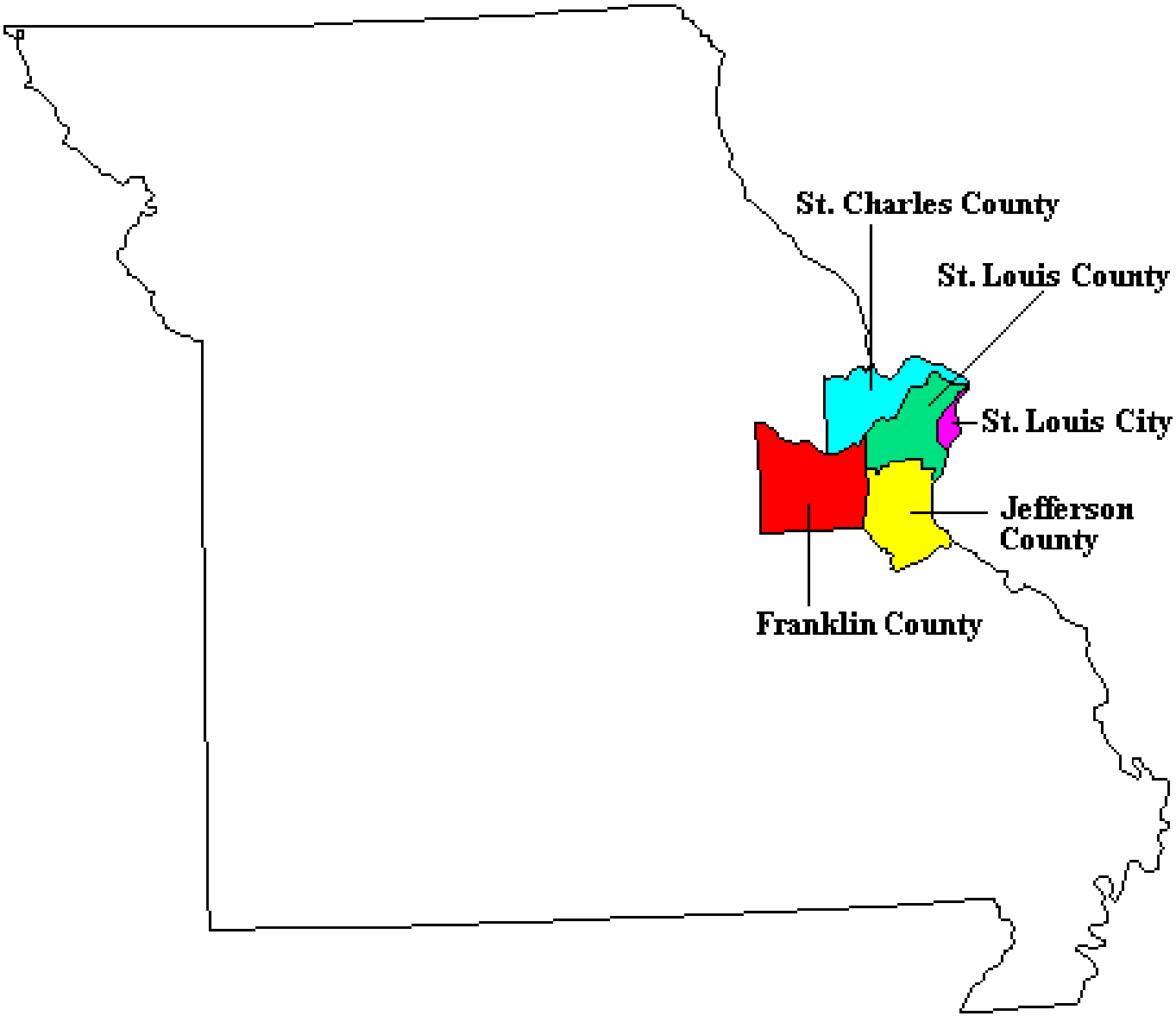
**Appendix A**
**Map of St. Louis Ozone Nonattainment Area**

**Appendix B**
**MOBILE Input Files**

**Appendix C**
**MOBILE Output Files**

**Appendix D**
**Gateway Clean Air Program Test Data Analysis**

# Appendix A


St. Charles County
St. Louis County
St. Louis City
Jefferson County
Franklin County

