportation and Air Quality. Available from EPA's web site - http:/epa.gov/otaq/otaq/m6.htm

U.S. Environmental Protection Agency, 2009. Nonroad Emissions Inventory Model. Office of Transportation and Air Quality. Available from EPA's web site - http://www.epa.gov/otaq/nonrdmdl.htm

U.S. Environmental Protection Agency, 2004. Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling (EPA420-P-04-005). Office of Transportation and Air Quality. Available from EPA's web site - http://www.epa.gov/otaq/nonrdmdl.htm

Appendix A-1
Mobile6.2 Model Input/Output

```
****************    Header Section    ****************
MOBILE6 INPUT FILE
*Emission calcs for Progress Energy
*Project Location: Wake County, NC
*Min/max temp from Raleigh-Durham International Airport
*Fuel RVP from Appendix of Tech Descriptionof Toxics Module

POLLUTANTS          : CO NOX HC
PARTICULATES        : SO4 SO2 OCARBON ECARBON GASPM LEAD BRAKE TIRE
SPREADSHEET         :
RUN DATA

****************     Run Section      ****************
EXPRESS HC AS VOC   :

****************   Scenario Section   ****************

*Winter input values consisten with CO Maintenance Plan Update

SCENARIO RECORD     : Winter 2011 - 10 mph
CALENDAR YEAR       : 2011
EVALUATION MONTH    : 1
MIN/MAX TEMP        : 51.5 51.5
FUEL RVP            : 14.25
PARTICLE SIZE       : 10.0
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED       : 10 arterial

SCENARIO RECORD     : Winter 2012 - 10 mph
CALENDAR YEAR       : 2012
EVALUATION MONTH    : 1
MIN/MAX TEMP        : 51.5 51.5
FUEL RVP            : 14.25
PARTICLE SIZE       : 10.0
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED       : 10 arterial

SCENARIO RECORD     : Winter 2013 - 10 mph
CALENDAR YEAR       : 2013
EVALUATION MONTH    : 1
MIN/MAX TEMP        : 51.5 51.5
FUEL RVP            : 14.25
PARTICLE SIZE       : 10.0
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED       : 10 arterial

SCENARIO RECORD     : Winter 2014 - 10 mph
CALENDAR YEAR       : 2014
EVALUATION MONTH    : 1
MIN/MAX TEMP        : 51.5 51.5
FUEL RVP            : 14.25
```

```
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Winter 2015 - 10 mph
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Winter 2016 - 10 mph
CALENDAR YEAR      : 2016
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Winter 2017 - 10 mph
CALENDAR YEAR      : 2017
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Winter 2018 - 10 mph
CALENDAR YEAR      : 2018
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Winter 2019 - 10 mph
CALENDAR YEAR      : 2019
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
```

```
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial


SCENARIO RECORD    : Winter 2011 - Idle
CALENDAR YEAR      : 2011
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Winter 2012 - Idle
CALENDAR YEAR      : 2012
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Winter 2013 - Idle
CALENDAR YEAR      : 2013
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Winter 2014 - Idle
CALENDAR YEAR      : 2014
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Winter 2015 - Idle
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
```

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PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Winter 2016 - Idle
CALENDAR YEAR      : 2016
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Winter 2017 - Idle
CALENDAR YEAR      : 2017
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Winter 2018 - Idle
CALENDAR YEAR      : 2018
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Winter 2019 - Idle
CALENDAR YEAR      : 2019
EVALUATION MONTH   : 1
MIN/MAX TEMP       : 51.5 51.5
FUEL RVP           : 14.25
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial


*Summer input values consistent with Raleigh-Durham-Chapel Hill, NC 8-Hour Ozone
Redesignation and Maintenance Plan

SCENARIO RECORD    : Summer 2011 - 10 mph
CALENDAR YEAR      : 2011
EVALUATION MONTH   : 7
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HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Summer 2012 - 10 mph
CALENDAR YEAR      : 2012
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Summer 2013 - 10 mph
CALENDAR YEAR      : 2013
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Summer 2014 - 10 mph
CALENDAR YEAR      : 2014
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
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PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED       : 10 arterial

SCENARIO RECORD     : Summer 2015 - 10 mph
CALENDAR YEAR       : 2015
EVALUATION MONTH    : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY   : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES     : 30.0
MIN/MAX TEMP        : 68.1 88.9
FUEL RVP            : 7.8
PARTICLE SIZE       : 10.0
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED       : 10 arterial

SCENARIO RECORD     : Summer 2016 - 10 mph
CALENDAR YEAR       : 2016
EVALUATION MONTH    : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY   : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES     : 30.0
MIN/MAX TEMP        : 68.1 88.9
FUEL RVP            : 7.8
PARTICLE SIZE       : 10.0
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED       : 10 arterial

SCENARIO RECORD     : Summer 2017 - 10 mph
CALENDAR YEAR       : 2017
EVALUATION MONTH    : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY   : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES     : 30.0
MIN/MAX TEMP        : 68.1 88.9
FUEL RVP            : 7.8
PARTICLE SIZE       : 10.0
DIESEL SULFUR       : 15
PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED       : 10 arterial

SCENARIO RECORD     : Summer 2018 - 10 mph
CALENDAR YEAR       : 2018
EVALUATION MONTH    : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
```

```
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Summer 2019 - 10 mph
CALENDAR YEAR      : 2019
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 10 arterial

SCENARIO RECORD    : Summer 2011 - Idle
CALENDAR YEAR      : 2011
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Summer 2012 - Idle
CALENDAR YEAR      : 2012
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
```

```
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Summer 2013 - Idle
CALENDAR YEAR      : 2013
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Summer 2014 - Idle
CALENDAR YEAR      : 2014
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Summer 2015 - Idle
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Summer 2016 - Idle
CALENDAR YEAR      : 2016
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
```

```
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Summer 2017 - Idle
CALENDAR YEAR      : 2017
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Summer 2018 - Idle
CALENDAR YEAR      : 2018
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial

SCENARIO RECORD    : Summer 2019 - Idle
CALENDAR YEAR      : 2019
EVALUATION MONTH   : 7
HOURLY TEMPERATURES: 73. 73. 74. 77. 78. 81. 82. 85. 86. 89. 89. 88.
86. 86. 84. 81. 80. 77. 76. 75. 74. 73. 73. 73.
RELATIVE HUMIDITY  : 96. 96. 88. 80. 77. 68. 64. 54. 53. 50. 49. 51.
57. 60. 67. 70. 75. 82. 86. 90. 93. 94. 95. 96.
BAROMETRIC PRES    : 30.0
MIN/MAX TEMP       : 68.1 88.9
FUEL RVP           : 7.8
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV
PMDDR2.CSV
AVERAGE SPEED      : 2.5 arterial
```

```
END OF RUN
```

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\MOBILE6\MOBILE6\RUN\ACAM\PROGRESS.IN (file 1, run 1).  *
************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2011 - 10 mph
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

                    Calendar Year:  2011
                            Month:  Jan.
                         Altitude:  Low
               Minimum Temperature:  51.5 (F)
               Maximum Temperature:  51.5 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:  14.3 psi
                     Weathered RVP:  14.3 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3425	0.3941	0.1344		0.0357	0.0003	0.0020	0.0856	0.0053	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.394	1.355	2.480	1.641	2.295	0.279	0.707	0.813	3.40	1.516
Composite CO :	16.34	17.80	25.22	19.68	26.17	1.649	1.336	4.062	31.20	17.453
Composite NOX :	0.718	0.932	1.522	1.082	1.695	0.434	0.807	7.546	1.11	1.532

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2012 - 10 mph
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2012
                            Month:  Jan.
                         Altitude:  Low
                Minimum Temperature:  51.5 (F)
                Maximum Temperature:  51.5 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:  14.3 psi
                      Weathered RVP:  14.3 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3321	0.4018	0.1370		0.0358	0.0003	0.0020	0.0857	0.0053	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.270	1.229	2.262	1.492	2.125	0.231	0.647	0.752	3.40	1.386
Composite CO :	15.68	16.77	23.48	18.48	25.00	1.548	1.250	3.540	31.20	16.530
Composite NOX :	0.651	0.851	1.439	1.000	1.466	0.339	0.712	6.504	1.11	1.373

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2013 - 10 mph
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV
```

```
* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2013
                           Month:  Jan.
                        Altitude:  Low
              Minimum Temperature:  51.5 (F)
              Maximum Temperature:  51.5 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  14.3 psi
                     Weathered RVP:  14.3 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3228	0.4087	0.1394		0.0358	0.0003	0.0020	0.0859	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.172	1.145	2.120	1.393	1.957	0.208	0.602	0.719	3.40	1.292
Composite CO :	15.18	16.03	22.45	17.66	24.49	1.484	1.190	2.706	31.20	15.854
Composite NOX :	0.592	0.770	1.347	0.917	1.272	0.278	0.642	5.623	1.11	1.229

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2014 - 10 mph
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
```

```
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2014
                            Month:  Jan.
                         Altitude:  Low
                Minimum Temperature:  51.5 (F)
                Maximum Temperature:  51.5 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:  14.3 psi
                      Weathered RVP:  14.3 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34     LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh.
               GVWR:               <6000     >6000    (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3142    0.4149    0.1415              0.0358    0.0003    0.0021    0.0861    0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      1.089     1.077     1.996     1.311     1.785     0.186     0.562     0.685      3.40     1.213
    Composite CO  :      14.74     15.42     21.62     16.99     23.68     1.420     1.138     2.397     31.20     15.304
    Composite NOX :      0.540     0.703     1.267     0.847     1.070     0.227     0.581     4.790      1.11     1.098
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2015 - 10 mph
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
```

```
          The user supplied arterial average speed of 10.0
          will be used for all hours of the day.  100% of VMT
          has been assigned to the arterial/collector roadway
          type for all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12

                Calendar Year:  2015
                        Month:  Jan.
                     Altitude:  Low
            Minimum Temperature:  51.5 (F)
            Maximum Temperature:  51.5 (F)
              Absolute Humidity:   75. grains/lb
               Nominal Fuel RVP:  14.3 psi
                  Weathered RVP:  14.3 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3068	0.4203	0.1433		0.0358	0.0003	0.0021	0.0862	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.021	1.023	1.885	1.242	1.652	0.173	0.532	0.650	3.40	1.148
Composite CO :	14.36	14.92	20.94	16.45	23.45	1.371	1.102	2.096	31.20	14.864
Composite NOX :	0.495	0.648	1.198	0.788	0.931	0.192	0.533	4.158	1.11	0.995

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2016 - 10 mph
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12
```

```
                Calendar Year:  2016
                        Month:  Jan.
                     Altitude:  Low
           Minimum Temperature:  51.5 (F)
           Maximum Temperature:  51.5 (F)
             Absolute Humidity:   75. grains/lb
              Nominal Fuel RVP:  14.3 psi
                 Weathered RVP:  14.3 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
              Evap I/M Program:  No
                   ATP Program:  No
             Reformulated Gas:   No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3001	0.4252	0.1450		0.0358	0.0003	0.0021	0.0863	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.966	0.976	1.774	1.179	1.549	0.152	0.486	0.630	3.40	1.091
Composite CO :	14.05	14.44	20.15	15.89	23.19	1.313	1.042	1.864	31.20	14.432
Composite NOX :	0.455	0.597	1.124	0.731	0.817	0.151	0.477	3.642	1.11	0.904

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2017 - 10 mph
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                Calendar Year:  2017
                        Month:  Jan.
                     Altitude:  Low
           Minimum Temperature:  51.5 (F)
           Maximum Temperature:  51.5 (F)
             Absolute Humidity:   75. grains/lb
              Nominal Fuel RVP:  14.3 psi
```

```
                Weathered RVP:  14.3 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2942	0.4295	0.1464		0.0359	0.0003	0.0022	0.0864	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.921	0.938	1.680	1.127	1.448	0.137	0.462	0.612	3.40	1.043
Composite CO :	13.80	14.08	19.55	15.47	22.97	1.273	1.014	1.664	31.20	14.101
Composite NOX :	0.421	0.560	1.065	0.689	0.715	0.122	0.441	3.164	1.11	0.826

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2018 - 10 mph
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2018
                            Month:  Jan.
                         Altitude:  Low
              Minimum Temperature:  51.5 (F)
              Maximum Temperature:  51.5 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  14.3 psi
                    Weathered RVP:  14.3 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2889	0.4333	0.1477		0.0360	0.0003	0.0022	0.0866	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.884	0.904	1.584	1.077	1.385	0.125	0.415	0.596	3.40	1.001
Composite CO :	13.58	13.69	18.84	15.00	22.80	1.243	0.951	1.461	31.20	13.748
Composite NOX :	0.392	0.529	1.004	0.650	0.636	0.100	0.390	2.711	1.11	0.755

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2019 - 10 mph
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2019
                            Month:  Jan.
                         Altitude:  Low
                Minimum Temperature:  51.5 (F)
                Maximum Temperature:  51.5 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:  14.3 psi
                      Weathered RVP:  14.3 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2843	0.4365	0.1488		0.0361	0.0003	0.0022	0.0868	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.854	0.880	1.515	1.041	1.303	0.119	0.389	0.583	3.40	0.968
Composite CO :	13.40	13.44	18.36	14.69	22.61	1.227	0.918	1.322	31.20	13.500

Composite NOX :	0.369	0.510	0.960	0.624	0.557	0.088	0.357	2.387	1.11	0.704

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2011 - Idle
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2011
                            Month:  Jan.
                         Altitude:  Low
                Minimum Temperature:  51.5 (F)
                Maximum Temperature:  51.5 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:  14.3 psi
                      Weathered RVP:  14.3 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                       ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3425	0.3941	0.1344		0.0357	0.0003	0.0020	0.0856	0.0053	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	6.018	5.250	9.800	6.407	8.599	0.380	0.964	1.178	8.43	5.903
Composite CO :	36.80	37.46	54.64	41.83	49.23	2.671	2.157	7.216	103.15	37.644
Composite NOX :	0.989	1.278	2.084	1.483	1.572	0.577	1.074	10.030	1.27	2.047

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2012 - Idle
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV
```

```
* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2012
                           Month:  Jan.
                        Altitude:  Low
              Minimum Temperature:  51.5 (F)
              Maximum Temperature:  51.5 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  14.3 psi
                    Weathered RVP:  14.3 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3321	0.4018	0.1370		0.0358	0.0003	0.0020	0.0857	0.0053	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	5.433	4.764	8.926	5.822	7.933	0.315	0.881	1.090	8.43	5.365
Composite CO :	35.10	34.91	49.68	38.67	47.02	2.512	2.018	6.289	103.15	35.264
Composite NOX :	0.897	1.162	1.959	1.364	1.360	0.451	0.947	8.642	1.27	1.831

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2013 - Idle
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
```

```
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2013
                            Month:  Jan.
                         Altitude:  Low
                Minimum Temperature:  51.5 (F)
                Maximum Temperature:  51.5 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:  14.3 psi
                      Weathered RVP:  14.3 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3228	0.4087	0.1394		0.0358	0.0003	0.0020	0.0859	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	4.973	4.431	8.284	5.411	7.266	0.283	0.818	1.042	8.43	4.966
Composite CO :	33.82	33.31	47.48	36.92	46.06	2.405	1.918	4.807	103.15	33.755
Composite NOX :	0.815	1.052	1.834	1.251	1.180	0.370	0.854	7.469	1.27	1.640

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2014 - Idle
* File 1, Run 1, Scenario 13.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
```

```
          The user supplied arterial average speed of  2.5
          will be used for all hours of the day.  100% of VMT
          has been assigned to the arterial/collector roadway
          type for all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12

                 Calendar Year:  2014
                         Month:  Jan.
                      Altitude:  Low
            Minimum Temperature:  51.5 (F)
            Maximum Temperature:  51.5 (F)
              Absolute Humidity:   75. grains/lb
               Nominal Fuel RVP:  14.3 psi
                  Weathered RVP:  14.3 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3142	0.4149	0.1415		0.0358	0.0003	0.0021	0.0861	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	4.606	4.180	7.722	5.081	6.625	0.254	0.761	0.993	8.43	4.642
Composite CO :	32.67	32.01	45.74	35.50	44.55	2.302	1.830	4.258	103.15	32.520
Composite NOX :	0.743	0.959	1.724	1.153	0.992	0.302	0.772	6.361	1.27	1.467

```
* # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2015 - Idle
* File 1, Run 1, Scenario 14.
* # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12
```

```
                Calendar Year:  2015
                        Month:  Jan.
                     Altitude:  Low
           Minimum Temperature:  51.5 (F)
           Maximum Temperature:  51.5 (F)
             Absolute Humidity:   75. grains/lb
              Nominal Fuel RVP:  14.3 psi
                 Weathered RVP:  14.3 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
              Evap I/M Program:  No
                   ATP Program:  No
             Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3068	0.4203	0.1433		0.0358	0.0003	0.0021	0.0862	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	4.320	3.984	7.232	4.810	6.118	0.236	0.719	0.942	8.43	4.382
Composite CO :	31.69	30.96	44.27	34.34	44.11	2.221	1.768	3.724	103.15	31.517
Composite NOX :	0.681	0.882	1.627	1.072	0.864	0.255	0.708	5.518	1.27	1.328

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2016 - Idle
* File 1, Run 1, Scenario 15.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                Calendar Year:  2016
                        Month:  Jan.
                     Altitude:  Low
           Minimum Temperature:  51.5 (F)
           Maximum Temperature:  51.5 (F)
             Absolute Humidity:   75. grains/lb
              Nominal Fuel RVP:  14.3 psi
```

```
                Weathered RVP:  14.3 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3001	0.4252	0.1450		0.0358	0.0003	0.0021	0.0863	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	4.100	3.819	6.782	4.572	5.752	0.207	0.657	0.913	8.43	4.167
Composite CO :	30.88	29.99	42.67	33.21	43.63	2.130	1.673	3.311	103.15	30.592
Composite NOX :	0.626	0.815	1.530	0.997	0.758	0.201	0.634	4.826	1.27	1.208

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2017 - Idle
* File 1, Run 1, Scenario 16.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2017
                            Month:  Jan.
                         Altitude:  Low
                Minimum Temperature:  51.5 (F)
                Maximum Temperature:  51.5 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:  14.3 psi
                       Weathered RVP:  14.3 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2942	0.4295	0.1464		0.0359	0.0003	0.0022	0.0864	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	3.931	3.689	6.405	4.379	5.396	0.187	0.623	0.887	8.43	3.994
Composite CO :	30.21	29.27	41.44	32.37	43.21	2.066	1.627	2.957	103.15	29.870
Composite NOX :	0.579	0.764	1.449	0.939	0.664	0.162	0.586	4.199	1.27	1.105

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2018 - Idle
* File 1, Run 1, Scenario 17.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2018
                            Month:  Jan.
                         Altitude:  Low
                Minimum Temperature:  51.5 (F)
                Maximum Temperature:  51.5 (F)
                  Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:  14.3 psi
                      Weathered RVP:  14.3 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2889	0.4333	0.1477		0.0360	0.0003	0.0022	0.0866	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	3.802	3.575	6.063	4.208	5.217	0.171	0.560	0.863	8.43	3.850
Composite CO :	29.66	28.57	40.08	31.50	42.89	2.018	1.530	2.595	103.15	29.171

Composite NOX :	0.539	0.724	1.371	0.888	0.590	0.133	0.518	3.614	1.27	1.014

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Winter 2019 - Idle
* File 1, Run 1, Scenario 18.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2019
                            Month:  Jan.
                         Altitude:  Low
              Minimum Temperature:  51.5 (F)
              Maximum Temperature:  51.5 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  14.3 psi
                    Weathered RVP:  14.3 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2843	0.4365	0.1488		0.0361	0.0003	0.0022	0.0868	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	3.705	3.492	5.801	4.079	4.944	0.162	0.524	0.845	8.43	3.737
Composite CO :	29.22	28.11	39.14	30.92	42.53	1.991	1.479	2.349	103.15	28.669
Composite NOX :	0.508	0.697	1.310	0.853	0.517	0.117	0.474	3.183	1.27	0.946

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2011 - 10 mph
* File 1, Run 1, Scenario 19.
* # # # # # # # # # # # # # # # # # # # # # # # #
```

```
* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2011
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  68.1 (F)
                Maximum Temperature:  88.9 (F)
                  Minimum Rel. Hum.:  49.0 (%)
                  Maximum Rel. Hum.:  96.0 (%)
                Barometric Pressure: 30.00 (inches Hg)
                   Nominal Fuel RVP:   7.8 psi
                       Weathered RVP:   7.5 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3367	0.3972	0.1365		0.0360	0.0003	0.0020	0.0860	0.0054	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.056	1.118	1.963	1.334	1.786	0.274	0.682	0.792	3.50	1.220
Composite CO :	9.57	10.42	14.24	11.40	20.63	1.639	1.300	3.805	34.54	10.561
Composite NOX :	0.694	0.787	1.230	0.900	1.587	0.418	0.765	7.017	0.82	1.381

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2012 - 10 mph
* File 1, Run 1, Scenario 20.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV
```

```
* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2012
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  68.1 (F)
                Maximum Temperature:  88.9 (F)
                  Minimum Rel. Hum.:  49.0 (%)
                  Maximum Rel. Hum.:  96.0 (%)
                Barometric Pressure: 30.00 (inches Hg)
                   Nominal Fuel RVP:   7.8 psi
                      Weathered RVP:   7.5 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
 VMT Distribution:     0.3271    0.4043    0.1389                0.0360    0.0003    0.0020    0.0861    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC  :      0.959     1.024     1.802     1.223     1.653     0.228     0.624     0.736      3.50     1.121
    Composite CO   :       9.07      9.86     13.25     10.73     19.75     1.541     1.219     3.321     34.54     9.978
    Composite NOX  :      0.631     0.721     1.165     0.835     1.374     0.327     0.675     6.055      0.82     1.236
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2013 - 10 mph
* File 1, Run 1, Scenario 21.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV
```

```
* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2013
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  68.1 (F)
                Maximum Temperature:  88.9 (F)
                  Minimum Rel. Hum.:  49.0 (%)
                  Maximum Rel. Hum.:  96.0 (%)
                Barometric Pressure: 30.00 (inches Hg)
                   Nominal Fuel RVP:   7.8 psi
                      Weathered RVP:   7.5 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34     LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000    (All)
                       ------    ------    ------   ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3180    0.4109    0.1412             0.0360    0.0003    0.0021    0.0863    0.0053    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.881     0.959     1.694    1.147     1.520     0.205     0.581     0.704      3.50     1.049
    Composite CO  :       8.69      9.48     12.73    10.31     19.37     1.479     1.163     2.548     34.54     9.559
    Composite NOX :      0.575     0.658     1.094    0.769     1.193     0.268     0.610     5.241      0.82     1.108
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2014 - 10 mph
* File 1, Run 1, Scenario 22.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
```