# Appendix B

**MOBILE 6.2 Input Files**

- NoIM04.in
- Bar9004.in
- BPerfStd.in
- GCAP04.in
- EPerfStd.in

**MOBILE 6.2 Common Input Files**

- VRegStl.d
- TECH12.D
- 2004f.V
- 2004f.T12
- 2004f.T34

```
MOBILE6 INPUT FILE

POLLUTANTS          : HC CO NOX
SPREADSHEET         :
RUN DATA

* July 2004 No I/M program

NO REFUELING        :
EXPAND EXHAUST      :
EXPAND EVAPORATIVE  :
MIN/MAX TEMP        : 74. 97.
FUEL RVP            : 7.0
ABSOLUTE HUMIDITY   : 60.4
REG DIST            : C:\RUN\VRegStl.d
FUEL PROGRAM        : 2 S

SCENARIO RECORD     : JULY 2004 EMISSIONS WITHOUT I/M
CALENDAR YEAR       : 2004
EVALUATION MONTH    : 7

END OF RUN
```

```
MOBILE6 INPUT FILE

POLLUTANTS          : HC CO NOX
SPREADSHEET         :
RUN DATA

* July 2004 BAR 90 I/M program

NO REFUELING        :
EXPAND EXHAUST      :
EXPAND EVAPORATIVE  :
MIN/MAX TEMP        : 74. 97.
FUEL RVP            : 7.0
ABSOLUTE HUMIDITY   : 60.4
REG DIST            : C:\RUN\VRegStl.d
FUEL PROGRAM        : 2 S

* Calendar year 2004.  SSI for 1971-2004 model years.
I/M PROGRAM         : 1 1990 2004 2 TRC IDLE
I/M MODEL YEARS     : 1 1971 2004
I/M VEHICLES        : 1 22222 11111111 1
I/M STRINGENCY      : 1 17.0
I/M COMPLIANCE      : 1 96.0
I/M WAIVER RATES    : 1 9.8 6.0
I/M EFFECTIVENESS   : 1 0.50 0.50 0.00
I/M GRACE PERIOD    : 1 2
NO I/M TTC CREDITS  : 1

SCENARIO RECORD     : JULY 2004 EMISSIONS WITH BIENNIAL BAR 90 I/M PROGRAM
CALENDAR YEAR       : 2004
EVALUATION MONTH    : 7

END OF RUN
```

```
MOBILE6 INPUT FILE

POLLUTANTS          : HC CO NOX
SPREADSHEET         :
RUN DATA

* July 2004 BAR 90 I/M program

NO REFUELING        :
EXPAND EXHAUST      :
EXPAND EVAPORATIVE  :
MIN/MAX TEMP        : 74. 97.
FUEL RVP            : 7.0
ABSOLUTE HUMIDITY   : 60.4
REG DIST            : C:\RUN\VRegStl.d
FUEL PROGRAM        : 2 S

* Calendar year 2004.  SSI for 1971-2004 model years.  0.0% waiver rate.
I/M PROGRAM         : 1 1983 2004 1 T/O IDLE
I/M MODEL YEARS     : 1 1968 2004
I/M VEHICLES        : 1 21111 11111111 1
I/M STRINGENCY      : 1 20.0
I/M COMPLIANCE      : 1 100.0
I/M WAIVER RATES    : 1 0.0 0.0
NO I/M TTC CREDITS  : 1

SCENARIO RECORD     : JULY 2004 EMISSIONS WITH BASIC I/M PERFORMANCE STANDARD
CALENDAR YEAR       : 2004
EVALUATION MONTH    : 7

END OF RUN
```

```
MOBILE6 INPUT FILE

POLLUTANTS          : HC CO NOX
SPREADSHEET         :
RUN DATA

* July 2004 LDGV Run

* Enhanced I/M program benefit with final cutpoints.

NO REFUELING        :
EXPAND EXHAUST      :
EXPAND EVAPORATIVE  :
MIN/MAX TEMP        : 74. 97.
FUEL RVP            : 7.0
ABSOLUTE HUMIDITY   : 60.4
REG DIST            : C:\RUN\VRegStl.d
FUEL PROGRAM        : 2 S

* Calendar year 2004.  SSI for LDGV 1971-1980 model years.  5.0% waiver rate.
I/M PROGRAM         : 1 1990 2004 2 T/O IDLE
I/M MODEL YEARS     : 1 1971 1980
I/M VEHICLES        : 1 21111 11111111 1
I/M STRINGENCY      : 1 17.0
I/M COMPLIANCE      : 1 96.0
I/M WAIVER RATES    : 1 5.0 5.0

*Calendar year 2004.  IM240 with final cutpoints for LDGV 1981-2004 model years.
I/M PROGRAM         : 2 1990 2004 2 T/O IM240
I/M MODEL YEARS     : 2 1981 2004
I/M VEHICLES        : 2 21111 11111111 1
I/M STRINGENCY      : 2 17.0
I/M COMPLIANCE      : 2 96.0
I/M WAIVER RATES    : 2 5.0 5.0
I/M CUTPOINTS       : 2 C:\RUN\2004f.V
I/M GRACE PERIOD    : 2 2

* Calendar year 2004.  Evap I/M program for LDGV 1981-2004 model years.
I/M PROGRAM         : 3 2000 2004 2 T/O GC
I/M MODEL YEARS     : 3 1981 2004
I/M VEHICLES        : 3 21111 11111111 1
I/M COMPLIANCE      : 3 96.0
I/M WAIVER RATES    : 3 0.0 0.0
I/M GRACE PERIOD    : 3 2

SCENARIO RECORD     : JULY 2004 LDGV EMISSIONS WITH GCAP FINAL CUTPOINTS
CALENDAR YEAR       : 2004
EVALUATION MONTH    : 7

END OF RUN

* July 2004 LDGT12 Run

* Enhanced I/M program benefit with final cutpoints.