```
          has been assigned to the arterial/collector roadway
          type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12

                Calendar Year:  2014
                        Month:  July
                     Altitude:  Low
          Minimum Temperature:  68.1 (F)
          Maximum Temperature:  88.9 (F)
            Minimum Rel. Hum.:  49.0 (%)
            Maximum Rel. Hum.:  96.0 (%)
          Barometric Pressure: 30.00 (inches Hg)
             Nominal Fuel RVP:   7.8 psi
                Weathered RVP:   7.5 psi
          Fuel Sulfur Content:   30. ppm

          Exhaust I/M Program:  No
             Evap I/M Program:  No
                  ATP Program:  No
             Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3099	0.4167	0.1431		0.0360	0.0003	0.0021	0.0866	0.0053	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.815	0.907	1.596	1.083	1.385	0.184	0.542	0.673	3.50	0.987
Composite CO :	8.35	9.17	12.29	9.97	18.77	1.418	1.113	2.261	34.54	9.227
Composite NOX :	0.527	0.605	1.032	0.714	1.004	0.219	0.553	4.471	0.82	0.992

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2015 - 10 mph
* File 1, Run 1, Scenario 23.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
 M583 Warning:
          The user supplied arterial average speed of 10.0
          will be used for all hours of the day.  100% of VMT
          has been assigned to the arterial/collector roadway
          type for all hours of the day and all vehicle types.
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12
```

```
                Calendar Year:  2015
                        Month:  July
                     Altitude:  Low
           Minimum Temperature:  68.1 (F)
           Maximum Temperature:  88.9 (F)
             Minimum Rel. Hum.:  49.0 (%)
             Maximum Rel. Hum.:  96.0 (%)
           Barometric Pressure: 30.00 (inches Hg)
              Nominal Fuel RVP:   7.8 psi
                 Weathered RVP:   7.5 psi
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  No
              Evap I/M Program:  No
                   ATP Program:  No
              Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3031	0.4218	0.1449		0.0360	0.0003	0.0021	0.0866	0.0053	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.762	0.865	1.507	1.029	1.279	0.171	0.514	0.640	3.50	0.935
Composite CO :	8.07	8.92	11.93	9.69	18.59	1.370	1.080	1.982	34.54	8.962
Composite NOX :	0.486	0.561	0.977	0.668	0.876	0.185	0.508	3.887	0.82	0.899

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2016 - 10 mph
* File 1, Run 1, Scenario 24.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                Calendar Year:  2016
                        Month:  July
                     Altitude:  Low
           Minimum Temperature:  68.1 (F)
           Maximum Temperature:  88.9 (F)
```

```
              Minimum Rel. Hum.:  49.0 (%)
              Maximum Rel. Hum.:  96.0 (%)
            Barometric Pressure: 30.00 (inches Hg)
               Nominal Fuel RVP:   7.8 psi
                  Weathered RVP:   7.5 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
              Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2967	0.4264	0.1465		0.0361	0.0003	0.0022	0.0867	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.718	0.829	1.423	0.981	1.198	0.151	0.471	0.621	3.50	0.892
Composite CO :	7.84	8.69	11.55	9.42	18.40	1.315	1.023	1.766	34.54	8.725
Composite NOX :	0.451	0.523	0.922	0.625	0.769	0.146	0.456	3.411	0.82	0.820

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2017 - 10 mph
* File 1, Run 1, Scenario 25.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                     Calendar Year:  2017
                             Month:  July
                          Altitude:  Low
               Minimum Temperature:  68.1 (F)
               Maximum Temperature:  88.9 (F)
                 Minimum Rel. Hum.:  49.0 (%)
                 Maximum Rel. Hum.:  96.0 (%)
               Barometric Pressure: 30.00 (inches Hg)
                  Nominal Fuel RVP:   7.8 psi
                     Weathered RVP:   7.5 psi
               Fuel Sulfur Content:   30. ppm
```

```
            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34     LDGT      HDGV      LDDV      LDDT      HDDV       MC   All Veh
             GVWR:                <6000     >6000    (All)
                       ------    ------    ------   ------    ------    ------    ------    ------   ------    ------
  VMT Distribution:    0.2912    0.4304    0.1478             0.0361    0.0003    0.0022    0.0869   0.0052    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.683     0.800     1.349    0.940     1.117     0.136     0.448     0.605     3.50     0.855
    Composite CO  :       7.65      8.52     11.25     9.22     18.24     1.276     0.997     1.581    34.54     8.537
    Composite NOX :      0.421     0.494     0.876    0.592     0.675     0.118     0.422     2.970     0.82     0.752
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2018 - 10 mph
* File 1, Run 1, Scenario 26.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                     Calendar Year:  2018
                             Month:  July
                          Altitude:  Low
               Minimum Temperature:  68.1 (F)
               Maximum Temperature:  88.9 (F)
                 Minimum Rel. Hum.:  49.0 (%)
                 Maximum Rel. Hum.:  96.0 (%)
               Barometric Pressure: 30.00 (inches Hg)
                  Nominal Fuel RVP:   7.8 psi
                     Weathered RVP:   7.5 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2862	0.4338	0.1490		0.0363	0.0003	0.0022	0.0870	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.654	0.773	1.274	0.902	1.068	0.125	0.403	0.589	3.50	0.822
Composite CO :	7.50	8.33	10.90	8.99	18.11	1.247	0.937	1.392	34.54	8.346
Composite NOX :	0.395	0.471	0.830	0.563	0.601	0.097	0.374	2.551	0.82	0.690

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2019 - 10 mph
* File 1, Run 1, Scenario 27.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of 10.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2019
                           Month:  July
                        Altitude:  Low
               Minimum Temperature:  68.1 (F)
               Maximum Temperature:  88.9 (F)
                 Minimum Rel. Hum.:  49.0 (%)
                 Maximum Rel. Hum.:  96.0 (%)
               Barometric Pressure: 30.00 (inches Hg)
                  Nominal Fuel RVP:   7.8 psi
                     Weathered RVP:   7.5 psi
               Fuel Sulfur Content:   30. ppm

               Exhaust I/M Program:  No
                  Evap I/M Program:  No
                       ATP Program:  No
                  Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2819	0.4368	0.1500		0.0364	0.0003	0.0022	0.0873	0.0052	1.0000
Composite Emission Factors (g/mi):										

Composite VOC :	0.630	0.754	1.218	0.872	1.001	0.118	0.378	0.577	3.50	0.795
Composite CO :	7.38	8.22	10.70	8.85	17.97	1.231	0.907	1.264	34.54	8.220
Composite NOX :	0.376	0.456	0.796	0.543	0.528	0.086	0.343	2.252	0.82	0.645

```
* # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2011 - Idle
* File 1, Run 1, Scenario 28.
* # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2011
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  68.1 (F)
                Maximum Temperature:  88.9 (F)
                  Minimum Rel. Hum.:  49.0 (%)
                  Maximum Rel. Hum.:  96.0 (%)
                Barometric Pressure: 30.00 (inches Hg)
                   Nominal Fuel RVP:   7.8 psi
                      Weathered RVP:   7.5 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3367	0.3972	0.1365		0.0360	0.0003	0.0020	0.0860	0.0054	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	4.744	4.328	7.906	5.243	6.738	0.373	0.928	1.148	8.54	4.784
Composite CO :	24.45	23.69	32.59	25.97	38.80	2.652	2.096	6.760	116.15	24.699
Composite NOX :	1.042	1.105	1.720	1.262	1.473	0.555	1.018	9.328	0.93	1.887

```
* # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2012 - Idle
* File 1, Run 1, Scenario 29.
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2012
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  68.1 (F)
                Maximum Temperature:  88.9 (F)
                  Minimum Rel. Hum.:  49.0 (%)
                  Maximum Rel. Hum.:  96.0 (%)
                Barometric Pressure: 30.00 (inches Hg)
                   Nominal Fuel RVP:   7.8 psi
                      Weathered RVP:   7.5 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3271	0.4043	0.1389		0.0360	0.0003	0.0020	0.0861	0.0054	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	4.252	3.933	7.208	4.770	6.196	0.311	0.849	1.066	8.54	4.344
Composite CO :	23.14	22.23	29.62	24.12	37.15	2.498	1.965	5.900	116.15	23.140
Composite NOX :	0.947	1.009	1.621	1.165	1.275	0.434	0.898	8.046	0.93	1.688

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2013 - Idle
* File 1, Run 1, Scenario 30.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
```

```
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2013
                           Month:  July
                        Altitude:  Low
             Minimum Temperature:  68.1 (F)
             Maximum Temperature:  88.9 (F)
               Minimum Rel. Hum.:  49.0 (%)
               Maximum Rel. Hum.:  96.0 (%)
             Barometric Pressure: 30.00 (inches Hg)
                Nominal Fuel RVP:   7.8 psi
                   Weathered RVP:   7.5 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3180	0.4109	0.1412		0.0360	0.0003	0.0021	0.0863	0.0053	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	3.864	3.660	6.687	4.434	5.652	0.279	0.788	1.021	8.54	4.015
Composite CO :	22.13	21.36	28.43	23.17	36.43	2.396	1.871	4.527	116.15	22.150
Composite NOX :	0.865	0.920	1.523	1.074	1.107	0.357	0.811	6.963	0.93	1.516

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2014 - Idle
* File 1, Run 1, Scenario 31.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
```

```
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2014
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  68.1 (F)
                Maximum Temperature:  88.9 (F)
                  Minimum Rel. Hum.:  49.0 (%)
                  Maximum Rel. Hum.:  96.0 (%)
                Barometric Pressure: 30.00 (inches Hg)
                   Nominal Fuel RVP:   7.8 psi
                      Weathered RVP:   7.5 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12     LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
               GVWR:                <6000      >6000     (All)
                     ------    ------     ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3099    0.4167     0.1431              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      3.557     3.456      6.228     4.165     5.132     0.251     0.734     0.975      8.54     3.750
    Composite CO  :      21.24     20.65      27.47     22.39     35.31     2.296     1.789     4.016    116.15    21.356
    Composite NOX :      0.794     0.846      1.436     0.997     0.932     0.291     0.734     5.939      0.93     1.358
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2015 - Idle
* File 1, Run 1, Scenario 32.
* # # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
```

```
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2015
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  68.1 (F)
                Maximum Temperature:  88.9 (F)
                  Minimum Rel. Hum.:  49.0 (%)
                  Maximum Rel. Hum.:  96.0 (%)
                Barometric Pressure: 30.00 (inches Hg)
                   Nominal Fuel RVP:   7.8 psi
                      Weathered RVP:   7.5 psi
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  No
                   Evap I/M Program:  No
                        ATP Program:  No
                   Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3031	0.4218	0.1449		0.0360	0.0003	0.0021	0.0866	0.0053	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	3.318	3.299	5.826	3.945	4.721	0.233	0.694	0.927	8.54	3.538
Composite CO :	20.49	20.07	26.64	21.75	34.97	2.218	1.731	3.521	116.15	20.713
Composite NOX :	0.734	0.785	1.358	0.931	0.812	0.246	0.675	5.160	0.93	1.233

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2016 - Idle
* File 1, Run 1, Scenario 33.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
```

```
 M 48 Warning:
            there are no sales for vehicle class HDGV8b
 M 48 Warning:
            there are no sales for vehicle class LDDT12

                  Calendar Year:  2016
                          Month:  July
                       Altitude:  Low
            Minimum Temperature:  68.1 (F)
            Maximum Temperature:  88.9 (F)
              Minimum Rel. Hum.:  49.0 (%)
              Maximum Rel. Hum.:  96.0 (%)
            Barometric Pressure: 30.00 (inches Hg)
               Nominal Fuel RVP:   7.8 psi
                  Weathered RVP:   7.5 psi
            Fuel Sulfur Content:   30. ppm

            Exhaust I/M Program:  No
               Evap I/M Program:  No
                    ATP Program:  No
               Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2967	0.4264	0.1465		0.0361	0.0003	0.0022	0.0867	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	3.135	3.170	5.467	3.757	4.424	0.206	0.635	0.900	8.54	3.367
Composite CO :	19.88	19.57	25.83	21.17	34.62	2.131	1.642	3.137	116.15	20.159
Composite NOX :	0.682	0.733	1.284	0.874	0.713	0.194	0.605	4.521	0.93	1.127

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2017 - Idle
* File 1, Run 1, Scenario 34.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
            there are no sales for vehicle class HDGV8b
  M 48 Warning:
            there are no sales for vehicle class LDDT12

                  Calendar Year:  2017
```

```
                    Month:  July
                 Altitude:  Low
Minimum Temperature:  68.1 (F)
Maximum Temperature:  88.9 (F)
  Minimum Rel. Hum.:  49.0 (%)
  Maximum Rel. Hum.:  96.0 (%)
Barometric Pressure: 30.00 (inches Hg)
   Nominal Fuel RVP:   7.8 psi
      Weathered RVP:   7.5 psi
Fuel Sulfur Content:   30. ppm

Exhaust I/M Program:  No
   Evap I/M Program:  No
        ATP Program:  No
  Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2912	0.4304	0.1478		0.0361	0.0003	0.0022	0.0869	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	2.996	3.067	5.162	3.602	4.136	0.186	0.603	0.877	8.54	3.226
Composite CO :	19.37	19.19	25.17	20.72	34.30	2.069	1.598	2.809	116.15	19.714
Composite NOX :	0.639	0.693	1.221	0.828	0.626	0.157	0.560	3.941	0.93	1.036

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2018 - Idle
* File 1, Run 1, Scenario 35.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                    Calendar Year:  2018
                            Month:  July
                         Altitude:  Low
                Minimum Temperature:  68.1 (F)
                Maximum Temperature:  88.9 (F)
                  Minimum Rel. Hum.:  49.0 (%)
                  Maximum Rel. Hum.:  96.0 (%)
```

```
              Barometric Pressure: 30.00 (inches Hg)
                 Nominal Fuel RVP:  7.8 psi
                    Weathered RVP:  7.5 psi
              Fuel Sulfur Content:  30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2862	0.4338	0.1490		0.0363	0.0003	0.0022	0.0870	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	2.889	2.977	4.887	3.465	3.991	0.170	0.544	0.854	8.54	3.111
Composite CO :	18.98	18.83	24.45	20.26	34.06	2.023	1.507	2.474	116.15	19.299
Composite NOX :	0.602	0.662	1.161	0.790	0.557	0.129	0.496	3.401	0.93	0.955

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2019 - Idle
* File 1, Run 1, Scenario 36.
* # # # # # # # # # # # # # # # # # # # # # # # #

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M583 Warning:
            The user supplied arterial average speed of  2.5
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                     Calendar Year:  2019
                             Month:  July
                          Altitude:  Low
               Minimum Temperature:  68.1 (F)
               Maximum Temperature:  88.9 (F)
                 Minimum Rel. Hum.:  49.0 (%)
                 Maximum Rel. Hum.:  96.0 (%)
               Barometric Pressure: 30.00 (inches Hg)
                  Nominal Fuel RVP:  7.8 psi
                     Weathered RVP:  7.5 psi
               Fuel Sulfur Content:  30. ppm

               Exhaust I/M Program:  No
```

Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2819	0.4368	0.1500		0.0364	0.0003	0.0022	0.0873	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	2.809	2.909	4.673	3.360	3.768	0.161	0.510	0.837	8.54	3.019
Composite CO :	18.66	18.60	23.98	19.98	33.80	1.997	1.459	2.245	116.15	19.009
Composite NOX :	0.574	0.642	1.113	0.762	0.490	0.114	0.456	3.002	0.93	0.895

Appendix A-2
NONROAD2008 Model Input/Output

```
Written by Nonroad interface at 6/4/2009 11:00:28 AM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2011
Season of year     :
Month of year      : January
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2011
Fuel RVP for gas   : 14.25
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0339
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 29
Maximum temper. (F): 61
Average temper. (F): 44
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_co11.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_co11.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP     :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 10:59:11 AM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2012
Season of year     :
Month of year      : January
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2012
Fuel RVP for gas   : 14.25
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0339
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 29
Maximum temper. (F): 61
Average temper. (F): 44
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                  :2270002000
/END/


Diesel Only -
                  :2270000000
                  :2282020000
                  :2285002015
Spark Ignition Only -
                  :2260000000
                  :2265000000
                  :2267000000
                  :2268000000
                  :2282005010
                  :2282005015
                  :2282010005
                  :2285004015
                  :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_co12.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_co12.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP    :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 10:52:24 AM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2013
Season of year     :
Month of year      : January
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2013
Fuel RVP for gas   : 14.25
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0339
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 29
Maximum temper. (F): 61
Average temper. (F): 44
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                  :2270002000
/END/


Diesel Only -
                  :2270000000
                  :2282020000
                  :2285002015
Spark Ignition Only -
                  :2260000000
                  :2265000000
                  :2267000000
                  :2268000000
                  :2282005010
                  :2282005015
                  :2282010005
                  :2285004015
                  :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-----------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_co13.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_co13.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-----------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-----------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-----------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-----------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard  :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
-----------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
-----------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

-----------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
-----------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP     :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 10:51:24 AM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2014
Season of year     :
Month of year      : January
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2014
Fuel RVP for gas   : 14.25
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0339
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 29
Maximum temper. (F): 61
Average temper. (F): 44
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_co14.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_co14.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP    :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 10:50:30 AM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2015
Season of year     :
Month of year      : January
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2015
Fuel RVP for gas   : 14.25
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0339
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 29
Maximum temper. (F): 61
Average temper. (F): 44
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_co15.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_co15.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP    :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 10:49:15 AM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2016
Season of year     :
Month of year      : January
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                    Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                    Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2016
Fuel RVP for gas   : 14.25
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0339
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 29
Maximum temper. (F): 61
Average temper. (F): 44
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_co16.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_co16.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
-----------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
-----------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

-----------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
-----------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP    :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2         0.0350    0.02247
T3         0.2000    0.02247
T3B        0.0500    0.02247
T4A        0.0500    0.02247
T4B        0.0015    0.02247
T4         0.0015    0.30
T4N        0.0015    0.30
T2M        0.0350    0.02247
T3M        1.0       0.02247
T4M        1.0       0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 10:48:20 AM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2017
Season of year     :
Month of year      : January
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2017
Fuel RVP for gas   : 14.25
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0339
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 29
Maximum temper. (F): 61
Average temper. (F): 44
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-----------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_co17.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_co17.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-----------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-----------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-----------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-----------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
-----------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
-----------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

-----------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
-----------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP     :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 2:31:24 PM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-------------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2011
Season of year     :
Month of year      : July
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2011
Fuel RVP for gas   : 7.8
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0092
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 72.6
Maximum temper. (F): 89.1
Average temper. (F): 80
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_o311.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_o311.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard  :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP    :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2         0.0350    0.02247
T3         0.2000    0.02247
T3B        0.0500    0.02247
T4A        0.0500    0.02247
T4B        0.0015    0.02247
T4         0.0015    0.30
T4N        0.0015    0.30
T2M        0.0350    0.02247
T3M        1.0       0.02247
T4M        1.0       0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 2:30:03 PM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2012
Season of year     :
Month of year      : July
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2012
Fuel RVP for gas   : 7.8
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0092
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 72.6
Maximum temper. (F): 89.1
Average temper. (F): 80
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                    :2270002000
/END/


Diesel Only -
                    :2270000000
                    :2282020000
                    :2285002015
Spark Ignition Only -
                    :2260000000
                    :2265000000
                    :2267000000
                    :2268000000
                    :2282005010
                    :2282005015
                    :2282010005
                    :2285004015
                    :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_o312.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_o312.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP     :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 2:29:11 PM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2013
Season of year     :
Month of year      : July
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2013
Fuel RVP for gas   : 7.8
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0092
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 72.6
Maximum temper. (F): 89.1
Average temper. (F): 80
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-----------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_o313.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_o313.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-----------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-----------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-----------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-----------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard  :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP     :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 2:28:17 PM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2014
Season of year     :
Month of year      : July
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2014
Fuel RVP for gas   : 7.8
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0092
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 72.6
Maximum temper. (F): 89.1
Average temper. (F): 80
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_o314.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_o314.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard  :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
-----------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
-----------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

-----------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
-----------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP    :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2         0.0350    0.02247
T3         0.2000    0.02247
T3B        0.0500    0.02247
T4A        0.0500    0.02247
T4B        0.0015    0.02247
T4         0.0015    0.30
T4N        0.0015    0.30
T2M        0.0350    0.02247
T3M        1.0       0.02247
T4M        1.0       0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 2:18:54 PM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2015
Season of year     :
Month of year      : July
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2015
Fuel RVP for gas   : 7.8
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0092
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 72.6
Maximum temper. (F): 89.1
Average temper. (F): 80
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_o315.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_o315.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP     :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 2:17:54 PM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2016
Season of year     :
Month of year      : July
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2016
Fuel RVP for gas   : 7.8
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0092
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 72.6
Maximum temper. (F): 89.1
Average temper. (F): 80
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_o316.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_o316.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP     :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

```
Written by Nonroad interface at 6/4/2009 2:14:54 PM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information.  Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to PERIOD packet
  and Counties & Retrofit files to RUNFILES packet.

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

                  PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated.  The order of the
records matter.  The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1  - Char 10  - Period type for this simulation.
                  Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2  - Char 10  - Type of inventory produced.
                  Valid responses are: TYPICAL DAY and PERIOD TOTAL
3  - Integer  - year of episode (4 digit year)
4  - Char 10  - Month of episode (use complete name of month)
5  - Char 10  - Type of day
                  Valid responses are: WEEKDAY and WEEKEND
-----------------------------------------------------
/PERIOD/
Period type        : Monthly
Summation type     : Typical day
Year of episode    : 2017
Season of year     :
Month of year      : July
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel   :
/END/

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

                  OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model.  Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1  -  Char 80  - First title on reports
2  -  Char 80  - Second title on reports
3  -  Real 10  - Fuel RVP of gasoline for this simulation
4  -  Real 10  - Oxygen weight percent of gasoline for simulation
5  -  Real 10  - Percent sulfur for gasoline
6  -  Real 10  - Percent sulfur for diesel
7  -  Real 10  - Percent sulfur for LPG/CNG
```

```
8  -  Real 10  - Minimum daily temperature (deg. F)
9  -  Real 10  - maximum daily temperature (deg. F)
10 -  Real 10  - Representative average daily temperature (deg. F)
11 -  Char 10  - Flag to determine if region is high altitude
                      Valid responses are: HIGH and LOW
12 -  Char 10  - Flag to determine if RFG adjustments are made
                      Valid responses are: YES and NO
-----------------------------------------------------
/OPTIONS/
Title 1            : PROGRESS ENERGY - WAKE COUNTY NC
Title 2            : 2017
Fuel RVP for gas   : 7.8
Oxygen Weight %    : 0.0
Gas sulfur %       : 0.0092
Diesel sulfur %    : 0.3000
Marine Dsl sulfur %: 0.0435
CNG/LPG sulfur %   : 0.003
Minimum temper. (F): 72.6
Maximum temper. (F): 89.1
Average temper. (F): 80
Altitude of region : LOW
EtOH Blend % Mkt   : 75.1
EtOH Vol %         : 9.3
/END/

-----------------------------------------------------
                  REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and
allocation to perform.

Valid responses are:
US TOTAL   -  emissions are for entire USA without state
              breakout.

50STATE    -  emissions are for all 50 states
              and Washington D.C., by state.

STATE      -  emissions are for a select group of states
              and are state-level estimates

COUNTY     -  emissions are for a select group of counties
              and are county level estimates.  If necessary,
              allocation from state to county will be performed.

SUBCOUNTY  -  emissions are for the specified sub counties
              and are subcounty level estimates.  If necessary,
              county to subcounty allocation will be performed.

The remaining records define the regions to be included.
The type of data which must be specified depends on the
region level.

US TOTAL   -  Nothing needs to be specified.  The FIPS
```

```
              code 00000 is used automatically.

50STATE     -  Nothing needs to be specified.  The FIPS
               code 00000 is used automatically.

STATE       -  state FIPS codes

COUNTY      -  state or county FIPS codes.  State FIPS
               code means include all counties in the
               state.

SUBCOUNTY   -  county FIPS code and subregion code.
-----------------------------------------------------
/REGION/
Region Level        : COUNTY
Wake County NC      : 37183
/END/

or use -
Region Level        : STATE
Michigan            : 26000
-----------------------------------------------------

                  SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed.  It is optional.
If used, only those source categories list will
appear in the output data file.  If the packet is
not found, the model will process all source
categories in the population files.
-----------------------------------------------------
/SOURCE CATEGORY/
                   :2270002000
/END/


Diesel Only -
                   :2270000000
                   :2282020000
                   :2285002015
Spark Ignition Only -
                   :2260000000
                   :2265000000
                   :2267000000
                   :2268000000
                   :2282005010
                   :2282005015
                   :2282010005
                   :2285004015
                   :2285006015
-----------------------------------------------------
 This is the packet that lists the names of output files
 and some of the input data files read by the model.  If
 a drive:\path\ is not given, the location of the
 NONROAD.EXE file itself is assumed.  You will probably
 want to change the names of the Output and Message files
```

```
 to match that of the OPTion file, e.g., MICH-97.OPT,
 MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.
-------------------------------------------------------
/RUNFILES/
ALLOC XREF          : data\allocate\allocate.xrf
ACTIVITY            : data\activity\activity.dat
EXH TECHNOLOGY      : data\tech\tech-exh.dat
EVP TECHNOLOGY      : data\tech\tech-evp.dat
SEASONALITY         : c:\nonroad\data\season\season.dat
REGIONS             : c:\nonroad\data\season\season.dat
MESSAGE             : c:\nonroad\outputs\pe_o317.msg
OUTPUT DATA         : c:\nonroad\outputs\pe_o317.out
EPS2 AMS            :
US COUNTIES FIPS    : data\allocate\fips.dat
RETROFIT            :
/END/

-------------------------------------------------------
This is the packet that defines the equipment population
files read by the model.
-------------------------------------------------------
/POP FILES/
Population File     : c:\nonroad\data\pop\nc.pop
/END/

POPULATION FILE     : c:\nonroad\data\POP\MI.POP


-------------------------------------------------------
This is the packet that defines the growth files
files read by the model.
-------------------------------------------------------
/GROWTH FILES/
National defaults   : data\growth\nation.grw
/END/


/ALLOC FILES/
Air trans. empl.    :c:\nonroad\data\allocate\nc_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\nc_coal.alo
Construction cost   :c:\nonroad\data\allocate\nc_const.alo
Harvested acres     :c:\nonroad\data\allocate\nc_farms.alo
Golf course estab.  :c:\nonroad\data\allocate\nc_golf.alo
Wholesale estab.    :c:\nonroad\data\allocate\nc_holsl.alo
Family housing      :c:\nonroad\data\allocate\nc_house.alo
Logging employees   :c:\nonroad\data\allocate\nc_loggn.alo
Landscaping empl.   :c:\nonroad\data\allocate\nc_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\nc_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\nc_oil.alo
Census population   :c:\nonroad\data\allocate\nc_pop.alo
Allocation File     :c:\nonroad\data\allocate\nc_rail.alo
RV Park establish.  :c:\nonroad\data\allocate\nc_rvprk.alo
Snowblowers comm.   :c:\nonroad\data\allocate\nc_sbc.alo
Snowblowers res.    :c:\nonroad\data\allocate\nc_sbr.alo
Snowmobiles         :c:\nonroad\data\allocate\nc_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\nc_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\nc_wob.alo
```

```
/END/
------------------------------------------------------
This is the packet that defines the emssions factors
files read by the model.
------------------------------------------------------
/EMFAC FILES/
THC exhaust         : data\emsfac\exhthc.emf
CO exhaust          : data\emsfac\exhco.emf
NOX exhaust         : data\emsfac\exhnox.emf
PM exhaust          : data\emsfac\exhpm.emf
BSFC                : data\emsfac\bsfc.emf
Crankcase           : data\emsfac\crank.emf
Spillage            : data\emsfac\spillage.emf
Diurnal             : data\emsfac\evdiu.emf
Tank Perm           : data\emsfac\evtank.emf
Non-RM Hose Perm    : data\emsfac\evhose.emf
RM Fill Neck Perm   : data\emsfac\evneck.emf
RM Supply/Return    : data\emsfac\evsupret.emf
RM Vent Perm        : data\emsfac\evvent.emf
Hot Soaks           : data\emsfac\evhotsk.emf
RuningLoss          : data\emsfac\evrunls.emf
/END/

------------------------------------------------------
This is the packet that defines the deterioration factors
files read by the model.
------------------------------------------------------
/DETERIORATE FILES/
THC exhaust         : data\detfac\exhthc.det
CO exhaust          : data\detfac\exhco.det
NOX exhaust         : data\detfac\exhnox.det
PM exhaust          : data\detfac\exhpm.det
Diurnal             : data\detfac\evdiu.det
Tank Perm           : data\detfac\evtank.det
Non-RM Hose Perm    : data\detfac\evhose.det
RM Fill Neck Perm   : data\detfac\evneck.det
RM Supply/Return    : data\detfac\evsupret.det
RM Vent Perm        : data\detfac\evvent.det
Hot Soaks           : data\detfac\evhotsk.det
RuningLoss          : data\detfac\evrunls.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/
Control Factor      : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT     :
EVAP BMY OUT        :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
```

```
/END/

/DAILY FILES/
DAILY TEMPS/RVP     :
/END/

PM Base Sulfur
 cols 1-10: dsl tech type;
 11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2          0.0350     0.02247
T3          0.2000     0.02247
T3B         0.0500     0.02247
T4A         0.0500     0.02247
T4B         0.0015     0.02247
T4          0.0015     0.30
T4N         0.0015     0.30
T2M         0.0350     0.02247
T3M         1.0        0.02247
T4M         1.0        0.02247
/END/
```

This file contains the seasonality (temporal adjustment data) used
by the NONROAD model. These data are used to convert tons/year
calculated by the model to the arbitrary time period specified by
the model. A description of each packet appears below.

NOTE: If no data for an equipment type can be found in this
file, the default values will be used for temporal allocation.
The default values represent a flat temporal activity profile.

9/16/05, 11b, EPA updates construction seasons per 2003 McGraw-Hill county-month const dollar values.
9/28/05, 11c, EPA updates US Total Seasonal Allocations per new Geographic ALO and new Const Seasonal allocations.

The following packet defines the states/counties in each
geographic region. The region code is arbitrary but the
FIPs code must be a valid state or county FIPS code. If
a state code is supplied, all counties in that state will
be included in the indicated region, unless overridden by
a county-specific record. If a state or county is not
listed under any region, only data records with a global
region code (all blanks) will used for that state or county.

The format is as follows:

1- 5	character	-- user defined region code
6-45	character	-- region description (not used)
46-50	character	-- state or county FIPs code
51-70	character	-- state or county name (not used)

/REGIONS/

US	National	00000	Nation
SE	Southeast	01000	Alabama
MW	Great Lakes/Midwest	02000	Alaska
SW	Southwest	04000	Arizona
SC	South Central	05000	Arkansas
WCST	West Coast	06000	California
RCKMT	Rocky Mountains	08000	Colorado
MIDAT	Mid-Atlantic	09000	Connecticut
MIDAT	Mid-Atlantic	10000	Delaware
SE	Southeast	12000	Florida
SE	Southeast	13000	Georgia
WCST	West Coast	15000	Hawaii
NW	Northwest	16000	Idaho
MW	Great Lakes/Midwest	17000	Illinois
MW	Great Lakes/Midwest	18000	Indiana
MW	Great Lakes/Midwest	19000	Iowa
CW	Central West	20000	Kansas
SC	South Central	21000	Kentucky
SE	Southeast	22000	Louisiana
NE	Northeast/New England	23000	Maine
MIDAT	Mid-Atlantic	24000	Maryland
NE	Northeast/New England	25000	Massachusetts
MW	Great Lakes/Midwest	26000	Michigan
MW	Great Lakes/Midwest	27000	Minnesota
SE	Southeast	28000	Mississippi
MW	Great Lakes/Midwest	29000	Missouri
NW	Northwest	30000	Montana
CW	Central West	31000	Nebraska
CW	Central West	32000	Nevada
NE	Northeast/New England	33000	New Hampshire
MIDAT	Mid-Atlantic	34000	New Jersey

```
SW          Southwest                   35000 New Mexico
NE          Northeast/New England       36000 New York
SE          Southeast                   37000 North Carolina
MW          Great Lakes/Midwest         38000 North Dakota
MW          Great Lakes/Midwest         39000 Ohio
SC          South Central               40000 Oklahoma
NW          Northwest                   41000 Oregon
MIDAT       Mid-Atlantic                42000 Pennsylvania
MIDAT       Mid-Atlantic                44000 Rhode Island
SE          Southeast                   45000 South Carolina
MW          Great Lakes/Midwest         46000 South Dakota
SC          South Central               47000 Tennessee
SW          Southwest                   48000 Texas
CW          Central West                49000 Utah
NE          Northeast/New England       50000 Vermont
MIDAT       Mid-Atlantic                51000 Virginia
NW          Northwest                   53000 Washington
MIDAT       Mid-Atlantic                11000 Washington D.C.
MIDAT       Mid-Atlantic                54000 West Virginia
MW          Great Lakes/Midwest         55000 Wisconsin
RCKMT       Rocky Mountains             56000 Wyoming
SE          Southeast                   72000 Puerto Rico
SE          Southeast                   78000 US Virgin Islands
/END/


------------------------------------------------------------
The following packet contains the monthly adjustment factors.
The factors are fraction of annual activity occurring in the given
month.  For periods longer than a single month (e.g. season)
the factors from each month spanned by the period will be
summed.
Global SCC codes can be used and the model will find the best
match.
A blank region code will apply to all states and counties.
The model will also find the best match on subregion code.

The format is as follows:

  1-  5  character  -- subregion code (blank = match all)
  7- 16  character  -- SCC code (global codes are acceptable)
 18- 51  character  -- equipment description (not used)
 52- 61  real       -- fraction of annual activity in January
 62- 71  real       -- fraction of annual activity in February
 72- 81  real       -- fraction of annual activity in March
 82- 91  real       -- fraction of annual activity in April
 92-101  real       -- fraction of annual activity in May
102-111  real       -- fraction of annual activity in June
112-121  real       -- fraction of annual activity in July
122-131  real       -- fraction of annual activity in August
132-141  real       -- fraction of annual activity in September
142-151  real       -- fraction of annual activity in October
152-161  real       -- fraction of annual activity in November
162-171  real       -- fraction of annual activity in December

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

/MONTHLY/
CW    2260000000 Average                0.081     0.081     0.075     0.075     0.075     0.101     0.101     0.101     0.075     0.075
0.075     0.081
```

CW	2260001000	Recreational Equipment	0.027	0.027	0.08	0.08	0.08	0.147	0.147	0.147	0.08	0.08
0.08	0.027											
CW	2260001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2260002000	Construction	0.070	0.070	0.089	0.089	0.089	0.094	0.094	0.094	0.080	0.080
0.080	0.070											
CW	2260003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2260004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
CW	2260004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2260004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2260004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2260004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2260005000	Agricultural	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
CW	2260006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2260007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2260008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2265000000	Average	0.081	0.081	0.075	0.075	0.075	0.101	0.101	0.101	0.075	0.075
0.075	0.081											
CW	2265001000	Recreational Equipment	0.027	0.027	0.08	0.08	0.08	0.147	0.147	0.147	0.08	0.08
0.08	0.027											
CW	2265001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2265002000	Construction	0.070	0.070	0.089	0.089	0.089	0.094	0.094	0.094	0.080	0.080
0.080	0.070											
CW	2265003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2265004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
CW	2265004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2265004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2265004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2265004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2265005000	Agricultural	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
CW	2265006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2265007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2265008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2267000000	Average	0.081	0.081	0.075	0.075	0.075	0.101	0.101	0.101	0.075	0.075
0.075	0.081											
CW	2267001000	Recreational Equipment	0.027	0.027	0.08	0.08	0.08	0.147	0.147	0.147	0.08	0.08
0.08	0.027											
CW	2267001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2267002000	Construction	0.070	0.070	0.089	0.089	0.089	0.094	0.094	0.094	0.080	0.080

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0.080     0.070
CW     2267003000 Industrial                    0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2267004000 Lawn and Garden excl. chainsaws  0.02   0.02   0.09   0.09   0.09   0.133   0.133   0.133   0.09   0.09
0.09      0.02
CW     2267004020 Lawn and Garden Chainsaws     0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2267004021 Lawn and Garden Chainsaws     0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2267004035 Snowblowers/Snowmobiles       0.333   0.333   0       0       0       0       0       0       0       0
  0       0.333
CW     2267004036 Snowblowers/Snowmobiles       0.333   0.333   0       0       0       0       0       0       0       0
  0       0.333
CW     2267005000 Agricultural                    0.02   0.02   0.09   0.09   0.09   0.133   0.133   0.133   0.09   0.09
0.09      0.02
CW     2267006000 Light Commercial              0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2267007000 Logging                       0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2267008000 Airport Service               0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2268000000 Average                       0.081   0.081   0.075   0.075   0.075   0.101   0.101   0.101   0.075   0.075
0.075     0.081
CW     2268001000 Recreational Equipment        0.027   0.027   0.08    0.08    0.08    0.147   0.147   0.147   0.08    0.08
0.08      0.027
CW     2268001020 Snowblowers/Snowmobiles       0.333   0.333   0       0       0       0       0       0       0       0
  0       0.333
CW     2268002000 Construction                  0.070   0.070   0.089   0.089   0.089   0.094   0.094   0.094   0.080   0.080
0.080     0.070
CW     2268003000 Industrial                    0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2268004000 Lawn and Garden excl. chainsaws  0.02   0.02   0.09   0.09   0.09   0.133   0.133   0.133   0.09   0.09
0.09      0.02
CW     2268004020 Lawn and Garden Chainsaws     0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2268004021 Lawn and Garden Chainsaws     0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2268004035 Snowblowers/Snowmobiles       0.333   0.333   0       0       0       0       0       0       0       0
  0       0.333
CW     2268004036 Snowblowers/Snowmobiles       0.333   0.333   0       0       0       0       0       0       0       0
  0       0.333
CW     2268005000 Agricultural                    0.02   0.02   0.09   0.09   0.09   0.133   0.133   0.133   0.09   0.09
0.09      0.02
CW     2268006000 Light Commercial              0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2268007000 Logging                       0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2268008000 Airport Service               0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2270000000 Average                       0.081   0.081   0.075   0.075   0.075   0.101   0.101   0.101   0.075   0.075
0.075     0.081
CW     2270001000 Recreational Equipment        0.027   0.027   0.08    0.08    0.08    0.147   0.147   0.147   0.08    0.08
0.08      0.027
CW     2270001020 Snowblowers/Snowmobiles       0.333   0.333   0       0       0       0       0       0       0       0
  0       0.333
CW     2270002000 Construction                  0.070   0.070   0.089   0.089   0.089   0.094   0.094   0.094   0.080   0.080
0.080     0.070
CW     2270003000 Industrial                    0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
CW     2270004000 Lawn and Garden excl. chainsaws  0.02   0.02   0.09   0.09   0.09   0.133   0.133   0.133   0.09   0.09
0.09      0.02
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CW	2270004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2270004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
CW	2270005000	Agricultural	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
CW	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
CW	2282000000	Recreational Marine	0.023	0.023	0.075	0.075	0.075	0.16	0.16	0.16	0.075	0.075
0.075	0.023											
CW	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2260000000	Average	0.08	0.08	0.074	0.074	0.074	0.103	0.103	0.103	0.074	0.074
0.074	0.08											
MIDAT	2260001000	Recreational Equipment	0.04	0.04	0.078	0.078	0.078	0.137	0.137	0.137	0.078	0.078
0.078	0.04											
MIDAT	2260001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2260002000	Construction	0.072	0.072	0.079	0.079	0.079	0.098	0.098	0.098	0.085	0.085
0.085	0.072											
MIDAT	2260003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2260004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
MIDAT	2260004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2260004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2260004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2260004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2260005000	Agricultural	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
MIDAT	2260006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2260007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2260008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2265000000	Average	0.08	0.08	0.074	0.074	0.074	0.103	0.103	0.103	0.074	0.074
0.074	0.08											
MIDAT	2265001000	Recreational Equipment	0.04	0.04	0.078	0.078	0.078	0.137	0.137	0.137	0.078	0.078
0.078	0.04											
MIDAT	2265001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2265002000	Construction	0.072	0.072	0.079	0.079	0.079	0.098	0.098	0.098	0.085	0.085
0.085	0.072											
MIDAT	2265003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2265004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09

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0.09      0.02
MIDAT 2265004020 Lawn and Garden Chainsaws          0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2265004021 Lawn and Garden Chainsaws          0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2265004035 Snowblowers/Snowmobiles            0.333    0.333    0        0        0        0        0        0        0        0
  0     0.333
MIDAT 2265004036 Snowblowers/Snowmobiles            0.333    0.333    0        0        0        0        0        0        0        0
  0     0.333
MIDAT 2265005000 Agricultural                        0.02     0.02     0.09     0.09     0.09     0.133    0.133    0.133    0.09     0.09
0.09      0.02
MIDAT 2265006000 Light Commercial                   0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2265007000 Logging                            0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2265008000 Airport Service                    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2267000000 Average                             0.08     0.08     0.074    0.074    0.074    0.103    0.103    0.103    0.074    0.074
0.074      0.08
MIDAT 2267001000 Recreational Equipment              0.04     0.04     0.078    0.078    0.078    0.137    0.137    0.137    0.078    0.078
0.078      0.04
MIDAT 2267001020 Snowblowers/Snowmobiles            0.333    0.333    0        0        0        0        0        0        0        0
  0     0.333
MIDAT 2267002000 Construction                       0.072    0.072    0.079    0.079    0.079    0.098    0.098    0.098    0.085    0.085
0.085     0.072
MIDAT 2267003000 Industrial                         0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2267004000 Lawn and Garden excl. chainsaws     0.02     0.02     0.09     0.09     0.09     0.133    0.133    0.133    0.09     0.09
0.09      0.02
MIDAT 2267004020 Lawn and Garden Chainsaws          0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2267004021 Lawn and Garden Chainsaws          0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2267004035 Snowblowers/Snowmobiles            0.333    0.333    0        0        0        0        0        0        0        0
  0     0.333
MIDAT 2267004036 Snowblowers/Snowmobiles            0.333    0.333    0        0        0        0        0        0        0        0
  0     0.333
MIDAT 2267005000 Agricultural                        0.02     0.02     0.09     0.09     0.09     0.133    0.133    0.133    0.09     0.09
0.09      0.02
MIDAT 2267006000 Light Commercial                   0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2267007000 Logging                            0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2267008000 Airport Service                    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2268000000 Average                             0.08     0.08     0.074    0.074    0.074    0.103    0.103    0.103    0.074    0.074
0.074      0.08
MIDAT 2268001000 Recreational Equipment              0.04     0.04     0.078    0.078    0.078    0.137    0.137    0.137    0.078    0.078
0.078      0.04
MIDAT 2268001020 Snowblowers/Snowmobiles            0.333    0.333    0        0        0        0        0        0        0        0
  0     0.333
MIDAT 2268002000 Construction                       0.072    0.072    0.079    0.079    0.079    0.098    0.098    0.098    0.085    0.085
0.085     0.072
MIDAT 2268003000 Industrial                         0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2268004000 Lawn and Garden excl. chainsaws     0.02     0.02     0.09     0.09     0.09     0.133    0.133    0.133    0.09     0.09
0.09      0.02
MIDAT 2268004020 Lawn and Garden Chainsaws          0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
MIDAT 2268004021 Lawn and Garden Chainsaws          0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083    0.083
0.083     0.083
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MIDAT	2268004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2268004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2268005000	Agricultural	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
MIDAT	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2270000000	Average	0.08	0.08	0.074	0.074	0.074	0.103	0.103	0.103	0.074	0.074
0.074	0.08											
MIDAT	2270001000	Recreational Equipment	0.04	0.04	0.078	0.078	0.078	0.137	0.137	0.137	0.078	0.078
0.078	0.04											
MIDAT	2270001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2270002000	Construction	0.072	0.072	0.079	0.079	0.079	0.098	0.098	0.098	0.085	0.085
0.085	0.072											
MIDAT	2270003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2270004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
MIDAT	2270004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2270004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MIDAT	2270005000	Agricultural	0.02	0.02	0.09	0.09	0.09	0.133	0.133	0.133	0.09	0.09
0.09	0.02											
MIDAT	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MIDAT	2282000000	Recreational Marine	0.007	0.007	0.068	0.068	0.068	0.19	0.19	0.19	0.068	0.068
0.068	0.007											
MIDAT	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2260000000	Average	0.076	0.076	0.07	0.07	0.07	0.118	0.118	0.118	0.07	0.07
0.07	0.076											
MW	2260001000	Recreational Equipment	0.027	0.027	0.077	0.077	0.077	0.153	0.153	0.153	0.077	0.077
0.077	0.027											
MW	2260001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2260002000	Construction	0.061	0.061	0.089	0.089	0.089	0.099	0.099	0.099	0.086	0.086
0.086	0.061											
MW	2260003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
MW	2260004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2260004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2260004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083