NO REFUELING        :
EXPAND EXHAUST      :
EXPAND EVAPORATIVE  :
MIN/MAX TEMP        : 74. 97.
FUEL RVP            : 7.0
ABSOLUTE HUMIDITY   : 60.4
REG DIST            : C:\RUN\VRegStl.d
FUEL PROGRAM        : 2 S

* Calendar year 2004.  SSI for LDGT12 1971-1980 model years.  5.0% waiver rate.
I/M PROGRAM         : 1 1990 2004 2 T/O IDLE
I/M MODEL YEARS     : 1 1971 1980
I/M VEHICLES        : 1 12211 11111111 1
I/M STRINGENCY      : 1 17.0
I/M COMPLIANCE      : 1 96.0
I/M WAIVER RATES    : 1 5.0 5.0
I/M GRACE PERIOD    : 1 2

*Calendar year 2004.  IM240 with final cutpoints for LDGT12 1981-2004 model years.
```

```
I/M PROGRAM         : 2 1990 2004 2 T/O IM240
I/M MODEL YEARS     : 2 1981 2004
I/M VEHICLES        : 2 12211 11111111 1
I/M STRINGENCY      : 2 17.0
I/M COMPLIANCE      : 2 96.0
I/M WAIVER RATES    : 2 5.0 5.0
I/M CUTPOINTS       : 2 C:\RUN\2004f.T12

* Calendar year 2004.  Evap I/M program for LDGT12 1981-2004 model years.
I/M PROGRAM         : 3 2000 2004 2 T/O GC
I/M MODEL YEARS     : 3 1981 2004
I/M VEHICLES        : 3 12211 11111111 1
I/M COMPLIANCE      : 3 96.0
I/M WAIVER RATES    : 3 0.0 0.0
I/M GRACE PERIOD    : 3 2

SCENARIO RECORD     : JULY 2004 LDGT12 EMISSIONS WITH GCAP FINAL CUTPOINTS
CALENDAR YEAR       : 2004
EVALUATION MONTH    : 7

END OF RUN

* July 2004 LDGT34 Run

* Enhanced I/M program benefit with final cutpoints.

NO REFUELING        :
EXPAND EXHAUST      :
EXPAND EVAPORATIVE  :
MIN/MAX TEMP        : 74. 97.
FUEL RVP            : 7.0
ABSOLUTE HUMIDITY   : 60.4
REG DIST            : C:\RUN\VRegStl.d
FUEL PROGRAM        : 2 S

* Calendar year 2004.  SSI for LDGT34 1971-1980 model years.  5.0% waiver rate.
I/M PROGRAM         : 1 1990 2004 2 T/O IDLE
I/M MODEL YEARS     : 1 1971 1980
I/M VEHICLES        : 1 11122 11111111 1
I/M STRINGENCY      : 1 17.0
I/M COMPLIANCE      : 1 96.0
I/M WAIVER RATES    : 1 5.0 5.0

*Calendar year 2004.  IM240 with final cutpoints for LDGT34 1981-2004 model years.
I/M PROGRAM         : 2 1990 2004 2 T/O IM240
I/M MODEL YEARS     : 2 1981 2004
I/M VEHICLES        : 2 11122 11111111 1
I/M STRINGENCY      : 2 17.0
I/M COMPLIANCE      : 2 96.0
I/M WAIVER RATES    : 2 5.0 5.0
I/M CUTPOINTS       : 2 C:\RUN\2004f.T34
I/M GRACE PERIOD    : 2 2

* Calendar year 2004.  Evap I/M program for LDGT34 1981-2004 model years.
I/M PROGRAM         : 3 2000 2004 2 T/O GC
I/M MODEL YEARS     : 3 1981 2004
I/M VEHICLES        : 3 11122 11111111 1
I/M COMPLIANCE      : 3 96.0
I/M WAIVER RATES    : 3 0.0 0.0
I/M GRACE PERIOD    : 3 2

SCENARIO RECORD     : JULY 2004 LDGT34 EMISSIONS WITH GCAP FINAL CUTPOINTS
CALENDAR YEAR       : 2004
EVALUATION MONTH    : 7

END OF RUN
```

```
MOBILE6 INPUT FILE

POLLUTANTS          : HC CO NOX
SPREADSHEET         :
RUN DATA

* July 2004 LDGV Run

* Enhanced I/M program benefit with final cutpoints.

NO REFUELING        :
EXPAND EXHAUST      :
EXPAND EVAPORATIVE  :
MIN/MAX TEMP        : 74. 97.
FUEL RVP            : 7.0
ABSOLUTE HUMIDITY   : 60.4
REG DIST            : C:\RUN\VRegStl.d
FUEL PROGRAM        : 2 S
ANTI-TAMP PROG      :
83 68 04 21111 11111111 1 11 096. 12212222

* Calendar year 2004.  SSI for LDGV 1968-1980 model years.  3.0% waiver rate.
I/M PROGRAM         : 1 1983 2004 1 T/O IDLE
I/M MODEL YEARS     : 1 1968 1980
I/M VEHICLES        : 1 21111 11111111 1
I/M STRINGENCY      : 1 20.0
I/M COMPLIANCE      : 1 96.0
I/M WAIVER RATES    : 1 3.0 3.0
NO I/M TTC CREDITS  : 1

* Calendar year 2004.  TSI for LDGV 1981-1985 model years.  3.0% waiver rate.
I/M PROGRAM         : 2 1983 2004 1 T/O 2500/IDLE
I/M MODEL YEARS     : 2 1981 1985
I/M VEHICLES        : 2 21111 11111111 1
I/M STRINGENCY      : 2 20.0
I/M COMPLIANCE      : 2 96.0
I/M WAIVER RATES    : 2 3.0 3.0
NO I/M TTC CREDITS  : 2

*Calendar year 2004.  IM240 with final cutpoints for LDGV 1986-2004 model years.