0.083	0.083											
MW	2260004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2260004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2260005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2260006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2260007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2260008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2265000000	Average	0.076	0.076	0.07	0.07	0.07	0.118	0.118	0.118	0.07	0.07
0.07	0.076											
MW	2265001000	Recreational Equipment	0.027	0.027	0.077	0.077	0.077	0.153	0.153	0.153	0.077	0.077
0.077	0.027											
MW	2265001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2265002000	Construction	0.061	0.061	0.089	0.089	0.089	0.099	0.099	0.099	0.086	0.086
0.086	0.061											
MW	2265003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
MW	2265004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2265004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2265004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2265004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2265004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2265005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2265006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2265007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2265008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2267000000	Average	0.076	0.076	0.07	0.07	0.07	0.118	0.118	0.118	0.07	0.07
0.07	0.076											
MW	2267001000	Recreational Equipment	0.027	0.027	0.077	0.077	0.077	0.153	0.153	0.153	0.077	0.077
0.077	0.027											
MW	2267001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2267002000	Construction	0.061	0.061	0.089	0.089	0.089	0.099	0.099	0.099	0.086	0.086
0.086	0.061											
MW	2267003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
MW	2267004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2267004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2267004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2267004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2267004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											

MW	2267005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2267006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2267007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2267008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2268000000	Average	0.076	0.076	0.07	0.07	0.07	0.118	0.118	0.118	0.07	0.07
0.07	0.076											
MW	2268001000	Recreational Equipment	0.027	0.027	0.077	0.077	0.077	0.153	0.153	0.153	0.077	0.077
0.077	0.027											
MW	2268001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2268002000	Construction	0.061	0.061	0.089	0.089	0.089	0.099	0.099	0.099	0.086	0.086
0.086	0.061											
MW	2268003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
MW	2268004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2268004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2268004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2268004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2268004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2268005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2270000000	Average	0.076	0.076	0.07	0.07	0.07	0.118	0.118	0.118	0.07	0.07
0.07	0.076											
MW	2270001000	Recreational Equipment	0.027	0.027	0.077	0.077	0.077	0.153	0.153	0.153	0.077	0.077
0.077	0.027											
MW	2270001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2270002000	Construction	0.061	0.061	0.089	0.089	0.089	0.099	0.099	0.099	0.086	0.086
0.086	0.061											
MW	2270003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
MW	2270004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2270004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2270004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
MW	2270005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
MW	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083

0.083	0.083											
MW	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
MW	2282000000	Recreational Marine	0	0	0.05	0.05	0.05	0.233	0.233	0.233	0.05	0.05
0.05	0											
MW	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2260000000	Average	0.078	0.078	0.069	0.069	0.069	0.117	0.117	0.117	0.069	0.069
0.069	0.078											
NE	2260001000	Recreational Equipment	0.047	0.047	0.07	0.07	0.07	0.146	0.146	0.146	0.07	0.07
0.07	0.047											
NE	2260001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2260002000	Construction	0.059	0.059	0.093	0.093	0.093	0.095	0.095	0.095	0.086	0.086
0.086	0.059											
NE	2260003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NE	2260004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2260004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2260004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2260004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2260004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2260005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2260006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2260007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2260008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2265000000	Average	0.078	0.078	0.069	0.069	0.069	0.117	0.117	0.117	0.069	0.069
0.069	0.078											
NE	2265001000	Recreational Equipment	0.047	0.047	0.07	0.07	0.07	0.146	0.146	0.146	0.07	0.07
0.07	0.047											
NE	2265001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2265002000	Construction	0.059	0.059	0.093	0.093	0.093	0.095	0.095	0.095	0.086	0.086
0.086	0.059											
NE	2265003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NE	2265004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2265004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2265004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2265004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2265004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2265005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2265006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											

NE	2265007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2265008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2267000000	Average	0.078	0.078	0.069	0.069	0.069	0.117	0.117	0.117	0.069	0.069
0.069	0.078											
NE	2267001000	Recreational Equipment	0.047	0.047	0.07	0.07	0.07	0.146	0.146	0.146	0.07	0.07
0.07	0.047											
NE	2267001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2267002000	Construction	0.059	0.059	0.093	0.093	0.093	0.095	0.095	0.095	0.086	0.086
0.086	0.059											
NE	2267003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NE	2267004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2267004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2267004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2267004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2267004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2267005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2267006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2267007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2267008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2268000000	Average	0.078	0.078	0.069	0.069	0.069	0.117	0.117	0.117	0.069	0.069
0.069	0.078											
NE	2268001000	Recreational Equipment	0.047	0.047	0.07	0.07	0.07	0.146	0.146	0.146	0.07	0.07
0.07	0.047											
NE	2268001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2268002000	Construction	0.059	0.059	0.093	0.093	0.093	0.095	0.095	0.095	0.086	0.086
0.086	0.059											
NE	2268003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NE	2268004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2268004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2268004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2268004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2268004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2268005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2270000000	Average	0.078	0.078	0.069	0.069	0.069	0.117	0.117	0.117	0.069	0.069

0.069	0.078											
NE	2270001000	Recreational Equipment	0.047	0.047	0.07	0.07	0.07	0.146	0.146	0.146	0.07	0.07
0.07	0.047											
NE	2270001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2270002000	Construction	0.059	0.059	0.093	0.093	0.093	0.095	0.095	0.095	0.086	0.086
0.086	0.059											
NE	2270003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NE	2270004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2270004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2270004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NE	2270005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NE	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NE	2282000000	Recreational Marine	0.003	0.003	0.052	0.052	0.052	0.23	0.23	0.23	0.052	0.052
0.052	0.003											
NE	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2260000000	Average	0.077	0.077	0.071	0.071	0.071	0.113	0.113	0.113	0.071	0.071
0.071	0.077											
NW	2260001000	Recreational Equipment	0.043	0.043	0.073	0.073	0.073	0.143	0.143	0.143	0.073	0.073
0.073	0.043											
NW	2260001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2260002000	Construction	0.069	0.069	0.081	0.081	0.081	0.102	0.102	0.102	0.080	0.080
0.080	0.069											
NW	2260003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NW	2260004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2260004020	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2260004021	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2260004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2260004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2260005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2260006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2260007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2260008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											

NW	2265000000	Average	0.077	0.077	0.071	0.071	0.071	0.113	0.113	0.113	0.071	0.071
0.071	0.077											
NW	2265001000	Recreational Equipment	0.037	0.037	0.075	0.075	0.075	0.147	0.147	0.147	0.075	0.075
0.075	0.037											
NW	2265001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2265002000	Construction	0.069	0.069	0.081	0.081	0.081	0.102	0.102	0.102	0.080	0.080
0.080	0.069											
NW	2265003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NW	2265004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2265004020	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2265004021	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2265004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2265004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2265005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2265006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2265007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2265008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2267000000	Average	0.077	0.077	0.071	0.071	0.071	0.113	0.113	0.113	0.071	0.071
0.071	0.077											
NW	2267001000	Recreational Equipment	0.037	0.037	0.075	0.075	0.075	0.147	0.147	0.147	0.075	0.075
0.075	0.037											
NW	2267001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2267002000	Construction	0.069	0.069	0.081	0.081	0.081	0.102	0.102	0.102	0.080	0.080
0.080	0.069											
NW	2267003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NW	2267004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2267004020	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2267004021	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2267004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2267004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2267005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2267006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2267007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2267008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2268000000	Average	0.077	0.077	0.071	0.071	0.071	0.113	0.113	0.113	0.071	0.071
0.071	0.077											
NW	2268001000	Recreational Equipment	0.037	0.037	0.075	0.075	0.075	0.147	0.147	0.147	0.075	0.075
0.075	0.037											
NW	2268001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0

0	0.333											
NW	2268002000	Construction	0.069	0.069	0.081	0.081	0.081	0.102	0.102	0.102	0.080	0.080
0.080	0.069											
NW	2268003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NW	2268004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2268004020	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2268004021	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2268004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2268004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2268005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2270000000	Average	0.077	0.077	0.071	0.071	0.071	0.113	0.113	0.113	0.071	0.071
0.071	0.077											
NW	2270001000	Recreational Equipment	0.037	0.037	0.075	0.075	0.075	0.147	0.147	0.147	0.075	0.075
0.075	0.037											
NW	2270001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2270002000	Construction	0.069	0.069	0.081	0.081	0.081	0.102	0.102	0.102	0.080	0.080
0.080	0.069											
NW	2270003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
NW	2270004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2270004020	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2270004021	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
NW	2270005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
NW	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
NW	2282000000	Recreational Marine	0.016	0.016	0.063	0.063	0.063	0.19	0.19	0.19	0.063	0.063
0.063	0.016											
NW	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2260000000	Average	0.076	0.076	0.07	0.07	0.07	0.117	0.117	0.117	0.07	0.07
0.07	0.076											
RCKMT	2260001000	Recreational Equipment	0.027	0.027	0.08	0.08	0.08	0.147	0.147	0.147	0.08	0.08
0.08	0.027											

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RCKMT 2260001020 Snowblowers/Snowmobiles          0.333   0.333       0       0       0       0       0       0       0       0
  0     0.333
RCKMT 2260002000 Construction                     0.066   0.066   0.079   0.079   0.079   0.100   0.100   0.100   0.089   0.089
0.089     0.066
RCKMT 2260003000 Industrial                       0.067   0.067   0.083   0.083   0.083     0.1     0.1     0.1   0.083   0.083
0.083     0.067
RCKMT 2260004000 Lawn and Garden excl. chainsaws   0.02    0.02   0.073   0.073   0.073   0.167   0.167   0.167   0.073   0.073
0.073      0.02
RCKMT 2260004020 Lawn and garden Chainsaws        0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2260004021 Lawn and garden Chainsaws        0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2260004035 Snowblowers/Snowmobiles          0.333   0.333       0       0       0       0       0       0       0       0
  0     0.333
RCKMT 2260004036 Snowblowers/Snowmobiles          0.333   0.333       0       0       0       0       0       0       0       0
  0     0.333
RCKMT 2260005000 Agricultural                      0.02    0.02   0.073   0.073   0.073   0.167   0.167   0.167   0.073   0.073
0.073      0.02
RCKMT 2260006000 Light Commercial                 0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2260007000 Logging                          0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2260008000 Airport Service                  0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2265000000 Average                          0.076   0.076    0.07    0.07    0.07   0.117   0.117   0.117    0.07    0.07
0.07      0.076
RCKMT 2265001000 Recreational Equipment           0.027   0.027    0.08    0.08    0.08   0.147   0.147   0.147    0.08    0.08
0.08      0.027
RCKMT 2265001020 Snowblowers/Snowmobiles          0.333   0.333       0       0       0       0       0       0       0       0
  0     0.333
RCKMT 2265002000 Construction                     0.066   0.066   0.079   0.079   0.079   0.100   0.100   0.100   0.089   0.089
0.089     0.066
RCKMT 2265003000 Industrial                       0.067   0.067   0.083   0.083   0.083     0.1     0.1     0.1   0.083   0.083
0.083     0.067
RCKMT 2265004000 Lawn and Garden excl. chainsaws   0.02    0.02   0.073   0.073   0.073   0.167   0.167   0.167   0.073   0.073
0.073      0.02
RCKMT 2265004020 Lawn and garden Chainsaws        0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2265004021 Lawn and garden Chainsaws        0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2265004035 Snowblowers/Snowmobiles          0.333   0.333       0       0       0       0       0       0       0       0
  0     0.333
RCKMT 2265004036 Snowblowers/Snowmobiles          0.333   0.333       0       0       0       0       0       0       0       0
  0     0.333
RCKMT 2265005000 Agricultural                      0.02    0.02   0.073   0.073   0.073   0.167   0.167   0.167   0.073   0.073
0.073      0.02
RCKMT 2265006000 Light Commercial                 0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2265007000 Logging                          0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2265008000 Airport Service                  0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083   0.083
0.083     0.083
RCKMT 2267000000 Average                          0.076   0.076    0.07    0.07    0.07   0.117   0.117   0.117    0.07    0.07
0.07      0.076
RCKMT 2267001000 Recreational Equipment           0.027   0.027    0.08    0.08    0.08   0.147   0.147   0.147    0.08    0.08
0.08      0.027
RCKMT 2267001020 Snowblowers/Snowmobiles          0.333   0.333       0       0       0       0       0       0       0       0
  0     0.333
RCKMT 2267002000 Construction                     0.066   0.066   0.079   0.079   0.079   0.100   0.100   0.100   0.089   0.089
0.089     0.066
RCKMT 2267003000 Industrial                       0.067   0.067   0.083   0.083   0.083     0.1     0.1     0.1   0.083   0.083
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0.083	0.067										
RCKMT	2267004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
RCKMT	2267004020	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2267004021	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2267004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
RCKMT	2267004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
RCKMT	2267005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
RCKMT	2267006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2267007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2267008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2268000000	Average	0.076	0.076	0.07	0.07	0.07	0.117	0.117	0.117	0.07	0.07
0.07	0.076											
RCKMT	2268001000	Recreational Equipment	0.027	0.027	0.08	0.08	0.08	0.147	0.147	0.147	0.08	0.08
0.08	0.027											
RCKMT	2268001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
RCKMT	2268002000	Construction	0.066	0.066	0.079	0.079	0.079	0.100	0.100	0.100	0.089	0.089
0.089	0.066											
RCKMT	2268003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
RCKMT	2268004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
RCKMT	2268004020	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2268004021	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2268004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
RCKMT	2268004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
RCKMT	2268005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
RCKMT	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
RCKMT	2270000000	Average	0.076	0.076	0.07	0.07	0.07	0.117	0.117	0.117	0.07	0.07
0.07	0.076											
RCKMT	2270001000	Recreational Equipment	0.027	0.027	0.08	0.08	0.08	0.147	0.147	0.147	0.08	0.08
0.08	0.027											
RCKMT	2270001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
RCKMT	2270002000	Construction	0.066	0.066	0.079	0.079	0.079	0.100	0.100	0.100	0.089	0.089
0.089	0.066											
RCKMT	2270003000	Industrial	0.067	0.067	0.083	0.083	0.083	0.1	0.1	0.1	0.083	0.083
0.083	0.067											
RCKMT	2270004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073
0.073	0.02											
RCKMT	2270004020	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											

RCKMT	2270004021	Lawn and garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
RCKMT	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0	0
RCKMT	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0	0
RCKMT	2270005000	Agricultural	0.02	0.02	0.073	0.073	0.073	0.167	0.167	0.167	0.073	0.073	0.073
RCKMT	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
RCKMT	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
RCKMT	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
RCKMT	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
RCKMT	2282000000	Recreational Marine	0	0	0.052	0.052	0.052	0.23	0.23	0.23	0.052	0.052	0.052
RCKMT	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
SC	2260000000	Average	0.084	0.084	0.077	0.077	0.077	0.094	0.094	0.094	0.077	0.077	0.077
SC	2260001000	Recreational Equipment	0.05	0.05	0.082	0.082	0.082	0.12	0.12	0.12	0.082	0.082	0.082
SC	2260001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0	0
SC	2260002000	Construction	0.068	0.068	0.092	0.092	0.092	0.091	0.091	0.091	0.082	0.082	0.082
SC	2260003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
SC	2260004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1	0.1
SC	2260004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
SC	2260004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
SC	2260004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0	0
SC	2260004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0	0
SC	2260005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1	0.1
SC	2260006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
SC	2260007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
SC	2260008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
SC	2265000000	Average	0.084	0.084	0.077	0.077	0.077	0.094	0.094	0.094	0.077	0.077	0.077
SC	2265001000	Recreational Equipment	0.05	0.05	0.082	0.082	0.082	0.12	0.12	0.12	0.082	0.082	0.082
SC	2265001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0	0
SC	2265002000	Construction	0.068	0.068	0.092	0.092	0.092	0.091	0.091	0.091	0.082	0.082	0.082
SC	2265003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
SC	2265004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1	0.1
SC	2265004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083

0.083	0.083											
SC	2265004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2265004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2265004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2265005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SC	2265006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2265007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2265008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2267000000	Average	0.084	0.084	0.077	0.077	0.077	0.094	0.094	0.094	0.077	0.077
0.077	0.084											
SC	2267001000	Recreational Equipment	0.05	0.05	0.082	0.082	0.082	0.12	0.12	0.12	0.082	0.082
0.082	0.05											
SC	2267001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2267002000	Construction	0.068	0.068	0.092	0.092	0.092	0.091	0.091	0.091	0.082	0.082
0.082	0.068											
SC	2267003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2267004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SC	2267004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2267004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2267004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2267004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2267005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SC	2267006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2267007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2267008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2268000000	Average	0.084	0.084	0.077	0.077	0.077	0.094	0.094	0.094	0.077	0.077
0.077	0.084											
SC	2268001000	Recreational Equipment	0.05	0.05	0.082	0.082	0.082	0.12	0.12	0.12	0.082	0.082
0.082	0.05											
SC	2268001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2268002000	Construction	0.068	0.068	0.092	0.092	0.092	0.091	0.091	0.091	0.082	0.082
0.082	0.068											
SC	2268003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2268004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SC	2268004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2268004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2268004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											

SC	2268004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2268005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SC	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2270000000	Average	0.084	0.084	0.077	0.077	0.077	0.094	0.094	0.094	0.077	0.077
0.077	0.084											
SC	2270001000	Recreational Equipment	0.05	0.05	0.082	0.082	0.082	0.12	0.12	0.12	0.082	0.082
0.082	0.05											
SC	2270001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2270002000	Construction	0.068	0.068	0.092	0.092	0.092	0.091	0.091	0.091	0.082	0.082
0.082	0.068											
SC	2270003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2270004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SC	2270004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2270004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SC	2270005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SC	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SC	2282000000	Recreational Marine	0.023	0.023	0.075	0.075	0.075	0.16	0.16	0.16	0.075	0.075
0.075	0.023											
SC	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2260000000	Average	0.085	0.085	0.077	0.077	0.077	0.093	0.093	0.093	0.077	0.077
0.077	0.085											
SE	2260001000	Recreational Equipment	0.057	0.057	0.08	0.08	0.08	0.117	0.117	0.117	0.08	0.08
0.08	0.057											
SE	2260001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SE	2260002000	Construction	0.078	0.078	0.080	0.080	0.080	0.089	0.089	0.089	0.086	0.086
0.086	0.078											
SE	2260003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2260004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SE	2260004020	Lawn and Garden Chainswas	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2260004021	Lawn and Garden Chainswas	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2260004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0

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  0     0.333
SE    2260004036 Snowblowers/Snowmobiles          0.333     0.333     0         0         0         0         0         0         0         0
  0     0.333
SE    2260005000 Agricultural                     0.02      0.02      0.1       0.1       0.1       0.113     0.113     0.113     0.1       0.1
0.1     0.02
SE    2260006000 Light Commercial                 0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2260007000 Logging                          0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2260008000 Airport Service                  0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2265000000 Average                          0.085     0.085     0.077     0.077     0.077     0.093     0.093     0.093     0.077     0.077
0.077     0.085
SE    2265001000 Recreational Equipment           0.057     0.057     0.08      0.08      0.08      0.117     0.117     0.117     0.08      0.08
0.08      0.057
SE    2265001020 Snowblowers/Snowmobiles          0.333     0.333     0         0         0         0         0         0         0         0
  0     0.333
SE    2265002000 Construction                     0.078     0.078     0.080     0.080     0.080     0.089     0.089     0.089     0.086     0.086
0.086     0.078
SE    2265003000 Industrial                       0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2265004000 Lawn and Garden excl. chainsaws  0.02      0.02      0.1       0.1       0.1       0.113     0.113     0.113     0.1       0.1
0.1     0.02
SE    2265004020 Lawn and Garden Chainswas        0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2265004021 Lawn and Garden Chainswas        0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2265004035 Snowblowers/Snowmobiles          0.333     0.333     0         0         0         0         0         0         0         0
  0     0.333
SE    2265004036 Snowblowers/Snowmobiles          0.333     0.333     0         0         0         0         0         0         0         0
  0     0.333
SE    2265005000 Agricultural                     0.02      0.02      0.1       0.1       0.1       0.113     0.113     0.113     0.1       0.1
0.1     0.02
SE    2265006000 Light Commercial                 0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2265007000 Logging                          0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2265008000 Airport Service                  0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2267000000 Average                          0.085     0.085     0.077     0.077     0.077     0.093     0.093     0.093     0.077     0.077
0.077     0.085
SE    2267001000 Recreational Equipment           0.057     0.057     0.08      0.08      0.08      0.117     0.117     0.117     0.08      0.08
0.08      0.057
SE    2267001020 Snowblowers/Snowmobiles          0.333     0.333     0         0         0         0         0         0         0         0
  0     0.333
SE    2267002000 Construction                     0.078     0.078     0.080     0.080     0.080     0.089     0.089     0.089     0.086     0.086
0.086     0.078
SE    2267003000 Industrial                       0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2267004000 Lawn and Garden excl. chainsaws  0.02      0.02      0.1       0.1       0.1       0.113     0.113     0.113     0.1       0.1
0.1     0.02
SE    2267004020 Lawn and Garden Chainswas        0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2267004021 Lawn and Garden Chainswas        0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083     0.083
0.083     0.083
SE    2267004035 Snowblowers/Snowmobiles          0.333     0.333     0         0         0         0         0         0         0         0
  0     0.333
SE    2267004036 Snowblowers/Snowmobiles          0.333     0.333     0         0         0         0         0         0         0         0
  0     0.333
SE    2267005000 Agricultural                     0.02      0.02      0.1       0.1       0.1       0.113     0.113     0.113     0.1       0.1
0.1     0.02
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SE	2267006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2267007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2267008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2268000000	Average	0.085	0.085	0.077	0.077	0.077	0.093	0.093	0.093	0.077	0.077
0.077	0.085											
SE	2268001000	Recreational Equipment	0.057	0.057	0.08	0.08	0.08	0.117	0.117	0.117	0.08	0.08
0.08	0.057											
SE	2268001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SE	2268002000	Construction	0.078	0.078	0.080	0.080	0.080	0.089	0.089	0.089	0.086	0.086
0.086	0.078											
SE	2268003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2268004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SE	2268004020	Lawn and Garden Chainswas	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2268004021	Lawn and Garden Chainswas	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2268004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SE	2268004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SE	2268005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SE	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2270000000	Average	0.085	0.085	0.077	0.077	0.077	0.093	0.093	0.093	0.077	0.077
0.077	0.085											
SE	2270001000	Recreational Equipment	0.057	0.057	0.08	0.08	0.08	0.117	0.117	0.117	0.08	0.08
0.08	0.057											
SE	2270001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SE	2270002000	Construction	0.078	0.078	0.080	0.080	0.080	0.089	0.089	0.089	0.086	0.086
0.086	0.078											
SE	2270003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2270004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SE	2270004020	Lawn and Garden Chainswas	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2270004021	Lawn and Garden Chainswas	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SE	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SE	2270005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SE	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083

0.083	0.083											
SE	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SE	2282000000	Recreational Marine	0.023	0.023	0.075	0.075	0.075	0.16	0.16	0.16	0.075	0.075
0.075	0.023											
SE	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2260000000	Average	0.083	0.083	0.078	0.078	0.078	0.094	0.094	0.094	0.078	0.078
0.078	0.083											
SW	2260001000	Recreational Equipment	0.04	0.04	0.085	0.085	0.085	0.123	0.123	0.123	0.085	0.085
0.085	0.04											
SW	2260001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2260002000	Construction	0.075	0.075	0.084	0.084	0.084	0.091	0.091	0.091	0.084	0.084
0.084	0.075											
SW	2260003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2260004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2260004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2260004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2260004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2260004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2260005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2260006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2260007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2260008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2265000000	Average	0.083	0.083	0.078	0.078	0.078	0.094	0.094	0.094	0.078	0.078
0.078	0.083											
SW	2265001000	Recreational Equipment	0.04	0.04	0.085	0.085	0.085	0.123	0.123	0.123	0.085	0.085
0.085	0.04											
SW	2265001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2265002000	Construction	0.075	0.075	0.084	0.084	0.084	0.091	0.091	0.091	0.084	0.084
0.084	0.075											
SW	2265003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2265004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2265004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2265004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2265004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2265004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2265005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2265006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2265007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											

SW	2265008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2267000000	Average	0.083	0.083	0.078	0.078	0.078	0.094	0.094	0.094	0.078	0.078
0.078	0.083											
SW	2267001000	Recreational Equipment	0.04	0.04	0.085	0.085	0.085	0.123	0.123	0.123	0.085	0.085
0.085	0.04											
SW	2267001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2267002000	Construction	0.075	0.075	0.084	0.084	0.084	0.091	0.091	0.091	0.084	0.084
0.084	0.075											
SW	2267003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2267004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2267004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2267004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2267004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2267004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2267005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2267006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2267007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2267008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2268000000	Average	0.083	0.083	0.078	0.078	0.078	0.094	0.094	0.094	0.078	0.078
0.078	0.083											
SW	2268001000	Recreational Equipment	0.04	0.04	0.085	0.085	0.085	0.123	0.123	0.123	0.085	0.085
0.085	0.04											
SW	2268001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2268002000	Construction	0.075	0.075	0.084	0.084	0.084	0.091	0.091	0.091	0.084	0.084
0.084	0.075											
SW	2268003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2268004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2268004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2268004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2268004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2268004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2268005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2270000000	Average	0.083	0.083	0.078	0.078	0.078	0.094	0.094	0.094	0.078	0.078
0.078	0.083											
SW	2270001000	Recreational Equipment	0.04	0.04	0.085	0.085	0.085	0.123	0.123	0.123	0.085	0.085

0.085	0.04											
SW	2270001020	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2270002000	Construction	0.075	0.075	0.084	0.084	0.084	0.091	0.091	0.091	0.084	0.084
0.084	0.075											
SW	2270003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2270004000	Lawn and Garden excl. chainsaws	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2270004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2270004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2270004035	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2270004036	Snowblowers/Snowmobiles	0.333	0.333	0	0	0	0	0	0	0	0
0	0.333											
SW	2270005000	Agricultural	0.02	0.02	0.1	0.1	0.1	0.113	0.113	0.113	0.1	0.1
0.1	0.02											
SW	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
SW	2282000000	Recreational Marine	0.023	0.023	0.075	0.075	0.075	0.16	0.16	0.16	0.075	0.075
0.075	0.023											
SW	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2260000000	Average	0.081	0.082	0.09	0.08	0.081	0.087	0.087	0.087	0.079	0.075
0.085	0.083											
WCST	2260001000	Recreational Equipment	0.06	0.06	0.07	0.08	0.09	0.1	0.1	0.1	0.09	0.09
0.09	0.07											
WCST	2260001020	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2260002000	Construction	0.072	0.072	0.088	0.088	0.088	0.090	0.090	0.090	0.083	0.083
0.083	0.072											
WCST	2260003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2260004000	Lawn and Garden excl. chainsaws	0.057	0.067	0.086	0.086	0.095	0.095	0.095	0.095	0.095	0.086
0.076	0.067											
WCST	2260004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2260004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2260004035	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2260004036	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2260005000	Agricultural	0.054	0.054	0.086	0.086	0.108	0.108	0.108	0.108	0.108	0.075
0.054	0.054											
WCST	2260006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2260007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2260008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2265000000	Average	0.081	0.082	0.09	0.08	0.081	0.087	0.087	0.087	0.079	0.075
0.085	0.083											

WCST	2265001000	Recreational Equipment	0.06	0.06	0.07	0.08	0.09	0.1	0.1	0.1	0.09	0.09
0.09	0.07											
WCST	2265001020	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2265002000	Construction	0.072	0.072	0.088	0.088	0.088	0.090	0.090	0.090	0.083	0.083
0.083	0.072											
WCST	2265003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2265004000	Lawn and Garden excl. chainsaws	0.057	0.067	0.086	0.086	0.095	0.095	0.095	0.095	0.095	0.086
0.076	0.067											
WCST	2265004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2265004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2265004035	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2265004036	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2265005000	Agricultural	0.054	0.054	0.086	0.086	0.108	0.108	0.108	0.108	0.108	0.075
0.054	0.054											
WCST	2265006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2265007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2265008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2267000000	Average	0.081	0.082	0.09	0.08	0.081	0.087	0.087	0.087	0.079	0.075
0.085	0.083											
WCST	2267001000	Recreational Equipment	0.06	0.06	0.07	0.08	0.09	0.1	0.1	0.1	0.09	0.09
0.09	0.07											
WCST	2267001020	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2267002000	Construction	0.072	0.072	0.088	0.088	0.088	0.090	0.090	0.090	0.083	0.083
0.083	0.072											
WCST	2267003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2267004000	Lawn and Garden excl. chainsaws	0.057	0.067	0.086	0.086	0.095	0.095	0.095	0.095	0.095	0.086
0.076	0.067											
WCST	2267004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2267004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2267004035	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2267004036	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2267005000	Agricultural	0.054	0.054	0.086	0.086	0.108	0.108	0.108	0.108	0.108	0.075
0.054	0.054											
WCST	2267006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2267007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2267008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2268000000	Average	0.081	0.082	0.09	0.08	0.081	0.087	0.087	0.087	0.079	0.075
0.085	0.083											
WCST	2268001000	Recreational Equipment	0.06	0.06	0.07	0.08	0.09	0.1	0.1	0.1	0.09	0.09
0.09	0.07											
WCST	2268001020	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2268002000	Construction	0.072	0.072	0.088	0.088	0.088	0.090	0.090	0.090	0.083	0.083

0.083	0.072											
WCST	2268003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2268004000	Lawn and Garden excl. chainsaws	0.057	0.067	0.086	0.086	0.095	0.095	0.095	0.095	0.095	0.086
0.076	0.067											
WCST	2268004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2268004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2268004035	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2268004036	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2268005000	Agricultural	0.054	0.054	0.086	0.086	0.108	0.108	0.108	0.108	0.108	0.075
0.054	0.054											
WCST	2268006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2268007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2268008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2270000000	Average	0.081	0.082	0.09	0.08	0.081	0.087	0.087	0.087	0.079	0.075
0.085	0.083											
WCST	2270001000	Recreational Equipment	0.06	0.06	0.07	0.08	0.09	0.1	0.1	0.1	0.09	0.09
0.09	0.07											
WCST	2270001020	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2270002000	Construction	0.072	0.072	0.088	0.088	0.088	0.090	0.090	0.090	0.083	0.083
0.083	0.072											
WCST	2270003000	Industrial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2270004000	Lawn and Garden excl. chainsaws	0.057	0.067	0.086	0.086	0.095	0.095	0.095	0.095	0.095	0.086
0.076	0.067											
WCST	2270004020	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2270004021	Lawn and Garden Chainsaws	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2270004035	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2270004036	Snowblowers/Snowmobiles	0.2	0.2	0.18	0.06	0.02	0	0	0	0	0
0.14	0.2											
WCST	2270005000	Agricultural	0.054	0.054	0.086	0.086	0.108	0.108	0.108	0.108	0.108	0.075
0.054	0.054											
WCST	2270006000	Light Commercial	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2270007000	Logging	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2270008000	Airport Service	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2280000000	Commercial Marine	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
WCST	2282000000	Recreational Marine	0.023	0.023	0.075	0.075	0.075	0.16	0.16	0.16	0.075	0.075
0.075	0.023											
WCST	2285000000	Railway Maintenance	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
0.083	0.083											
US	2260001000		0.0422	0.0422	0.0777	0.0785	0.0793	0.1330	0.1330	0.1330	0.0793	0.0793
0.0793	0.0431											
US	2260001020		0.3321	0.3321	0.0016	0.0005	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
0.0013	0.3321											
US	2260002000		0.0699	0.0699	0.0848	0.0848	0.0848	0.0941	0.0941	0.0941	0.0845	0.0845
0.0845	0.0699											

US	2260003000	0.0764	0.0764	0.0832	0.0832	0.0832	0.0905	0.0905	0.0905	0.0832	0.0832
0.0832	0.0764										
US	2260004000	0.0240	0.0251	0.0865	0.0865	0.0874	0.1354	0.1354	0.1354	0.0874	0.0865
0.0854	0.0251										
US	2260004016	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2260004020	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833										
US	2260004021	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833										
US	2260004026	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2260004031	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2260004035	0.3308	0.3308	0.0035	0.0012	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000
0.0027	0.3308										
US	2260004036	0.3298	0.3298	0.0048	0.0016	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000
0.0037	0.3298										
US	2260004071	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2260005000	0.0210	0.0210	0.0817	0.0817	0.0824	0.1488	0.1488	0.1488	0.0824	0.0814
0.0808	0.0210										
US	2260006000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833										
US	2260007000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833										
US	2260008000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833										
US	2265001000	0.0419	0.0419	0.0778	0.0786	0.0794	0.1332	0.1332	0.1332	0.0794	0.0794
0.0794	0.0427										
US	2265001050	0.0401	0.0401	0.0773	0.0779	0.0785	0.1367	0.1367	0.1367	0.0785	0.0785
0.0785	0.0407										
US	2265002000	0.0699	0.0699	0.0848	0.0848	0.0848	0.0941	0.0941	0.0941	0.0845	0.0845
0.0845	0.0699										
US	2265003000	0.0764	0.0764	0.0832	0.0832	0.0832	0.0905	0.0905	0.0905	0.0832	0.0832
0.0832	0.0764										
US	2265004000	0.0240	0.0251	0.0865	0.0865	0.0874	0.1354	0.1354	0.1354	0.0874	0.0865
0.0854	0.0251										
US	2265004011	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004016	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004026	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004031	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004035	0.3308	0.3308	0.0035	0.0012	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000
0.0027	0.3308										
US	2265004036	0.3298	0.3298	0.0048	0.0016	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000
0.0037	0.3298										
US	2265004041	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004046	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004051	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004056	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004066	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280										
US	2265004071	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878

0.0861	0.0280									
US	2265004076	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280									
US	2265005000	0.0210	0.0210	0.0817	0.0817	0.0824	0.1488	0.1488	0.1488	0.0824	0.0814
0.0808	0.0210									
US	2265006000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833									
US	2265007000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833									
US	2265008000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833									
US	2265010010	0.0823	0.0823	0.0769	0.0765	0.0765	0.0980	0.0980	0.0980	0.0764	0.0763
0.0767	0.0823									
US	2267001060	0.0419	0.0419	0.0778	0.0786	0.0794	0.1332	0.1332	0.1332	0.0794	0.0794
0.0794	0.0427									
US	2267002000	0.0699	0.0699	0.0848	0.0848	0.0848	0.0941	0.0941	0.0941	0.0845	0.0845
0.0845	0.0699									
US	2267003000	0.0764	0.0764	0.0832	0.0832	0.0832	0.0905	0.0905	0.0905	0.0832	0.0832
0.0832	0.0764									
US	2267004066	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280									
US	2267005000	0.0210	0.0210	0.0817	0.0817	0.0824	0.1488	0.1488	0.1488	0.0824	0.0814
0.0808	0.0210									
US	2267006000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833									
US	2267008000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833									
US	2268002000	0.0699	0.0699	0.0848	0.0848	0.0848	0.0941	0.0941	0.0941	0.0845	0.0845
0.0845	0.0699									
US	2268003000	0.0764	0.0764	0.0832	0.0832	0.0832	0.0905	0.0905	0.0905	0.0832	0.0832
0.0832	0.0764									
US	2268005000	0.0210	0.0210	0.0817	0.0817	0.0824	0.1488	0.1488	0.1488	0.0824	0.0814
0.0808	0.0210									
US	2268006000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833									
US	2268010010	0.0823	0.0823	0.0769	0.0765	0.0765	0.0980	0.0980	0.0980	0.0764	0.0763
0.0767	0.0823									
US	2270001060	0.0419	0.0419	0.0778	0.0786	0.0794	0.1332	0.1332	0.1332	0.0794	0.0794
0.0794	0.0427									
US	2270002000	0.0699	0.0699	0.0848	0.0848	0.0848	0.0941	0.0941	0.0941	0.0845	0.0845
0.0845	0.0699									
US	2270003000	0.0764	0.0764	0.0832	0.0832	0.0832	0.0905	0.0905	0.0905	0.0832	0.0832
0.0832	0.0764									
US	2270004031	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280									
US	2270004036	0.3298	0.3298	0.0048	0.0016	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000
0.0037	0.3298									
US	2270004046	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280									
US	2270004056	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280									
US	2270004066	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280									
US	2270004071	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280									
US	2270004076	0.0263	0.0280	0.0878	0.0878	0.0893	0.1298	0.1298	0.1298	0.0893	0.0878
0.0861	0.0280									
US	2270005000	0.0210	0.0210	0.0817	0.0817	0.0824	0.1488	0.1488	0.1488	0.0824	0.0814
0.0808	0.0210									
US	2270006000	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833	0.0833
0.0833	0.0833									

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US    2270007000                                0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833
0.0833    0.0833
US    2270008000                                0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833
0.0833    0.0833
US    2270009000                                0.0807    0.0807    0.0744    0.0744    0.0744    0.1038    0.1038    0.1038    0.0744    0.0744
0.0744    0.0807
US    2270010010                                0.0823    0.0823    0.0769    0.0765    0.0765    0.0980    0.0980    0.0980    0.0764    0.0763
0.0767    0.0823
US    2282000000                                0.0128    0.0128    0.0653    0.0653    0.0653    0.1900    0.1900    0.1900    0.0653    0.0653
0.0653    0.0128
US    2285000000                                0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833    0.0833
0.0833    0.0833
/END/

------------------------------------------------------------------
The following packet contains the day-of-week adjustment factors.
The factors are fraction of weekly activity occurring in the given
day.  Two factors are provided: typical weekday and typical
weekend day.  To get the total weeks activity, multiply the
weekday factor by 5 and the weekend factor by 2 and add the
results together.
Global SCC codes can be used and the model will find the best
match.
A blank region code will apply to all states and counties.
The model will also find the best match on subregion code.

The format is as follows:

  1-  5  character  -- subregion code (blank = match all)
  7- 16  character  -- SCC code (global codes are acceptable)
 18- 52  character  -- equipment description (not used)
 52- 61  real       -- fraction of weekly activity in typical weekday
 62- 71  real       -- fraction of weekly activity in typical weekend
------------------------------------------------------------------

/DAILY/
      2260001000 Recreational Equipment            0.1111111 0.2222222
      2260002000 Construction                      0.1666667 0.0833334
      2260003000 Industrial                        0.1666667 0.0833334
      2260003060 AC\Refrigeration                  0.1428571 0.1428571
      2260004000 Lawn & Garden                     0.1111111 0.2222222
      2260005000 Agricultural                      0.1666667 0.0833334
      2260006000 Light Commercial                  0.1666667 0.0833334
      2260007000 Logging                           0.1666667 0.0833334
      2260008000 Airport Service                   0.1428571 0.1428571
      2260009000 Underground Mining                0.1666667 0.0833334
      2265001000 Recreational Equipment            0.1111111 0.2222222
      2265002000 Construction                      0.1666667 0.0833334
      2265003000 Industrial                        0.1666667 0.0833334
      2265003060 AC\Refrigeration                  0.1428571 0.1428571
      2265004000 Lawn & Garden                     0.1111111 0.2222222
      2265005000 Agricultural                      0.1666667 0.0833334
      2265006000 Light Commercial                  0.1666667 0.0833334
      2265007000 Logging                           0.1666667 0.0833334
      2265008000 Airport Service                   0.1428571 0.1428571
      2265009000 Underground Mining                0.1666667 0.0833334
      2267001000 Recreational Equipment            0.1111111 0.2222222
      2267002000 Construction                      0.1666667 0.0833334
      2267003000 Industrial                        0.1666667 0.0833334
      2267003060 AC\Refrigeration                  0.1428571 0.1428571
      2267004000 Lawn & Garden                     0.1111111 0.2222222
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2267005000		Agricultural	0.1666667	0.0833334
2267006000		Light Commercial	0.1666667	0.0833334
2267007000		Logging	0.1666667	0.0833334
2267008000		Airport Service	0.1428571	0.1428571
2267009000		Underground Mining	0.1666667	0.0833334
2268001000		Recreational Equipment	0.1111111	0.2222222
2268002000		Construction	0.1666667	0.0833334
2268003000		Industrial	0.1666667	0.0833334
2268003060		AC\Refrigeration	0.1428571	0.1428571
2268004000		Lawn & Garden	0.1111111	0.2222222
2268005000		Agricultural	0.1666667	0.0833334
2268006000		Light Commercial	0.1666667	0.0833334
2268007000		Logging	0.1666667	0.0833334
2268008000		Airport Service	0.1428571	0.1428571
2268009000		Underground Mining	0.1666667	0.0833334
2270001000		Recreational Equipment	0.1111111	0.2222222
2270002000		Construction	0.1666667	0.0833334
2270003000		Industrial	0.1666667	0.0833334
2270003060		AC\Refrigeration	0.1428571	0.1428571
2270004000		Lawn & Garden	0.1111111	0.2222222
2270005000		Agricultural	0.1666667	0.0833334
2270006000		Light Commercial	0.1666667	0.0833334
2270007000		Logging	0.1666667	0.0833334
2270008000		Airport Service	0.1428571	0.1428571
2270009000		Underground Mining	0.1666667	0.0833334
2260004011	2-Stroke	Lawn mowers (Comm.)	0.1600000	0.1000000
2260004016	2-Stroke	Rotary Tillers < 5 HP	0.1600000	0.1000000
2260004021	2-Stroke	Chain Saws < 4 HP (Com	0.1600000	0.1000000
2260004026	2-Stroke	Trimmers/Edgers/Brush	0.1600000	0.1000000
2260004031	2-Stroke	Leafblowers/Vacuums (C	0.1600000	0.1000000
2260004036	2-Stroke	Snowblowers (Comm.)	0.1600000	0.1000000
2260004051	2-Stroke	Shredders < 5 HP (Comm	0.1600000	0.1000000
2260004071	2-Stroke	Commercial Turf Equipm	0.1600000	0.1000000
2260004076	2-Stroke	Other Lawn & Garden Eq	0.1600000	0.1000000
2265004011	4-Stroke	Lawn mowers (Comm.)	0.1600000	0.1000000
2265004016	4-Stroke	Rotary Tillers < 5 HP	0.1600000	0.1000000
2265004026	4-Stroke	Trimmers/Edgers/Brush	0.1600000	0.1000000
2265004031	4-Stroke	Leafblowers/Vacuums (C	0.1600000	0.1000000
2265004036	4-Stroke	Snowblowers (Comm.)	0.1600000	0.1000000
2265004041	4-Stroke	Rear Engine Riding Mow	0.1600000	0.1000000
2265004046	4-Stroke	Front Mowers (Comm.)	0.1600000	0.1000000
2265004051	4-Stroke	Shredders < 5 HP (Comm	0.1600000	0.1000000
2265004056	4-Stroke	Lawn & Garden Tractors	0.1600000	0.1000000
2265004066	4-Stroke	Chippers/Stump Grinder	0.1600000	0.1000000
2265004071	4-Stroke	Commercial Turf Equipm	0.1600000	0.1000000
2265004076	4-Stroke	Other Lawn & Garden Eq	0.1600000	0.1000000
2267004011	LPG	Lawn mowers (Comm.)	0.1600000	0.1000000
2267004016	LPG	Rotary Tillers < 5 HP	0.1600000	0.1000000
2267004026	LPG	Trimmers/Edgers/Brush	0.1600000	0.1000000
2267004031	LPG	Leafblowers/Vacuums (C	0.1600000	0.1000000
2267004036	LPG	Snowblowers (Comm.)	0.1600000	0.1000000
2267004041	LPG	Rear Engine Riding Mow	0.1600000	0.1000000
2267004046	LPG	Front Mowers (Comm.)	0.1600000	0.1000000
2267004051	LPG	Shredders < 5 HP (Comm	0.1600000	0.1000000
2267004056	LPG	Lawn & Garden Tractors	0.1600000	0.1000000
2267004066	LPG	Chippers/Stump Grinder	0.1600000	0.1000000
2267004071	LPG	Commercial Turf Equipm	0.1600000	0.1000000
2267004076	LPG	Other Lawn & Garden Eq	0.1600000	0.1000000
2268004011	CNG	Lawn mowers (Comm.)	0.1600000	0.1000000
2268004016	CNG	Rotary Tillers < 5 HP	0.1600000	0.1000000
2268004026	CNG	Trimmers/Edgers/Brush	0.1600000	0.1000000