I/M PROGRAM         : 3 1983 2004 1 T/O IM240
I/M MODEL YEARS     : 3 1986 2004
I/M VEHICLES        : 3 21111 11111111 1
I/M STRINGENCY      : 3 20.0
I/M COMPLIANCE      : 3 96.0
I/M WAIVER RATES    : 3 3.0 3.0
I/M CUTPOINTS       : 3 C:\RUN\2004f.V
NO I/M TTC CREDITS  : 3

* Calendar year 2004.  Evap I/M program for LDGV 1983-2004 model years.
I/M PROGRAM         : 4 1983 2004 1 T/O FP & GC
I/M MODEL YEARS     : 4 1983 2004
I/M VEHICLES        : 4 21111 11111111 1
I/M COMPLIANCE      : 4 96.0
I/M WAIVER RATES    : 4 0.0 0.0
NO I/M TTC CREDITS  : 4

SCENARIO RECORD     : JULY 2004 LDGV EMISSIONS WITH ENHANCED I/M PERFORMANCE STANDARD
CALENDAR YEAR       : 2004
EVALUATION MONTH    : 7

END OF RUN

* July 2004 LDGT12 Run

* Enhanced I/M program benefit with final cutpoints.

NO REFUELING        :
EXPAND EXHAUST      :
EXPAND EVAPORATIVE  :
MIN/MAX TEMP        : 74. 97.
FUEL RVP            : 7.0
ABSOLUTE HUMIDITY   : 60.4
REG DIST            : C:\RUN\VRegStl.d
```

```
FUEL PROGRAM       : 2 S
ANTI-TAMP PROG     :
83 68 04 12211 11111111 1 11 096. 12212222

* Calendar year 2004.  SSI for LDGV 1968-1980 model years.  3.0% waiver rate.
I/M PROGRAM        : 1 1983 2004 1 T/O IDLE
I/M MODEL YEARS    : 1 1968 1980
I/M VEHICLES       : 1 12211 11111111 1
I/M STRINGENCY     : 1 20.0
I/M COMPLIANCE     : 1 96.0
I/M WAIVER RATES   : 1 3.0 3.0
NO I/M TTC CREDITS : 1

* Calendar year 2004.  TSI for LDGV 1981-1985 model years.  3.0% waiver rate.
I/M PROGRAM        : 2 1983 2004 1 T/O 2500/IDLE
I/M MODEL YEARS    : 2 1981 1985
I/M VEHICLES       : 2 12211 11111111 1
I/M STRINGENCY     : 2 20.0
I/M COMPLIANCE     : 2 96.0
I/M WAIVER RATES   : 2 3.0 3.0
NO I/M TTC CREDITS : 2

*Calendar year 2004.  IM240 with final cutpoints for LDGV 1986-2004 model years.
I/M PROGRAM        : 3 1983 2004 1 T/O IM240
I/M MODEL YEARS    : 3 1986 2004
I/M VEHICLES       : 3 12211 11111111 1
I/M STRINGENCY     : 3 20.0
I/M COMPLIANCE     : 3 96.0
I/M WAIVER RATES   : 3 3.0 3.0
I/M CUTPOINTS      : 3 C:\RUN\2004f.T12
NO I/M TTC CREDITS : 3

* Calendar year 2004.  Evap I/M program for LDGV 1983-2004 model years.
I/M PROGRAM        : 4 1983 2004 1 T/O FP & GC
I/M MODEL YEARS    : 4 1983 2004
I/M VEHICLES       : 4 12211 11111111 1
I/M COMPLIANCE     : 4 96.0
I/M WAIVER RATES   : 4 0.0 0.0
NO I/M TTC CREDITS : 4

SCENARIO RECORD    : JULY 2004 LDGT12 EMISSIONS WITH ENHANCED I/M PERFORMANCE STANDARD
CALENDAR YEAR      : 2004
EVALUATION MONTH   : 7

END OF RUN

* July 2004 LDGT34 Run

* Enhanced I/M program benefit with final cutpoints.

NO REFUELING       :
EXPAND EXHAUST     :
EXPAND EVAPORATIVE :
MIN/MAX TEMP       : 74. 97.
FUEL RVP           : 7.0
ABSOLUTE HUMIDITY  : 60.4
REG DIST           : C:\RUN\VRegStl.d
FUEL PROGRAM       : 2 S
ANTI-TAMP PROG     :
83 68 04 11122 11111111 1 11 096. 12212222

* Calendar year 2004.  SSI for LDGV 1968-1980 model years.  3.0% waiver rate.
I/M PROGRAM        : 1 1983 2004 1 T/O IDLE
I/M MODEL YEARS    : 1 1968 1980
I/M VEHICLES       : 1 11122 11111111 1
I/M STRINGENCY     : 1 20.0
I/M COMPLIANCE     : 1 96.0
I/M WAIVER RATES   : 1 3.0 3.0
NO I/M TTC CREDITS : 1

* Calendar year 2004.  TSI for LDGV 1981-1985 model years.  3.0% waiver rate.
I/M PROGRAM        : 2 1983 2004 1 T/O 2500/IDLE
I/M MODEL YEARS    : 2 1981 1985
I/M VEHICLES       : 2 11122 11111111 1
```

```
I/M STRINGENCY      : 2 20.0
I/M COMPLIANCE      : 2 96.0
I/M WAIVER RATES    : 2 3.0 3.0
NO I/M TTC CREDITS : 2

*Calendar year 2004.  IM240 with final cutpoints for LDGV 1986-2004 model years.
I/M PROGRAM         : 3 1983 2004 1 T/O IM240
I/M MODEL YEARS     : 3 1986 2004
I/M VEHICLES        : 3 11122 11111111 1
I/M STRINGENCY      : 3 20.0
I/M COMPLIANCE      : 3 96.0
I/M WAIVER RATES    : 3 3.0 3.0