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      2268004031 CNG       Leafblowers/Vacuums (C   0.1600000 0.1000000
      2268004036 CNG       Snowblowers (Comm.)      0.1600000 0.1000000
      2268004041 CNG       Rear Engine Riding Mow   0.1600000 0.1000000
      2268004046 CNG       Front Mowers (Comm.)     0.1600000 0.1000000
      2268004051 CNG       Shredders < 5 HP (Comm   0.1600000 0.1000000
      2268004056 CNG       Lawn & Garden Tractors   0.1600000 0.1000000
      2268004066 CNG       Chippers/Stump Grinder   0.1600000 0.1000000
      2268004071 CNG       Commercial Turf Equipm   0.1600000 0.1000000
      2268004076 CNG       Other Lawn & Garden Eq   0.1600000 0.1000000
      2270004031 Diesel  Leafblowers/Vacuums (Com   0.1600000 0.1000000
      2270004036 Diesel  Snowblowers (Comm.)       0.1600000 0.1000000
      2270004041 Diesel  Rear Engine Riding Mower  0.1600000 0.1000000
      2270004046 Diesel  Front Mowers (Comm.)      0.1600000 0.1000000
      2270004056 Diesel  Lawn & Garden Tractors (  0.1600000 0.1000000
      2270004066 Diesel  Chippers/Stump Grinders   0.1600000 0.1000000
      2270004071 Diesel  Commercial Turf Equipmen  0.1600000 0.1000000
      2270004076 Diesel  Other Lawn & Garden Equi  0.1600000 0.1000000
      2282000000 Recreational Marine               0.0600000 0.3500000
      2285000000 Railway Maintenance               0.1800000 0.0500000
/END/
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NONROAD2008 Notes:

The tabs in this workbook represent exported NONROAD data
They were created by using the nonroad reports function and creating a report for emission factors by SCC and hp in g/hp-hr
The export to excel function was used to create a file for each run
Those excel files are compiled here into one workbook
The emission factors that were used are highlighted in yellow on the following tabs
Only the ozone summer values are provided. The temperature and fuel RVP variations did not effect diesel engine emission factors

The units of emission factors in the following tabs are grams/horsepower-hour

Range	HP	EQUIP	CLASSIFICATION	Fuel Type	VOC exhaust	CO exhaust	NOx exhaust	SO2 exhaust	PM exhaust
100 < HP <= 175	175	Tractors/Loaders/Backl	Construction and Mining E	Diesel	0.978012159	3.852415317	6.093199189	1.146400041	0.772665735
175 < HP <= 300	300	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.249490758	1.099160333	3.228023642	0.951367139	0.413635249
300 < HP <= 600	600	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.215997531	1.588674044	3.887658901	0.961348177	0.383931771
750 < HP <= 1000	1000	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.34168096	1.767630694	5.33638137	0.960631673	0.422414237

Range	HP	EQUIP	CLASSIFICATION	Fuel Type	VOC exhaust	CO exhaust	NOx exhaust	SO2 exhaust	PM exhaust
100 < HP <= 175	175	Tractors/Loaders/Backhc	Construction and Mining E	Diesel	0.903249147	3.51911228	5.698051776	1.126806977	0.797836311
175 < HP <= 300	300	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.228404988	0.97247531	2.898752097	0.918718614	0.503926931
300 < HP <= 600	600	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.203853177	1.42093661	3.557303555	0.937803417	0.446836783
750 < HP <= 1000	1000	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.320325616	1.60329485	4.959020455	0.93713975	0.478352676

Range	HP	EQUIP	CLASSIFICATION	Fuel Type	VOC exhaust	CO exhaust	NOx exhaust	SO2 exhaust	PM exhaust
100 < HP <= 175	175	Tractors/Loaders/Backho	Construction and Mining	Diesel	0.831857536	3.198811294	5.318923268	1.107794701	0.82214113
175 < HP <= 300	300	Crawler Tractor/Dozers	Construction and Mining	Diesel	0.2093298	0.855317168	2.602287567	0.887448334	0.59045337
300 < HP <= 600	600	Crawler Tractor/Dozers	Construction and Mining	Diesel	0.193148265	1.263840975	3.24875664	0.915149607	0.50767408
750 < HP <= 1000	1000	Crawler Tractor/Dozers	Construction and Mining	Diesel	0.309647382	1.521770602	4.643487104	0.914485715	0.53986278

Range	HP	EQUIP	CLASSIFICATION	Fuel Type	VOC exhaust	CO exhaust	NOx exhaust	SO2 exhaust	PM exhaust
100 < HP <= 175	175	Tractors/Loaders/Backh	Construction and Mining E	Diesel	0.763681048	2.89208762	4.888062334	1.089425642	0.845278212
175 < HP <= 300	300	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.192018733	0.74162697	2.204377222	0.857646763	0.672489127
300 < HP <= 600	600	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.18433958	1.12840355	2.888959055	0.893307449	0.567275305
750 < HP <= 1000	1000	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.301935446	1.46286793	4.352104256	0.892637311	0.600792355

Range	HP	EQUIP	CLASSIFICATION	Fuel Type	VOC exhaust	CO exhaust	NOx exhaust	SO2 exhaust	PM exhaust
100 < HP <= 175	175	Tractors/Loaders/Backho	Construction and Mining E	Diesel	0.698984181	2.59999701	4.475439603	1.071660259	0.86752178
175 < HP <= 300	300	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.180379444	0.63020891	1.871032403	0.829386241	0.74789839
300 < HP <= 600	600	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.176750493	1.0042194	2.55379627	0.872262081	0.62487202
750 < HP <= 1000	1000	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.282045188	1.32373493	4.07752173	0.871662187	0.65626843

Range	HP	EQUIP	CLASSIFICATION	Fuel Type	VOC exhaust	CO exhaust	NOx exhaust	SO2 exhaust	PM exhaust
100 < HP <= 175	175	Tractors/Loaders/Backhc	Construction and Mining E	Diesel	0.638573093	2.32981589	4.084294595	1.054489264	0.88933584
175 < HP <= 300	300	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.170258012	0.52261349	1.566174647	0.802617112	0.8182725
300 < HP <= 600	600	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.170181542	0.8902953	2.243003229	0.852106206	0.68008346
750 < HP <= 1000	1000	Crawler Tractor/Dozers	Construction and Mining E	Diesel	0.263911774	1.19661744	3.820290636	0.851572249	0.7096114

Range	HP	EQUIP	CLASSIFICATION	Fuel Type	VOC exhaust	CO exhaust	NOx exhaust	SO2 exhaust	PM exhaust
100 < HP <= 175	175	Tractors/Loaders/Backhc	Construction and Mining I	Diesel	0.59031737	2.134236398	3.742928288	1.037801889	0.91416501
175 < HP <= 300	300	Crawler Tractor/Dozers	Construction and Mining I	Diesel	0.161401262	0.420009236	1.287348874	0.777555981	0.88319488
300 < HP <= 600	600	Crawler Tractor/Dozers	Construction and Mining I	Diesel	0.164360131	0.783940703	1.952637594	0.832776182	0.73287658
750 < HP <= 1000	1000	Crawler Tractor/Dozers	Construction and Mining I	Diesel	0.247176575	1.078036441	3.578648872	0.832304558	0.7607162

Appendix A-3
Emission Factors for Locomotives

United States Environmental Protection Agency | Air and Radiation | EPA420-F-97-051 December 1997

Office of Mobile Sources

EPA

Technical Highlights

Emission Factors for Locomotives

The Environmental Protection Agency (EPA) has established emission standards for oxides of nitrogen (NOx), hydrocarbons (HC), carbon monoxide (CO), particulate matter (PM) and smoke for newly manufactured and remanufactured diesel-powered locomotives and locomotive engines, which have previously been unregulated. Three separate sets of emission standards have been adopted, with applicability of the standards dependent on the date a locomotive is first manufactured. The first set of standards (Tier 0) apply to locomotives and locomotive engines originally manufactured from 1973 through 2001. The second set of standards (Tier 1) apply to locomotives and locomotive engines originally manufactured from 2002 through 2004. The final set of standards (Tier 2) apply to locomotives and locomotive engines originally manufactured in 2005 and later. To analyze the environmental benefits expected from these new standards, EPA had to calculate emission factors for locomotives.

Estimated Baseline Freight Locomotive Emission Rates

In support of the rulemaking finalizing the locomotive emission standards, EPA has estimated average emission rates, given in grams per brake horsepower-hour (g/bhp-hr), for current uncontrolled locomotives. These estimates are shown in Table 1. It is important to note that there is significant variability in in-use emission rates. Table 2 shows the range of emission rates that have been reported for NOx and PM.

Table 1 - Estimated Baseline In-Use Emission Rates (g/bhp-hr)				
	HC	CO	NOx	PM
Line-Haul*	0.48	1.28	13.0	0.32
Switch**	1.01	1.83	17.4	0.44

* Line-haul locomotives over the line-haul duty-cycle
** Switch locomotives over the switch duty-cycle

Table 2 - Range of NOx and PM Emission Rates (g/bhp-hr)			
Line-Haul Cycle		Switch Cycle	
NOx	PM	NOx	PM
10.3-18.2	0.22-0.41	9.2-33.1	0.22-0.86

Conversion to Gram per Gallon Emission Factors

It is often useful to express emission rates as grams of pollutant emitted per gallon of fuel consumed (g/gal). This can be done by multiplying the emission rates in Table 1 by a conversion factor. EPA has estimated the appropriate conversion factor to be 20.8 bhp-hr/gal. These converted emission factors are shown in Table 3.

Table 3 - Converted Emission Factors (g/gal)				
	HC	CO	NOx	PM
Line-Haul	10	26.6	270	6.7
Switch	21	38.1	362	9.2

Projected Future Emission Factors

With the new national emission standards for both newly manufactured and remanufactured locomotives originally built after 1972, future locomotive emission rates are projected to be much lower than the baseline rates shown above. EPA's estimates of future emission rates for

Tier 0-Tier 2 locomotives are shown in Tables 4-6, respectively. Table 9 gives the expected fleet average emission factors for all locomotives, which reflects the penetration of the Tier 0-Tier 2 locomotives into the fleet over time.

Table 4 - Estimated Controlled Emission Rates for Locomotives Manufactured in 1973-2001 (Tier 0)

	HC		CO		NOx		PM	
	g/bhp-hr	g/gal	g/bhp-hr	g/gal	g/bhp-hr	g/gal	g/bhp-hr	g/gal
Line-Haul	0.48	10	1.28	26.6	8.6	178	0.32	6.7
Switch	1.01	21	1.83	38.1	12.6	262	0.44	9.2

Table 5 - Estimated Controlled Emission Rates for Locomotives Manufactured in 2002-2004 (Tier 1)

	HC		CO		NOx		PM	
	g/bhp-hr	g/gal	g/bhp-hr	g/gal	g/bhp-hr	g/gal	g/bhp-hr	g/gal
Line-Haul	0.47	9.8	1.28	26.6	6.7	139	0.32	6.7
Switch	1.01	21	1.83	38.1	9.9	202	0.44	9.2

Table 6 - Estimated Controlled Emission Rates for Locomotives Manufactured after 2004 (Tier 2)

	HC		CO		NOx		PM	
	g/bhp-hr	g/gal	g/bhp-hr	g/gal	g/bhp-hr	g/gal	g/bhp-hr	g/gal
Line-Haul	0.26	5.4	1.28	26.6	5.0	103	0.17	3.6
Switch	0.52	11	1.83	38.1	7.3	152	0.21	4.3

Emission Inventory Estimation

Total emissions can be calculated by multiplying the emission factors (in g/gal) by the fuel consumption rates (in million-gal/yr) to give annual emission rates (in metric tons per year). This metric estimate can be converted to standard tons (or short tons) per year, by multiplying it by 1.1.

In the United States, the great majority of fuel consumed by locomotives each year is used in line-haul freight service. Smaller amounts are also used in switching and passenger service. EPA's estimates of these fuel volumes are shown in Table 7. EPA's estimates of annual emission rates calculated from these fuel consumption rates are shown in Table 8.

Table 7 - 1996 Locomotive Fuel Consumption by Service Category (million gal/year)	
National Freight Line-Haul	3,331
National Freight Switching	270
Local and Regional Freight	215
Passenger	133

Table 8 - Estimated 1996 Nationwide Locomotive Emission Rates (thousand short tons per year)			
HC	CO	NOx	PM
47	119	1,202	30

For More Information

For further information on emission factors for locomotives, please write to:

U.S. Environmental Protection Agency
Engine Programs and Compliance Division
2565 Plymouth Road
Ann Arbor, MI 48105

Additional documents on locomotive emission standards are available electronically from the EPA Internet server at:

http://www.epa.gov/OMSWWW/locomotv.htm

or by calling (734) 668-4333.

Table 9 - Fleet Average Emission Factors For All Locomotives								
	(g/bhp-hr)				(g/gal)			
Year	HC	CO	NOx	PM	HC	CO	NOx	PM
1999	0.52	1.32	13.30	0.33	10.7	27.4	276.7	6.8
2000	0.52	1.32	13.16	0.33	10.7	27.4	273.8	6.8
2001	0.52	1.32	12.74	0.33	10.7	27.4	265.0	6.8
2002	0.52	1.32	11.96	0.33	10.7	27.4	248.8	6.8
2003	0.52	1.32	11.22	0.33	10.7	27.4	233.3	6.8
2004	0.51	1.32	10.49	0.33	10.7	27.4	218.1	6.8
2005	0.50	1.32	9.60	0.32	10.4	27.4	199.8	6.6
2006	0.48	1.32	8.92	0.31	10.1	27.4	185.6	6.4
2007	0.47	1.32	8.51	0.30	9.8	27.4	177.0	6.2
2008	0.46	1.32	8.29	0.29	9.6	27.4	172.5	6.0
2009	0.45	1.32	8.09	0.28	9.4	27.4	168.3	5.9
2010	0.44	1.32	7.84	0.28	9.1	27.4	163.0	5.7
2011	0.44	1.32	7.74	0.27	9.1	27.4	161.1	5.7
2012	0.43	1.32	7.62	0.27	8.9	27.4	158.5	5.6
2013	0.42	1.32	7.50	0.26	8.8	27.4	155.9	5.5
2014	0.42	1.32	7.37	0.26	8.7	27.4	153.4	5.4
2015	0.41	1.32	7.26	0.25	8.5	27.4	151.0	5.3
2016	0.40	1.32	7.14	0.25	8.4	27.4	148.5	5.2
2017	0.40	1.32	7.04	0.25	8.3	27.4	146.5	5.1
2018	0.39	1.32	6.94	0.24	8.2	27.4	144.4	5.1
2019	0.39	1.32	6.84	0.24	8.1	27.4	142.4	5.0
2020	0.38	1.32	6.75	0.24	7.9	27.4	140.3	4.9
2021	0.38	1.32	6.65	0.23	7.8	27.4	138.3	4.8
2022	0.37	1.32	6.56	0.23	7.7	27.4	136.4	4.7
2023	0.37	1.32	6.46	0.22	7.6	27.4	134.4	4.7
2024	0.36	1.32	6.37	0.22	7.5	27.4	132.5	4.6
2025	0.36	1.32	6.29	0.22	7.4	27.4	130.7	4.5
2026	0.35	1.32	6.20	0.21	7.3	27.4	129.0	4.4
2027	0.35	1.32	6.12	0.21	7.2	27.4	127.2	4.4
2028	0.34	1.32	6.04	0.21	7.1	27.4	125.6	4.3
2029	0.34	1.32	5.96	0.20	7.0	27.4	124.0	4.2
2030	0.33	1.32	5.88	0.20	6.9	27.4	122.3	4.2
2031	0.33	1.32	5.80	0.20	6.8	27.4	120.7	4.1
2032	0.32	1.32	5.73	0.19	6.7	27.4	119.2	4.0
2033	0.32	1.32	5.66	0.19	6.6	27.4	117.6	4.0
2034	0.31	1.32	5.58	0.19	6.5	27.4	116.1	3.9
2035	0.31	1.32	5.54	0.19	6.4	27.4	115.3	3.9
2036	0.31	1.32	5.52	0.19	6.4	27.4	114.9	3.9
2037	0.31	1.32	5.49	0.18	6.3	27.4	114.3	3.8
2038	0.30	1.32	5.47	0.18	6.3	27.4	113.7	3.8
2039	0.30	1.32	5.44	0.18	6.2	27.4	113.2	3.7
2040	0.30	1.32	5.41	0.18	6.2	27.4	112.6	3.7

Appendix B-1
Summary of Construction Related Emissions

Table B.1
Summary of Construction Related Emissions (Tons/Day)
HAR Units 2 and 3

Daily Emissions for Winter 2011 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.42	0.084	1.12
Onsite Rail Idling	0.0167	0.0061	0.087
Onsite Trucks [1] [2]	0.00076	0.00014	0.0013
Total, Construction Emissions, tons/day	0.44	0.090	1.21

Daily Emissions for Summer 2011 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.42	0.084	1.12
Onsite Rail Idling	0.0167	0.0061	0.087
Onsite Trucks [1] [2]	0.00071	0.00014	0.0012
Total, Construction Emissions, tons/day	0.44	0.090	1.21

Daily Emissions for Winter 2012 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.38	0.079	1.03
Onsite Rail Idling	0.0167	0.0061	0.087
Onsite Trucks [1] [2]	0.00066	0.00013	0.0011
Total, Construction Emissions, tons/day	0.39	0.085	1.12

Daily Emissions for Summer 2012 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.38	0.079	1.03
Onsite Rail Idling	0.0167	0.0061	0.087
Onsite Trucks [1] [2]	0.00062	0.00013	0.0011
Total, Construction Emissions, tons/day	0.39	0.085	1.12

Daily Emissions for Winter 2013 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.69	0.15	1.91
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks [1] [2]	0.0032	0.00084	0.0066
Total, Construction Emissions, tons/day	0.71	0.16	2.01

Table B.1
Summary of Construction Related Emissions (Tons/Day)
HAR Units 2 and 3

Daily Emissions for Summer 2013 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.69	0.15	1.91
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.0030	0.00082	0.0061
Total, Construction Emissions, tons/day	0.71	0.16	2.01

Daily Emissions for Winter 2014 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.64	0.14	1.74
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.0028	0.00080	0.0056
Total, Construction Emissions, tons/day	0.66	0.15	1.84

Daily Emissions for Summer 2014 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.64	0.14	1.74
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.0027	0.00079	0.0052
Total, Construction Emissions, tons/day	0.66	0.15	1.84

Daily Emissions for Winter 2015 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.57	0.13	1.54
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.0025	0.00076	0.0049
Total, Construction Emissions, tons/day	0.59	0.14	1.63

Daily Emissions for Summer 2015 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.57	0.13	1.54
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.0023	0.00075	0.0045
Total, Construction Emissions, tons/day	0.59	0.14	1.6

Table B.1
Summary of Construction Related Emissions (Tons/Day)
HAR Units 2 and 3

Daily Emissions for Winter 2016 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.33	0.074	0.88
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.0016	0.00053	0.0030
Total, Construction Emissions, tons/day	0.34	0.081	0.97

Daily Emissions for Summer 2016 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.33	0.074	0.88
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.0015	0.00052	0.0029
Total, Construction Emissions, tons/day	0.34	0.081	0.97

Daily Emissions for Winter 2017 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.11	0.029	0.33
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.00031	0.00011	0.00055
Total, Construction Emissions, tons/day	0.13	0.035	0.42

Daily Emissions for Summer 2017 (tons/day)

Activities	CO	VOC	NO_X
Construction Equipment	0.11	0.029	0.33
Onsite Rail Idling	0.017	0.0061	0.087
Onsite Trucks (1) (2)	0.00030	0.00011	0.00052
Total, Construction Emissions, tons/day	0.13	0.035	0.42

Notes:
(1) Delivery and concrete mix trucks.
(2) Includes emissions from delivery trucks during normal operation and idling.

Appendix B-2
Calculation of Construction Emissions from On- and Off-road Diesel Engines (2011–2017)

1.0 Calculation of Emissions from Off Road Diesel Engines and Vehicles for 2011

1.1 Activity Factor

An Activity Factor is used to account for the percentage of equipment operating during calendar year

2011 Activity Factor: 50 percent

1.2 Calculation of Criteria Pollutant Emission Rates for Construction Equipment

Type of Unit	Rated HP (hp)	# of Units	Total Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
300 Ton Link Belt Crawler	430	38	6	98,040	0.59	1.59	0.22	3.89	0.96	0.38	101	13.8	248	61.3	24.5
- Crawler Pumps	262	152	6	238,944	0.59	1.10	0.25	3.23	0.95	0.41	171	38.7	502	148	64.3
D-Class (85 ton pickers)		6					0.32				0	0	0	0	0
E-Class (150 ton truck Crane)		5					0.98				0	0	0	0	0
F-Class (200 ton Link Belt Crawlers)		15									0	0	0	0	0
G-Class (300 ton Link belt Crawlers)		8									0	0	0	0	0
H-Class (Lmason)		2									0	0	0	0	0
M-Class (300 ton Crawler)		2									0	0	0	0	0
Large Equipment > 750 hp	750	81	6	364,500	0.59	1.77	0.34	5.34	0.96	0.42	419	80.6	1265	228	100
Cat 345C Excavator		4									0	0.0	0	0	0
Cat 740 Articulating Trucks		32									0	0.0	0	0	0
Cat 637 Scraper		6									0	0.0	0	0	0
Cat 631 Water Wagon		2									0	0.0	0	0	0
Cat 100 in Roller		4									0	0.0	0	0	0
Cat D-9 Dozer		1									0	0.0	0	0	0
Cat D-8 Dozer		3									0	0.0	0	0	0
Cat D-6 Dozer		1									0	0.0	0	0	0
Cat 16 Grader		2									0	0.0	0	0	0
4M Water Truck		2									0	0.0	0	0	0
Diesel Light Plants		16									0	0.0	0	0	0
Cat 623 Scrapper		1									0	0.0	0	0	0
Cat 320/EX300 Excavator		1									0	0.0	0	0	0
Cat 450 Backhoe		4									0	0.0	0	0	0
Cat 416E Backhoe		2									0	0.0	0	0	0
Small Equipment	175	155	6	162,750	0.21	3.85	0.93	6.09	1.15	0.77	145	35.0	230	43.2	29.1
M&F 4x4		4									0	0.0	0	0.0	0.0
6 in portable Dewatering Pumps		12									0	0.0	0	0.0	0.0
6 in Deep Well Pumps		100									0	0.0	0	0.0	0.0
Portable air compressors 750		2									0	0.0	0	0.0	0.0
Portable Generator 50 kw		1									0	0.0	0	0.0	0.0
Portable Generator 10 kw		1									0	0.0	0	0.0	0.0
Support Vehicles		15									0	0.0	0	0.0	0.0
Boom DSL 4WD 80'		1									0	0.0	0	0.0	0.0
Boom DSL 4WD 60'		1									0	0.0	0	0.0	0.0
Welding Machine 400 amp Diesel		1									0	0.0	0	0.0	0.0
Wood Chipper		1									0	0.0	0	0.0	0.0
Rubber Tire Bobcat		1									0	0.0	0	0.0	0.0
Cat 580 Rubber Tire Backhoe		1									0	0.0	0	0.0	0.0

Cat 980 Frontend Loader		1									0	0.0	0	0.0	0.0
Cat 330 Excavator		1									0	0.0	0	0.0	0.0
Cat D-6		1									0	0.0	0	0.0	0.0
Cat D-4		1									0	0.0	0	0.0	0.0
Cat 12ft 140 hp Motor Grader		1									0	0.0	0	0.0	0.0
Cat 825 Vibratory Compactor		1									0	0.0	0	0.0	0.0
Meyers Trash Pumps 2 in		4									0	0.0	0	0.0	0.0
Meyers Trash Pumps 4 in		2									0	0.0	0	0.0	0.0
Motar Mixers 8 cu ft & 12 cu ft		2									0	0.0	0	0.0	0.0
TOTAL EMISSIONS											**836**	**168**	**2,244**	**480**	**218**

(1) Total daily usage for each unit is provided in the table
(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.
(3) U.S. EPA's NONROAD2008 model was used to calculate emission factors. U.S EPA, April 2009. NONROAD2008. Available from EPA's web site -http://epa.gov/otaq/nonrdmdl.htm.
(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x Activity Factor = Actual Emission (lb/day)

1.3 Calculation of Criteria Pollutant Emission Rates for Onsite Rail Idling

Type of Unit	Rated HP (hp)	# of Units	Typical Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Rail Delivery	5000	1	4	20,000	0.59	1.28	0.47	6.70	-	0.32	33.3	12.2	174	0.00	8.33
TOTAL EMISSIONS											**33.3**	**12.2**	**174**	**0.00**	**8.33**

(1) Total annual usage for each unit is provided in the table
(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.
(3) Emission Factors for Locomotives. EPA420-F-97-051. U.S. EPA December 1997
(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x 100% of Typical Day = Actual Emission (lb/day)

1.4 Calculation of Criteria Pollutant Emission for Onsite Concrete and Delivery Trucks

1.4.1 Calculation of Mileage for Onsite Concrete and Delivery Trucks

Vehicle Type[1]	Trucks/day	Miles/Truck/ Day [2]	Total Miles/ Day
Delivery Trucks - HDDV	25	5.0	125
Mix Trucks - HDDV [3]			0
TOTAL (Trucks)			125

(1) HDDV - Heavy-Duty Diesel Vehicles with a GVWR exceeding 8500 pounds
(2) Delivery Trucks (miles/day) - 25 trucks/day x 5 miles/truck/day = 125 miles

1.4.2 Calculation of Criteria Pollutant Emission Rates during Winter

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	4.06	0.81	7.55	0.013	0.19	1.12E+00	2.24E-01	2.08E+00	3.64E-03	5.31E-02
Mix Trucks - HDDV	Default	0	0	4.06	0.81	7.55	0.013	0.19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL EMISSIONS									**1.12**	**0.22**	**2.1**	**0.004**	**0.05**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.3 Calculation of Criteria Pollutant Emission Rates during Winter (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	18.0	2.95	25.1	0.033	0.48	3.98E-01	6.49E-02	5.53E-01	7.28E-04	1.06E-02
TOTAL EMISSIONS									**3.98E-01**	**6.49E-02**	**5.53E-01**	**7.28E-04**	**1.06E-02**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.4 Calculation of Criteria Pollutant Emission Rates during Summer

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	3.81	0.79	7.02	0.013	0.18	1.05E+00	2.18E-01	1.93E+00	3.64E-03	5.03E-02
Mix Trucks - HDDV	Default	0	0	3.81	0.79	7.02	0.013	0.18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL EMISSIONS									**1.05**	**0.22**	**1.9**	**0.004**	**0.05**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.5 Calculation of Criteria Pollutant Emission Rates during Summer (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	16.90	2.87	23.3	0.033	0.46	3.73E-01	6.33E-02	5.14E-01	7.28E-04	1.01E-02
TOTAL EMISSIONS									**3.73E-01**	**6.33E-02**	**5.14E-01**	**7.28E-04**	**1.01E-02**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.0 Calculation of Emissions from Off Road Diesel Engines and Vehicles for 2012

1.1 Activity Factor

An Activity Factor is used to account for the percentage of equipment operating during calendar year

2012 Activity Factor: 50 percent

1.2 Calculation of Criteria Pollutant Emission Rates for Construction Equipment

Type of Unit	Rated HP (hp)	# of Units	Total Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
300 Ton Link Belt Crawler	430	38	6	98,040	0.59	1.42	0.20	3.56	0.94	0.45	90.6	13.0	227	59.8	28.5
- Crawler Pumps	262	152	6	238,944	0.59	0.97	0.23	2.90	0.92	0.50	151	35.4	451	143	78.3
Large Equipment > 750 hp	750	81	6	364,500	0.59	1.60	0.32	4.96	0.94	0.48	380	75.9	1176	222	113
Small Equipment	175	155	6	162,750	0.21	3.52	0.90	5.70	1.13	0.80	133	34.0	215	42.5	30.1
TOTAL EMISSIONS											**754**	**158**	**2,068**	**467**	**250**

(1) Total daily usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) U.S. EPA's NONROAD2008 model was used to calculate emission factors. U.S EPA, April 2009. NONROAD2008. Available from EPA's web site -http://epa.gov/otaq/nonrdmdl.htm.

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x Activity Factor = Actual Emission (lb/day)

1.3 Calculation of Criteria Pollutant Emission Rates for Onsite Rail Idling

Type of Unit	Rated HP (hp)	# of Units	Typical Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Rail Delivery	5000	1	4	20,000	0.59	1.28	0.47	6.70	-	0.32	33.3	12.2	174	0.00	8.33
TOTAL EMISSIONS											**33.3**	**12.23**	**174**	**0.00**	**8.33**

(1) Total annual usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) Emission Factors for Locomotives. EPA420-F-97-051. U.S. EPA December 1997

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x 100% of Typical Day = Actual Emission (lb/day)

1.4 Calculation of Criteria Pollutant Emission for Onsite Concrete and Delivery Trucks

1.4.1 Calculation of Mileage for Onsite Concrete and Delivery Trucks

Vehicle Type[1]	Trucks/day	Miles/Truck/ Day [2]	Total Miles/ Day
Delivery Trucks - HDDV	25	5.0	125
Mix Trucks - HDDV [3]			0
TOTAL (Trucks)			125

(1) HDDV - Heavy-Duty Diesel Vehicles with a GVWR exceeding 8500 pounds

(2) Delivery Trucks (miles/day) - 25 trucks/day x 5 miles/truck/day = 125 miles

1.4.2 Calculation of Criteria Pollutant Emission Rates during Winter

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	3.54	0.75	6.50	0.013	0.17	9.76E-01	2.07E-01	1.79E+00	3.64E-03	4.64E-02
Mix Trucks - HDDV	Default	0	0	3.54	0.75	6.50	0.013	0.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL EMISSIONS									**0.98**	**0.21**	**1.8**	**0.004**	**0.05**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1

(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.

(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.

(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.3 Calculation of Criteria Pollutant Emission Rates during Winter (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	15.7	2.73	21.6	0.033	0.42	3.47E-01	6.01E-02	4.76E-01	7.28E-04	9.29E-03
TOTAL EMISSIONS									**3.47E-01**	**6.01E-02**	**4.76E-01**	**7.28E-04**	**9.29E-03**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.

(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.

(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.

(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.4 Calculation of Criteria Pollutant Emission Rates during Summer

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	3.32	0.74	6.06	0.013	0.16	9.15E-01	2.03E-01	1.67E+00	3.64E-03	4.42E-02
Mix Trucks - HDDV	Default	0	0	3.32	0.74	6.06	0.013	0.16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL EMISSIONS									**0.92**	**0.20**	**1.67**	**0.0036**	**0.044**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.5 Calculation of Criteria Pollutant Emission Rates during Summer (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	14.75	2.67	20.1	0.03	0.40	3.25E-01	5.88E-02	4.44E-01	7.28E-04	8.84E-03
TOTAL EMISSIONS									**3.25E-01**	**5.88E-02**	**4.44E-01**	**7.28E-04**	**8.84E-03**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.0 Calculation of Emissions from Off Road Diesel Engines and Vehicles for 2013

1.1 Activity Factor

An Activity Factor is used to account for the percentage of equipment operating during calendar year

2013 Activity Factor: 100 percent

1.2 Calculation of Criteria Pollutant Emission Rates for Construction Equipment

Type of Unit	Rated HP (hp)	# of Units	Total Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
300 Ton Link Belt Crawler	430	38	6	98,040	0.59	1.26	0.19	3.25	0.92	0.51	161	24.6	414	117	64.8
- Crawler Pumps	262	152	6	238,944	0.59	0.86	0.21	2.60	0.89	0.59	266	65.0	809	276	183
Large Equipment > 750 hp	750	81	6	364,500	0.59	1.52	0.31	4.64	0.91	0.54	722	147	2202	433	256
Small Equipment	175	155	6	162,750	0.21	3.20	0.83	5.32	1.11	0.82	241	62.6	401	83.7	61.9
TOTAL EMISSIONS											**1,390**	**299**	**3,826**	**909**	**566**

(1) Total daily usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) U.S. EPA's NONROAD2008 model was used to calculate emission factors. U.S EPA, April 2009. NONROAD2008. Available from EPA's web site -http://epa.gov/otaq/nonrdmdl.htm.

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x Activity Factor = Actual Emission (lb/day)

1.3 Calculation of Criteria Pollutant Emission Rates for Onsite Rail Idling

Type of Unit	Rated HP (hp)	# of Units	Typical Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Rail Delivery	5000	1	4	20,000	0.59	1.28	0.47	6.70	-	0.32	33.3	12.2	174	0.00	8.33
TOTAL EMISSIONS											**33.3**	**12.2**	**174**	**0.00**	**8.33**

(1) Total annual usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) Emission Factors for Locomotives. EPA420-F-97-051. U.S. EPA December 1997

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x 100% of Typical Day = Actual Emission (lb/day)

1.4 Calculation of Criteria Pollutant Emission for Onsite Concrete and Delivery Trucks

1.4.1 Calculation of Mileage for Onsite Concrete and Delivery Trucks

Vehicle Type[1]	Trucks/day	Miles/Truck/ Day [2]	Total Miles/ Day
Delivery Trucks - HDDV	25	5.0	125
Mix Trucks - HDDV [3]	30	30.0	900
TOTAL (Trucks)			1,025

(1) HDDV - Heavy-Duty Diesel Vehicles with a GVWR exceeding 8500 pounds
(2) Delivery Trucks (miles/day) - 25 trucks/day x 5 miles/truck/day = 125 miles
Mix Trucks (miles/day) - 30 trucks/day x 10 trips/truck x 3 miles/trip = 900 miles

1.4.2 Calculation of Criteria Pollutant Emission Rates during Winter

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_x	SO_x	PM	CO	VOC	NO_x	SO_x	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	2.71	0.72	5.62	0.013	0.15	7.46E-01	1.98E-01	1.55E+00	3.64E-03	4.18E-02
Mix Trucks - HDDV	Default	30	900	2.71	0.72	5.62	0.013	0.15	5.37E+00	1.43E+00	1.12E+01	2.62E-02	3.01E-01
TOTAL EMISSIONS									**6.12**	**1.63**	**12.7**	**0.030**	**0.34**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.3 Calculation of Criteria Pollutant Emission Rates during Winter (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_x	SO_x	PM	CO	VOC	NO_x	SO_x	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	12.0	2.61	18.7	0.033	0.38	2.65E-01	5.74E-02	4.12E-01	7.28E-04	8.36E-03
TOTAL EMISSIONS									**2.65E-01**	**5.74E-02**	**4.12E-01**	**7.28E-04**	**8.36E-03**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.4 Calculation of Criteria Pollutant Emission Rates during Summer

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	2.55	0.70	5.24	0.013	0.14	7.02E-01	1.94E-01	1.44E+00	3.64E-03	3.99E-02
Mix Trucks - HDDV	Default	30	900	2.55	0.70	5.24	0.013	0.14	5.06E+00	1.40E+00	1.04E+01	2.62E-02	2.87E-01
TOTAL EMISSIONS									**5.76**	**1.59**	**11.8**	**0.030**	**0.33**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.5 Calculation of Criteria Pollutant Emission Rates during Summer (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	11.32	2.55	17.4	0.033	0.36	2.50E-01	5.63E-02	3.84E-01	7.28E-04	7.98E-03
TOTAL EMISSIONS									**2.50E-01**	**5.63E-02**	**3.84E-01**	**7.28E-04**	**7.98E-03**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.0 Calculation of Emissions from Off Road Diesel Engines and Vehicles for 2014

1.1 Activity Factor

An Activity Factor is used to account for the percentage of equipment operating during calendar year

2014 Activity Factor: 100 percent

1.2 Calculation of Criteria Pollutant Emission Rates for Construction Equipment

Type of Unit	Rated HP (hp)	# of Units	Total Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
300 Ton Link Belt Crawler	430	38	6	98,040	0.59	1.13	0.18	2.89	0.89	0.57	144	23.0	368	114	72.3
- Crawler Pumps	262	152	6	238,944	0.59	0.74	0.19	2.20	0.86	0.67	231	59.7	685	267	209
Large Equipment > 750 hp	750	81	6	364,500	0.59	1.46	0.30	4.35	0.89	0.60	694	143	2064	423	285
Small Equipment	175	155	6	162,750	0.21	2.89	0.76	4.89	1.09	0.85	218	57.5	368	82.1	63.7
TOTAL EMISSIONS											**1,286**	**283**	**3,486**	**886**	**630**

(1) Total daily usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) U.S. EPA's NONROAD2008 model was used to calculate emission factors. U.S EPA, April 2009. NONROAD2008. Available from EPA's web site -http://epa.gov/otaq/nonrdmdl.htm.

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x Activity Factor = Actual Emission (lb/day)

1.3 Calculation of Criteria Pollutant Emission Rates for Onsite Rail Idling

Type of Unit	Rated HP (hp)	# of Units	Typical Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Rail Delivery	5000	1	4	20,000	0.59	1.28	0.47	6.70	-	0.32	33.3	12.2	174	0.00	8.33
TOTAL EMISSIONS											**33.3**	**12.2**	**174**	**0.00**	**8.33**

(1) Total annual usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) Emission Factors for Locomotives. EPA420-F-97-051. U.S. EPA December 1997

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x 100% of Typical Day = Actual Emission (lb/day)

1.4 Calculation of Criteria Pollutant Emission for Onsite Concrete and Delivery Trucks

1.4.1 Calculation of Mileage for Onsite Concrete and Delivery Trucks

Vehicle Type[1]	Trucks/day	Miles/Truck/ Day [2]	Total Miles/ Day
Delivery Trucks - HDDV	25	5.0	125
Mix Trucks - HDDV [3]	30	30.0	900
TOTAL (Trucks)			1,025

(1) HDDV - Heavy-Duty Diesel Vehicles with a GVWR exceeding 8500 pounds
(2) Delivery Trucks (miles/day) - 25 trucks/day x 5 miles/truck/day = 125 miles
Mix Trucks (miles/day) - 30 trucks/day x 10 trips/truck x 3 miles/trip = 900 miles

1.4.2 Calculation of Criteria Pollutant Emission Rates during Winter

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	2.40	0.69	4.79	0.013	0.13	6.61E-01	1.89E-01	1.32E+00	3.64E-03	3.59E-02
Mix Trucks - HDDV	Default	30	900	2.40	0.69	4.79	0.013	0.13	4.76E+00	1.36E+00	9.51E+00	2.62E-02	2.59E-01
TOTAL EMISSIONS									**5.42**	**1.55**	**10.8**	**0.030**	**0.29**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.3 Calculation of Criteria Pollutant Emission Rates during Winter (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	10.6	2.48	15.9	0.033	0.33	2.35E-01	5.47E-02	3.51E-01	7.28E-04	7.18E-03
TOTAL EMISSIONS									**2.35E-01**	**5.47E-02**	**3.51E-01**	**7.28E-04**	**7.18E-03**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.4 Calculation of Criteria Pollutant Emission Rates during Summer

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	2.26	0.67	4.47	0.013	0.13	6.23E-01	1.85E-01	1.23E+00	3.64E-03	3.45E-02
Mix Trucks - HDDV	Default	30	900	2.26	0.67	4.47	0.013	0.13	4.49E+00	1.34E+00	8.87E+00	2.62E-02	2.48E-01
TOTAL EMISSIONS									**5.11**	**1.52**	**10.1**	**0.030**	**0.28**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.5 Calculation of Criteria Pollutant Emission Rates during Summer (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	10.04	2.44	14.8	0.033	0.31	2.21E-01	5.37E-02	3.27E-01	7.28E-04	6.90E-03
TOTAL EMISSIONS									**2.21E-01**	**5.37E-02**	**3.27E-01**	**7.28E-04**	**6.90E-03**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.0 Calculation of Emissions from Off Road Diesel Engines and Vehicles for 2015

1.1 Activity Factor

An Activity Factor is used to account for the percentage of equipment operating during calendar year

2015 Activity Factor: 100 percent

1.2 Calculation of Criteria Pollutant Emission Rates for Construction Equipment

Type of Unit	Rated HP (hp)	# of Units	Total Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
300 Ton Link Belt Crawler	430	38	6	98,040	0.59	1.00	0.18	2.55	0.87	0.63	128	22.6	326	111	79.7
- Crawler Pumps	262	152	6	238,944	0.59	0.63	0.18	1.57	0.80	0.82	196	56.0	488	249	255
Large Equipment > 750 hp	750	81	6	364,500	0.59	1.32	0.28	4.08	0.87	0.66	628	134	1934	413	311
Small Equipment	175	155	6	162,750	0.21	2.60	0.70	4.48	1.07	0.87	196	52.7	337	80.8	65.4
TOTAL EMISSIONS											**1,148**	**265**	**3,085**	**854**	**711**

(1) Total daily usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) U.S. EPA's NONROAD2008 model was used to calculate emission factors. U.S EPA, April 2009. NONROAD2008. Available from EPA's web site -http://epa.gov/otaq/nonrdmdl.htm.

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x Activity Factor = Actual Emission (lb/day)

1.3 Calculation of Criteria Pollutant Emission Rates for Onsite Rail Idling

Type of Unit	Rated HP (hp)	# of Units	Typical Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Rail Delivery	5000	1	4	20,000	0.59	1.28	0.47	6.70	-	0.32	33.3	12.2	174	0.00	8.33
TOTAL EMISSIONS											**33.3**	**12.2**	**174**	**0.00**	**8.33**

(1) Total annual usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) Emission Factors for Locomotives. EPA420-F-97-051. U.S. EPA December 1997

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x 100% of Typical Day = Actual Emission (lb/day)

1.4 Calculation of Criteria Pollutant Emission for Onsite Concrete and Delivery Trucks

1.4.1 Calculation of Mileage for Onsite Concrete and Delivery Trucks

Vehicle Type[1]	Trucks/day	Miles/Truck/ Day [2]	Total Miles/ Day
Delivery Trucks - HDDV	25	5.0	125
Mix Trucks - HDDV [3]	30	30.0	900
TOTAL (Trucks)			1,025

(1) HDDV - Heavy-Duty Diesel Vehicles with a GVWR exceeding 8500 pounds
(2) Delivery Trucks (miles/day) - 25 trucks/day x 5 miles/truck/day = 125 miles
Mix Trucks (miles/day) - 30 trucks/day x 10 trips/truck x 3 miles/trip = 900 miles

1.4.2 Calculation of Criteria Pollutant Emission Rates during Winter

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	2.10	0.65	4.16	0.013	0.11	5.78E-01	1.79E-01	1.15E+00	3.64E-03	3.16E-02
Mix Trucks - HDDV	Default	30	900	2.10	0.65	4.16	0.013	0.11	4.16E+00	1.29E+00	8.25E+00	2.62E-02	2.28E-01
TOTAL EMISSIONS									**4.74**	**1.47**	**9.4**	**0.030**	**0.26**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.3 Calculation of Criteria Pollutant Emission Rates during Winter (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	9.31	2.36	13.8	0.033	0.29	2.05E-01	5.19E-02	3.04E-01	7.28E-04	6.32E-03
TOTAL EMISSIONS									**0.21**	**0.052**	**0.30**	**0.00073**	**0.0063**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.4 Calculation of Criteria Pollutant Emission Rates during Summer

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	1.98	0.64	3.89	0.013	0.11	5.46E-01	1.76E-01	1.07E+00	3.64E-03	3.05E-02
Mix Trucks - HDDV	Default	30	900	1.98	0.64	3.89	0.013	0.11	3.93E+00	1.27E+00	7.71E+00	2.62E-02	2.20E-01
TOTAL EMISSIONS									**4.48**	**1.45**	**8.79**	**0.030**	**0.25**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.5 Calculation of Criteria Pollutant Emission Rates during Summer (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	8.80	2.32	12.9	0.033	0.28	1.94E-01	5.11E-02	2.84E-01	7.28E-04	6.10E-03
TOTAL EMISSIONS									**1.94E-01**	**5.11E-02**	**2.84E-01**	**7.28E-04**	**6.10E-03**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.0 Calculation of Emissions from Off Road Diesel Engines and Vehicles for 2016

1.1 Activity Factor

An Activity Factor is used to account for the percentage of equipment operating during calendar year

2016 Activity Factor: 60 percent

1.2 Calculation of Criteria Pollutant Emission Rates for Construction Equipment

Type of Unit	Rated HP (hp)	# of Units	Total Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
300 Ton Link Belt Crawler	430	38	6	98,040	0.59	0.89	0.17	2.24	0.85	0.68	68.1	13.0	172	65.2	52.0
- Crawler Pumps	262	152	6	238,944	0.59	0.74	0.17	1.72	0.83	0.80	138	31.7	321	155	150
Large Equipment > 750 hp	750	81	6	364,500	0.59	1.20	0.26	3.82	0.85	0.71	341	75.1	1087	242	202
Small Equipment	175	155	6	162,750	0.21	2.33	0.64	4.08	1.05	0.89	105	28.8	185	47.7	40.2
TOTAL EMISSIONS											**652**	**149**	**1,764**	**510**	**444**

(1) Total daily usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) U.S. EPA's NONROAD2008 model was used to calculate emission factors. U.S EPA, April 2009. NONROAD2008. Available from EPA's web site -http://epa.gov/otaq/nonrdmdl.htm.