I/M CUTPOINTS       : 3 C:\RUN\2004f.T34
NO I/M TTC CREDITS : 3

* Calendar year 2004.  Evap I/M program for LDGV 1983-2004 model years.
I/M PROGRAM         : 4 1983 2004 1 T/O FP & GC
I/M MODEL YEARS     : 4 1983 2004
I/M VEHICLES        : 4 11122 11111111 1
I/M COMPLIANCE      : 4 96.0
I/M WAIVER RATES    : 4 0.0 0.0
NO I/M TTC CREDITS : 4

SCENARIO RECORD     : JULY 2004 LDGT34 EMISSIONS WITH ENHANCED I/M PERFORMANCE STANDARD
CALENDAR YEAR       : 2004
EVALUATION MONTH    : 7

END OF RUN
```

```
REG DIST
*
* This file contains the combined St. Louis vehicle registration for
* LDGV, LDGT1 & 2, and LDGT3 & 4 with the default MOBILE6 values for the distribution of
* vehicles by age for July of any calendar year.  The St. Louis data is from July 2002.
* There are sixteeen (16) sets of values representing 16 combined gasoline/diesel vehicle class
* distributions.  These distributions are split for gasoline and diesel
* using the separate input (or default) values for diesel sales fractions.
* Each distribution contains 25 values which represent the fraction of
* all vehicles in that class (gasoline and diesel) of that age in July.
* The first number is for age 1 (calendar year minus model year plus one)
* and the last number is for age 25.  The last age includes all vehicles
* of age 25 or older.  The first number in each distribution is an integer
* which indicates which of the 16 vehicle classes are represented by the
* distribution.  The sixteen vehicle classes are:
*
*  1  LDV    Light-Duty Vehicles (Passenger Cars)
*  2  LDT1   Light-Duty Trucks 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
*  3  LDT2   Light Duty Trucks 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
*  4  LDT3   Light Duty Trucks 3 (6,001-8500 lbs. GVWR, 0-3750 lbs. LVW)
*  5  LDT4   Light Duty Trucks 4 (6,001-8500 lbs. GVWR, 3751-5750 lbs. LVW)
*  6  HDV2B  Class 2b Heavy Duty Vehicles (8501-10,000 lbs. GVWR)
*  7  HDV3   Class 3 Heavy Duty Vehicles (10,001-14,000 lbs. GVWR)
*  8  HDV4   Class 4 Heavy Duty Vehicles (14,001-16,000 lbs. GVWR)
*  9  HDV5   Class 5 Heavy Duty Vehicles (16,001-19,500 lbs. GVWR)
* 10  HDV6   Class 6 Heavy Duty Vehicles (19,501-26,000 lbs. GVWR)
* 11  HDV7   Class 7 Heavy Duty Vehicles (26,001-33,000 lbs. GVWR)
* 12  HDV8A  Class 8a Heavy Duty Vehicles (33,001-60,000 lbs. GVWR)
* 13  HDV8B  Class 8b Heavy Duty Vehicles (>60,000 lbs. GVWR)
* 14  HDBS   School Busses
* 15  HDBT   Transit and Urban Busses
* 16  MC     Motorcycles (All)
*
* The 25 age values are arranged in two rows of 10 values followed by a row
* with the last 5 values.  Comments (such as this one) are indicated by
* an asterisk in the first column. Empty rows are ignored.  Values are
* read "free format," meaning any number may appear in any row with as
* many characters as needed (including a decimal) as long as 25 values
* follow the initial integer value separated by a space.
*
* If all 28 vehicle classes do not need to be altered from the default
* values, then only the vehicle classes that need to be changed need to
* be included in this file.  The order in which the vehicle classes are
* read does not matter, however each vehicle class set must contain 25
* values and be in the proper age order.
*
* LDV
 1 0.0484 0.0757 0.0819 0.0822 0.0735 0.0682 0.0611 0.0662 0.0565 0.0525
   0.0468 0.0438 0.0402 0.0382 0.0330 0.0267 0.0235 0.0190 0.0135 0.0079
   0.0046 0.0036 0.0031 0.0046 0.0253
* LDT1
 2 0.0331 0.0648 0.0678 0.0747 0.0736 0.0676 0.0527 0.0563 0.0639 0.0482
   0.0438 0.0428 0.0346 0.0399 0.0384 0.0334 0.0324 0.0239 0.0182 0.0118
   0.0089 0.0067 0.0051 0.0109 0.0465
* LDT2
 3 0.0331 0.0648 0.0678 0.0747 0.0736 0.0676 0.0527 0.0563 0.0639 0.0482
   0.0438 0.0428 0.0346 0.0399 0.0384 0.0334 0.0324 0.0239 0.0182 0.0118
   0.0089 0.0067 0.0051 0.0109 0.0465
* LDT3
 4 0.0495 0.0846 0.0839 0.0822 0.0566 0.0694 0.0535 0.0620 0.0511 0.0360
   0.0329 0.0277 0.0336 0.0360 0.0335 0.0244 0.0272 0.0259 0.0191 0.0121
   0.0099 0.0079 0.0088 0.0164 0.0558
* LDT4
 5 0.0495 0.0846 0.0839 0.0822 0.0566 0.0694 0.0535 0.0620 0.0511 0.0360
   0.0329 0.0277 0.0336 0.0360 0.0335 0.0244 0.0272 0.0259 0.0191 0.0121
   0.0099 0.0079 0.0088 0.0164 0.0558
* HDV2B
 6 0.0503 0.0916 0.0833 0.0758 0.0690 0.0627 0.0571 0.0519 0.0472 0.0430
   0.0391 0.0356 0.0324 0.0294 0.0268 0.0244 0.0222 0.0202 0.0184 0.0167
   0.0152 0.0138 0.0126 0.0114 0.0499
* HDV3
 7 0.0503 0.0916 0.0833 0.0758 0.0690 0.0627 0.0571 0.0519 0.0472 0.0430
   0.0391 0.0356 0.0324 0.0294 0.0268 0.0244 0.0222 0.0202 0.0184 0.0167
   0.0152 0.0138 0.0126 0.0114 0.0499
```

```
* HDV4
 8 0.0388 0.0726 0.0679 0.0635 0.0594 0.0556 0.0520 0.0486 0.0455 0.0425
   0.0398 0.0372 0.0348 0.0326 0.0304 0.0285 0.0266 0.0249 0.0233 0.0218
   0.0204 0.0191 0.0178 0.0167 0.0797
* HDV5
 9 0.0388 0.0726 0.0679 0.0635 0.0594 0.0556 0.0520 0.0486 0.0455 0.0425
   0.0398 0.0372 0.0348 0.0326 0.0304 0.0285 0.0266 0.0249 0.0233 0.0218
   0.0204 0.0191 0.0178 0.0167 0.0797
* HDV6
10 0.0388 0.0726 0.0679 0.0635 0.0594 0.0556 0.0520 0.0486 0.0455 0.0425
   0.0398 0.0372 0.0348 0.0326 0.0304 0.0285 0.0266 0.0249 0.0233 0.0218
   0.0204 0.0191 0.0178 0.0167 0.0797
* HDV7
11 0.0388 0.0726 0.0679 0.0635 0.0594 0.0556 0.0520 0.0486 0.0455 0.0425
   0.0398 0.0372 0.0348 0.0326 0.0304 0.0285 0.0266 0.0249 0.0233 0.0218
   0.0204 0.0191 0.0178 0.0167 0.0797
* HDV8a
12 0.0388 0.0726 0.0679 0.0635 0.0594 0.0556 0.0520 0.0486 0.0455 0.0425
   0.0398 0.0372 0.0348 0.0326 0.0304 0.0285 0.0266 0.0249 0.0233 0.0218
   0.0204 0.0191 0.0178 0.0167 0.0797
* HDV8b
13 0.0388 0.0726 0.0679 0.0635 0.0594 0.0556 0.0520 0.0486 0.0455 0.0425
   0.0398 0.0372 0.0348 0.0326 0.0304 0.0285 0.0266 0.0249 0.0233 0.0218
   0.0204 0.0191 0.0178 0.0167 0.0797
* HDBS
14 0.0393 0.0734 0.0686 0.0641 0.0599 0.0559 0.0522 0.0488 0.0456 0.0426
   0.0398 0.0372 0.0347 0.0324 0.0303 0.0283 0.0264 0.0247 0.0231 0.0216
   0.0201 0.0188 0.0176 0.0165 0.0781
* HDBT
15 0.0307 0.0614 0.0614 0.0614 0.0614 0.0614 0.0614 0.0614 0.0614 0.0613
   0.0611 0.0607 0.0595 0.0568 0.0511 0.0406 0.0254 0.0121 0.0099 0.0081
   0.0066 0.0054 0.0044 0.0037 0.0114
* Motorcycles
16 0.1440 0.1680 0.1350 0.1090 0.0880 0.0700 0.0560 0.0450 0.0360 0.0290
   0.0230 0.0970 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
   0.0000 0.0000 0.0000 0.0000 0.0000
```

```
1111 220. 1.20 999. 111  Low alt, Annl and Bien Insp Freq TECH 1 & 2 I/M cred data
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* External data file 2004f.V created from CUTPOINT.D
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* 2004    2003    2002    2001    2000    1999    1998    1997    1996    1995
* 1994    1993    1992    1991    1990    1989    1988    1987    1986    1985
* 1984    1983    1982    1981    1980

I/M CUTPOINTS

* Calendar year 2004.  IM240 final cutpoints for LDGV 1981-2004 model years.

* Block 1 (LDGV)
* Final HC Cutpoint for 1996+ is 0.600 gpm, but M6 minimum is 0.800 gpm.
* Final CO Cutpoint for 1996+ is 10.00 gpm, but M6 minimum is 15.00 gpm.
* Final NOx Cutpoint for 1996+ is 1.50 gpm, but M6 minimum is 2.000 gpm.
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800
  0.800   0.800   0.800   0.800   0.800
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000
 15.000  15.000  30.000  30.000  30.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000
  2.000   2.000   2.000   2.000   2.000

* Block 2 (LDGT2, LDGT3) - Ignored by M6
* Final CO Cutpoint for 1996+ is 13.000 gpm, but M6 minimum is 15.000 gpm.
* Final NOx Cutpoint for 1996+ is 1.800 gpm, but M6 minimum is  2.000 gpm.