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x Activity Factor = Actual Emission (lb/day)

1.3 Calculation of Criteria Pollutant Emission Rates for Onsite Rail Idling

Type of Unit	Rated HP (hp)	# of Units	Typical Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Rail Delivery	5000	1	4	20,000	0.59	1.28	0.47	6.70	-	0.32	33.3	12.2	174	0.00	8.33
TOTAL EMISSIONS											**33.3**	**12.2**	**174.3**	**0.00**	**8.33**

(1) Total annual usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) Emission Factors for Locomotives. EPA420-F-97-051. U.S. EPA December 1997

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x 100% of Typical Day = Actual Emission (lb/day)

1.4 Calculation of Criteria Pollutant Emission for Onsite Concrete and Delivery Trucks

1.4.1 Calculation of Mileage for Onsite Concrete and Delivery Trucks

Vehicle Type[1]	Trucks/day	Miles/Truck/ Day [2]	Total Miles/ Day
Delivery Trucks - HDDV	25	5.0	125
Mix Trucks - HDDV [3]	20	30.0	600
TOTAL (Trucks)			725

(1) HDDV - Heavy-Duty Diesel Vehicles with a GVWR exceeding 8500 pounds
(2) Delivery Trucks (miles/day) - 25 trucks/day x 5 miles/truck/day = 125 miles
Mix Trucks (miles/day) - 20 trucks/day x 10 trips/truck x 3 miles/trip = 600 miles

1.4.2 Calculation of Criteria Pollutant Emission Rates during Winter

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2][3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	1.86	0.63	3.64	0.013	0.11	5.14E-01	1.74E-01	1.00E+00	3.64E-03	2.93E-02
Mix Trucks - HDDV	Default	20	600	1.86	0.63	3.64	0.013	0.11	2.47E+00	8.33E-01	4.82E+00	1.75E-02	1.41E-01
TOTAL EMISSIONS									**2.98**	**1.01**	**5.82**	**0.021**	**0.17**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.3 Calculation of Criteria Pollutant Emission Rates during Winter (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2][3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	8.28	2.28	12.1	0.033	0.27	1.83E-01	5.03E-02	2.66E-01	7.28E-04	5.87E-03
TOTAL EMISSIONS									**0.18**	**0.050**	**0.27**	**0.00073**	**0.0059**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.4 Calculation of Criteria Pollutant Emission Rates during Summer

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	1.77	0.62	3.41	0.013	0.10	4.87E-01	1.71E-01	9.40E-01	3.64E-03	2.84E-02
Mix Trucks - HDDV	Default	20	600	1.77	0.62	3.41	0.013	0.10	2.34E+00	8.22E-01	4.51E+00	1.75E-02	1.36E-01
TOTAL EMISSIONS									**2.82**	**0.99**	**5.45**	**0.021**	**0.16**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.5 Calculation of Criteria Pollutant Emission Rates during Summer (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	7.84	2.25	11.3	0.033	0.26	1.73E-01	4.96E-02	2.49E-01	7.28E-04	5.68E-03
TOTAL EMISSIONS									**1.73E-01**	**4.96E-02**	**2.49E-01**	**7.28E-04**	**5.68E-03**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.0 Calculation of Emissions from Off Road Diesel Engines and Vehicles for 2017

1.1 Activity Factor

An Activity Factor is used to account for the percentage of equipment operating during calendar year

2017 Activity Factor: 25 percent

1.2 Calculation of Criteria Pollutant Emission Rates for Construction Equipment

Type of Unit	Rated HP (hp)	# of Units	Total Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
300 Ton Link Belt Crawler	430	38	6	98,040	0.59	0.78	0.16	2.0	0.83	0.73	25.0	5.2	62.3	26.6	23.4
- Crawler Pumps	262	152	6	238,944	0.59	0.42	0.16	1.3	0.78	0.88	32.6	12.5	100	60.5	68.6
Large Equipment > 750 hp	750	81	6	364,500	0.59	1.08	0.25	3.6	0.83	0.76	128	29.3	424	98.6	90.2
Small Equipment	175	155	6	162,750	0.21	2.13	0.59	3.7	1.04	0.91	40.2	11.1	70.5	19.6	17.2
TOTAL EMISSIONS											**226**	**58.1**	**657**	**205**	**199**

(1) Total daily usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) U.S. EPA's NONROAD2008 model was used to calculate emission factors. U.S EPA, April 2009. NONROAD2008. Available from EPA's web site -http://epa.gov/otaq/nonrdmdl.htm.

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x Activity Factor = Actual Emission (lb/day)

1.3 Calculation of Criteria Pollutant Emission Rates for Onsite Rail Idling

Type of Unit	Rated HP (hp)	# of Units	Typical Daily Usage (hr/day)	Total Usage (hp-hr/day)	Load Factor [2]	Emission Factor (gm/hp-hr) [3]					Actual Emissions (lb/day) [4]				
						CO	VOC	NOx	SO_2	PM	CO	VOC	NOx	SO_2	PM
Rail Delivery	5000	1	4	20,000	0.59	1.28	0.47	6.70	-	0.32	33.3	12.2	174	0.00	8.33
TOTAL EMISSIONS											**33.3**	**12.2**	**174**	**0.00**	**8.33**

(1) Total annual usage for each unit is provided in the table

(2) Load factors from Appendix A of "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling", EPA, 2004.

(3) Emission Factors for Locomotives. EPA420-F-97-051. U.S. EPA December 1997

(4) Rated HP (hp) x Number of Units x Daily Usage (hr/day) = Total Usage (hp-hr/day). Total Usage (hp-hr/day) x Emission Factor (gm-hp/hr) x Load Factor x 0.002205 (lb/gm) x 100% of Typical Day = Actual Emission (lb/day)

1.4 Calculation of Criteria Pollutant Emission for Onsite Concrete and Delivery Trucks

1.4.1 Calculation of Mileage for Onsite Concrete and Delivery Trucks

Vehicle Type[1]	Trucks/day	Miles/Truck/ Day [2]	Total Miles/ Day
Delivery Trucks - HDDV	25	5.0	125
Mix Trucks - HDDV [3]	0	0.0	0
TOTAL (Trucks)			125

(1) HDDV - Heavy-Duty Diesel Vehicles with a GVWR exceeding 8500 pounds
(2) Delivery Trucks (miles/day) - 25 trucks/day x 5 miles/truck/day = 125 miles

1.4.2 Calculation of Criteria Pollutant Emission Rates during Winter

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_x	SO_x	PM	CO	VOC	NO_x	SO_x	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	25	125	1.66	0.61	3.16	0.013	0.097	4.59E-01	1.69E-01	8.72E-01	3.64E-03	2.68E-02
Mix Trucks - HDDV	Default	0	0	1.66	0.61	3.16	0.013	0.097	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL EMISSIONS									**0.46**	**0.17**	**0.87**	**0.0036**	**0.027**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.3 Calculation of Criteria Pollutant Emission Rates during Winter (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_x	SO_x	PM	CO	VOC	NO_x	SO_x	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	7.39	2.22	10.5	0.033	0.24	1.63E-01	4.89E-02	2.31E-01	7.28E-04	5.37E-03
TOTAL EMISSIONS									**0.16**	**0.049**	**0.23**	**0.00073**	**0.0054**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.4 Calculation of Criteria Pollutant Emission Rates during Summer

Vehicle Type	Vehicle Model Year	Number of Vehicles	Daily Mileage [1]	Vehicle Emission Factors (gm/mile) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	125	1.58	0.61	2.97	0.013	0.097	4.36E-01	1.67E-01	8.19E-01	3.64E-03	2.68E-02
Mix Trucks - HDDV	Default	0	0	1.58	0.61	2.97	0.013	0.097	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL EMISSIONS									**0.44**	**0.17**	**0.82**	**0.0036**	**0.027**

(1) Daily mileage is for all the vehicles in a vehicle category. Input the appropriate mileage estimated in Section 1.4.1
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Concrete and Delivery Trucks were estimated based on a speed of 10 mph.
(4) Emission Factor (gm/mile) x Daily Mileage x 0.002205 (lb/gm) = Actual Emissions (lb/day)

1.4.5 Calculation of Criteria Pollutant Emission Rates during Summer (Idling)

Vehicle Type	Vehicle Model Year	Number of Vehicles	Idling Time Hours [1]	Vehicle Emission Factors (gm/hr) [2] [3]					Actual Emissions (lb/day) [4]				
				CO	VOC	NO_X	SO_X	PM	CO	VOC	NO_X	SO_X	PM
Delivery Trucks													
Delivery Trucks - HDDV	Default	NA	10	7.02	2.19	9.9	0.03	0.24	1.55E-01	4.83E-02	2.17E-01	7.28E-04	5.37E-03
TOTAL EMISSIONS									**0.15**	**0.048**	**0.22**	**0.00073**	**0.0054**

(1) 40 percent of the daily delivery trucks will run their engines onsite for less than 1 hour. 60 percent of the daily delivery truck will not idle onsite.
(2) U.S. EPA's MOBILE 6.2 model was used to calculate vehicle emission factors.
(3) The vehicle emission factors for the Delivery Trucks were estimated based on a speed of 2.5 mph.
(4) Emission Factor (gm/hr) x Idling Time (hr) x 0.002205 (lb/gm) = Actual Emissions (lb/day)

Appendix C-1
Progress Energy's Levy Nuclear Plant Construction Equipment Summary

Estimated Noise Generating Construction Equipment Spread Sheet

Add the following traffic/equipment:
Rail deliveries: 8/week
Truck deliveries: 25/day
Construction Worker Traffic: 3300 workers/day (peak year)

Peak Construction Period
Refer to Appendix C-2 for assumed years of construction (2011 - 2017) for HAR facilities.

Shaw® Stone & Webster, Inc.

Levy Site Equipment List

* Identified equipment will operate 85%/ 8.5hrs of all schedule 10hr. work shift days during peak construction Phase II,III,IV, V,

Equipment Discription 2-13-08	No. Units	dBA@ 50ft	Phase I 1/1/10-1/12/10	Phase II 1/1/11-1/12/11	Phase III 1/1/12-1/12/12	Phase IV 1/1/13-1/12/13	Phase V 1/1/2014-1/12/14	Phase VI 1/1/2015-1/12/15	Phase VII 1/1/2016-1/12/16	Power Block Req'd	Haul Road Req'd	River Intake Req'd
			Approx. 38 mo. N. I. Bas Earth Excva. & Prep Cycle Start to Finish									
Cat 345C Excavator	4	81	4	4	4	4				2	1	1
Cat 740 & Volvo Articulating Trucks	32	76	32	32	32	32				28	4	2
Cat 637 Scraper	6	84	6	6	6	6				4	1	1
Cat 631 Water Wagon	2	76	2	2	2	2				1	1/2	1/2
Cat 100 in Roller	4	80	4	4	4	4				2	1	1
Cat D-9 Dozer	1	82	1	1	1	1				1/2	1/2	
Cat D-8 Dozer	3	82	3	3	3	3				1	1	1
Cat D-6 Dozer	1	82	1	1	1	1				1/3	1/3	1/3
Cat 16 Grader	2	83	2	2	2	2				1	1	
M&F 4X4 Tractor for BeeGee & Disk	4	82	4	4	4	4				2	2	
Bee Gee	2	n/a	2	2	2	2				1	1	
42 inch Disk	2	n/a	2	2	2	2				1	1	
4M Water Truck	2	76	2	2	2	2				1	1/2	1/2
Diesel Light Plants	16	81	16	16	16	16				15		1
6 inch Portable Dewatering Pumps	12	81	12	12	12	12				6	6	
6 inch Deep Welll Pumps	100	81	100	100	100	100				94	1	5
Cat 623 Scraper	1	84	1	1	1					1		
Cat 320 / EX300 Excavator	1	81	1	1	1					1/3	1/3	1/3
Cat. 450E Backhoe	4	78	4	4	4	Approx. 42 mo.Duration from Nuclear Island 1st Concrete to Construction Completion				3	1/2	1/2
Cat. 416E Backhoe	2	78	2	2	2					1	1/2	1/2
Misc.SSWN Dist Maintance Equipment & Skids	-	-										
Portable Air Compressors 750	2	78	2	2	2	2	2	2		2		
Portable Generators 50kw	1	81	1	1	1	1	1	1		1		
Portable Generators 10kw	1	73	1	1	1	1	1	1	1	1		
Support Vehicles	15	75	15	15	15	15	15	15		11	2	2
D- Class (85 ton Picker)	1	81	1	1	1	1	1	1		1		
1 switchback locomotive	1	84	1	1	1	1	1	1	1	1/3	1/3	1/3
E-Class (150 ton Truck Crane)	1	84	1	1	1	1	1	1	1	1		
Boom DSL 4WD 60'	1	81	1	1	1	1	1	1	1	1		
Boom DSL 4WD 80'	1	81	1	1	1	1	1	1		1		
Construction Eletric Elevator	1	63	1	1	1	1	1	1		1		
Welding M achine 400 Amp Diesel	1	81	1	1	1	1	1	1	1	1		
Gas Powered Wood Chipper	1	90	1	1	1	1	1	1		1/2	1/2	
Rubber Tire Bobcat	1	78	1	1	1	1	1	1		1/3	1/3	1/3
Cat 580 Rubber Tire Backhoe	1	78	1	1	1	1	1	1	1	1/3	1/3	1/3
Cat 980 Frontend Loader	1	79	1	1	1	1	1	1	1	1/3	1/3	1/3
Cat 330 Excavator	1	81	1	1	1	1	1			1/2	1/2	
Cat D-6	1	82	1	1	1	1	1			1/3	1/3	1/3
Cat D-4	1	82	1	1	1	1	1	1		1/2	1/2	
Cat 12ft 140 hp Motor Grader	1	83	1	1	1	1	1	1	1	1/2	1/2	
Highway Rear Dump Truck 10-12CY	1	76	1	1	1	1	1	1	1	1/3	1/3	1/3
Cat 825 Vibratory Compactor	1	83	1	1	1	1	1	1		1/3	1/3	1/3
Meyers Water Gas Powered Trash Pumps 2inch	4	81	4	4	4	4	4	4	4	2	1	1
Meyers Water Gas Powered Trash Pumps 4inch	2	81	2	2	2	2	2	2	2	1		1
Gas Powered Motar Mixers 8cu. Ft. & 12cu ft	2	70	2	2	2	2	2	2	2	2		
Site Const. Area & Module Support Cranes	-	-										
D- Class (85 ton Pickers)	5	84	5	5	5	5	5	5	5	3	1	1
E-Class (150 ton Truck Crane)	4	84	4	4	4	4	4	4	4	3	1	
F-Class (200 ton Link Belt Crawlers	15	84	15	15	15	15	15	15		15		
G-Class (300 ton Link Belt Crawlers	8	84	8	8	8	8	8	8		8		
H-Class (Lamson)	2	84			2	2	2	2		2		
M-Class (300 ton Crawler with Maxier trailor	2	84			2	2	2			2		
Dewatering Contractor Equipmen (Details TBD @ Raleigh	-	-										
Bauer BG50 Hydromill	2	86	2	2						2		
Marine Construction Contractor Equipment	-	-										1
Shore Pile Driving Rig	1	101		1	1							1
Dredge Boat Twin V 14 winch	1	87		1	1							1
40 ft. River Tug	1	87		1	1							1
Tender Boat	1	84		1	1							1
Soud Barges	3	81		3	3							3
On-Site Concrete Batch Plants & Mix trucks	-	-										
Vince Hagan Central Mix (HSM-CM-124000D150-4-600-600)	2	70	2	2	2	2	2	2		2		
Concrete 12yd,	30	79	30	30	30	30	30	30		20		

Delete for Harris Plant

Appendix C-2
Assumptions for HAR Units 2 and 3 Construction Emissions

JVT - REQUEST FOR INFORMATION

RFI # 368 CWO # ____ COLA: PEF WBS# ____

RFI TITLE: *(be concise)*	HAR Air Emissions During Construction - Clarification of Assumptions		
Date of Request:	June 1, 2009	***Date information is needed?***	June 3, 2009
To:	Arun Kapur/Progress Energy	***From:***	George Howroyd/CH2M HILL
(Name and Organization)		(Name and Organization)	

Item Requested (Please provide detailed description, title, dates, etc., if known):

Clarification is requested on the basic assumptions that will be used for the estimation of air emissions during the construction of HAR Units 2 and 3. Additional detail on the requested clarifications was provided in an e-mail dated May 20, 2009 from George Howroyd to Arun Kapur.

How would you like this information sent to you (e-mail, hard copy, CD, etc.)?

E-mail to George Howroyd/CH2M HILL (ghowroyd@ch2m.com) . Tel: 678-530-4170

Provide any additional information here:

It is my understanding that Progress Energy will meet with George Druitt/Shaw on June 1 to discuss and resolve the items of interest. Following the meeting, Progress Energy will prepare a summary of those discussions as they relate to the requested information and provide to George Howroyd by e-mail by Wednesday June 3.

PROGRESS ENERGY – RFI RESPONSE

Responding Person:	Arun Kapur	***Date of Response:***	June 3, 2009

Source of Information:

Collaborative effort between PE, Shaw and CH2

Response (what was sent):

Word document summarizing the information.

Transmittal method (how it was sent:)

e-mail

FOR PGN FILE MANAGEMENT USE

Readily available QA document? *(yes or no)* ____ *Hard copy filed?* *(yes or no)* ____

Sent to PGN Server Path: ____

Progress Energy

Nuclear Plant Development

Subject: HAR RFI # 368 - HAR Air Emissions During Construction - Clarification of Assumptions

Date: June 2, 2009

Wake County, NC is a maintenance area or non-attainment for several air quality standards, a conformity determination needs to be performed for the Harris (HAR) 2&3 construction. Previously, PE had provided NRC emissions estimates for the construction equipment and vehicles but the North Carolina Division of Air Quality (NC-DAQ) had determined no conformity determination was necessary. Subsequent discussions between NRC and NC-DAQ have determined a conformity determination now needs to be performed using updated modeling software to compare with emissions estimated in the current State Implementation Plan (SIP).

The data and assumptions used for emissions estimation were based on a similar nuclear power generation construction project based in Levy, Florida completed by the same firm for the same plant design and were adjusted for anticipated and site-specific conditions at the HAR 2&3 location.

On June 1, 2009, the personnel listed below collaborated to determine construction equipment and operating assumptions that would be appropriate for HAR 2&3 construction using the Levy, Florida plant construction data as a basis.

George Drewett, Shaw
Jim Nevill, PE
Linda Hickok, PE
Joe Pavletich, PE Contractor
Arun Kapur, PE
George Howroyd, CH2

Table 1 (attached) summarizes the assumptions for construction equipment usage addressing data points like on-site travel distance, hours of equipment operation, equipment usage linked to level of construction human resource loading, etc. The following information should be also used for the emissions estimates and conformance determination:

- Use of the year & equipment breakdown provided by Shaw on RFI #324.
- The construction time period is 7 yrs which includes pre-construction activities. It was assumed that construction would start in 2011 and end in 2017.
- The construction equipment requirements and usage for the HAR cut-and-fill are considered comparable to Levy cut-and-fill.
- The construction equipment requirements and usage for the HAR cooling towers considered comparable to Levy cooling towers.

Arun Kapur
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Raleigh, NC 27602
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Table 1 - Assumptions for HAR 2 and 3 Air Quality Conformity Determination

Construction time period	7 yrs	Starting Year 2011 Site prep	2012 Site prep	2013 Construction	2014 Construction	2015 Construction	2016 Construction	Last (ending) Year 2017 Construction and Startup
Construction schedule	5 days/week, 10 hours per day							
Construction equipment operation	6 hrs/day avg.							
Equipment age	<2 years old at construction start							
Construction equipment use See table provided by Shaw in RFI #324.	First 2 years	50% of site equipment operating	50% of site equipment operating					
	from 2 to 4.5 years			100% of site equipment operating	100% of site equipment operating	100% of site equipment operating (1/2 year) 60% of site equipment operating (1/2 year)		
	From 4.5 to 7 years						60% of site equipment operating	25% of site equipment operating
Concrete trucks	Pour concrete in first 2-2.5			30 trucks, 10 trips per truck per	30 trucks, 10 trips per truck per	30 trucks, 10 trips per truck per	20 trucks, 10 trips per truck per	

	years of construction 30 trucks, 10 trips per truck per day, 3 miles per trip			day, 3 miles per trip	day, 3 miles per trip	day, 3 miles per trip	day, 3 miles per trip,	
Truck deliveries[1]	25 deliveries/day avg. (TYPICAL) 35 deliveries/day max 60% will not idle but run for 30 min. 40% will idle onsite <1 hr	Same	Same	Same	Same	Same	Same	Same
Rail (no on site transportation needed)	4 deliveries/ week avg. 4 hours onsite running (idle) time. avg (TYPICAL) 6 deliveries/ week 4 hours onsite running (idle) time. max.	1/4 TYPICAL	1/2 TYPICAL	TYPICAL	TYPICAL	TYPICAL	½ TYPICAL	¼ TYPICAL

Notes:

[1] Truck Deliveries - 60% of the 25 trucks per day will not idle onsite but spend 15 minutes on site from the gate to the delivery and 15 minutes going back, but have their engine off while unloading. The 40 percent will not turn their engine off but will be onsite less than an hour.