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.500
  2.500   2.500   2.500   2.500   2.500   2.500   2.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500

* Block 3 (LDGT4) - Ignored by M6
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   3.500
  3.500   3.500   3.500   3.500   3.500   3.500   3.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500

* Block 4 (HDGV) - Ignored by M6
* HDGVs not subject to I/M program.
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   3.500
  3.500   3.500   3.500   3.500   3.500   3.500   3.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500
```

```
* External data file 2004f.T12 created from CUTPOINT.D
*
* 2004    2003    2002    2001    2000    1999    1998    1997    1996    1995
* 1994    1993    1992    1991    1990    1989    1988    1987    1986    1985
* 1984    1983    1982    1981    1980

I/M CUTPOINTS

* Calendar year 2004.  IM240 final cutpoints for LDGT12 1981-2004 model years.

* Block 1 (LDGT1)
* Final CO Cutpoint for 1996+ is 13.000 gpm, but M6 minimum is 15.000 gpm.
* Final NOx Cutpoint for 1996+ is 1.800 gpm, but M6 minimum is  2.000 gpm.
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.500
  2.500   2.500   2.500   2.500   2.500   2.500   2.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500

* Block 2 (LDGT2)
* Final CO Cutpoint for 1996+ is 13.000 gpm, but M6 minimum is 15.000 gpm.
* Final NOx Cutpoint for 1996+ is 1.800 gpm, but M6 minimum is  2.000 gpm.
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.500
  2.500   2.500   2.500   2.500   2.500   2.500   2.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500

* Block 3 (LDGT4) - Ignored by M6
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   3.500
  3.500   3.500   3.500   3.500   3.500   3.500   3.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500

* Block 4 (HDGV) - Ignored by M6
* HDGVs not subject to I/M program.
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   3.500
  3.500   3.500   3.500   3.500   3.500   3.500   3.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500
```

```
* External data file 2004f.T34 created from CUTPOINT.D
*
* 2004    2003    2002    2001    2000    1999    1998    1997    1996    1995
* 1994    1993    1992    1991    1990    1989    1988    1987    1986    1985
* 1984    1983    1982    1981    1980

I/M CUTPOINTS

* Calendar year 2004.  IM240 final cutpoints for LDGT34 1981-2004 model years.

* Block 1 (LDGT1) - Ignored by M6
* Final CO Cutpoint for 1996+ is 13.000 gpm, but M6 minimum is 15.000 gpm.
* Final NOx Cutpoint for 1996+ is 1.800 gpm, but M6 minimum is  2.000 gpm.
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.500
  2.500   2.500   2.500   2.500   2.500   2.500   2.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500

* Block 2 (LDGT3)
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   3.500
  3.500   3.500   3.500   3.500   3.500   3.500   3.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500

* Block 3 (LDGT4)
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   3.500
  3.500   3.500   3.500   3.500   3.500   3.500   3.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500

* Block 4 (HDGV) - Ignored by M6
* HDGVs not subject to I/M program.
  0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   0.800   1.600
  1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600   1.600
  1.600   3.400   3.400   3.400   3.400
 15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  15.000  40.000
 40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000  40.000
 40.000  70.000  70.000  70.000  70.000
  2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   2.000   3.500
  3.500   3.500   3.500   3.500   3.500   3.500   3.500   4.500   4.500   4.500
  4.500   4.500   4.500   4.500   4.500
```

# Appendix C

**MOBILE 6.2 Output Files**

- NoIM04.txt
- Bar9004.txt
- BPerfStd.txt
- GCAP04.txt
- EPerfStd.txt

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\RUN\NOIM04.IN (file 1, run 1).                        *
************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 EMISSIONS WITHOUT I/M
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  74.0 (F)
              Maximum Temperature:  97.0 (F)
                Absolute Humidity:   60. grains/lb
              Fuel Sulfur Content:  120. ppm

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

| Vehicle Type: GVWR: | LDGV | LDGT12 <6000 | LDGT34 >6000 | LDGT (All) | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |
| Composite Emission Factors (g/mi): | | | | | | | | | | |
| Composite VOC : | 1.180 | 1.567 | 1.651 | 1.591 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.324 |
| Composite CO : | 12.48 | 17.24 | 18.17 | 17.51 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 14.005 |
| Composite NOX : | 1.107 | 1.418 | 1.617 | 1.474 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.378 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.287 | 0.478 | 0.501 | 0.485 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.292 | 0.448 | 0.559 | 0.479 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.579 | 0.926 | 1.060 | 0.964 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.758 |
| CO Start: | 2.95 | 6.09 | 6.36 | 6.17 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 9.53 | 11.15 | 11.82 | 11.34 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 12.48 | 17.24 | 18.17 | 17.51 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 14.005 |
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.924 | 1.142 | 1.342 | 1.198 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 1.107 | 1.418 | 1.617 | 1.474 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.378 |

NOIM04

Non-Exhaust Emissions (g/mi):

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Hot Soak Loss: | 0.177 | 0.185 | 0.159 | 0.178 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.164 |
| Diurnal Loss: | 0.031 | 0.037 | 0.035 | 0.036 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.135 | 0.158 | 0.149 | 0.155 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.250 | 0.251 | 0.238 | 0.248 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.226 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.601 | 0.641 | 0.591 | 0.628 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.566 |

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\RUN\BAR9004.IN (file 1, run 1).                        *
*************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 EMISSIONS WITH BIENNIAL BAR 90 I/M PROGRAM
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
               there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  74.0 (F)
               Maximum Temperature:  97.0 (F)
                 Absolute Humidity:   60. grains/lb
               Fuel Sulfur Content:  120. ppm

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

| Vehicle Type: | LDGV | LDGT12 | LDGT34 | LDGT | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| GVWR: | | <6000 | >6000 | (All) | | | | | | |
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |
| Composite Emission Factors (g/mi): | | | | | | | | | | |
| Composite VOC : | 1.111 | 1.475 | 1.551 | 1.496 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.253 |
| Composite CO : | 11.82 | 16.53 | 17.40 | 16.78 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.401 |
| Composite NOX : | 1.090 | 1.395 | 1.598 | 1.452 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.361 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.257 | 0.421 | 0.444 | 0.428 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.253 | 0.413 | 0.516 | 0.442 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.510 | 0.834 | 0.960 | 0.869 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.687 |
| CO Start: | 2.78 | 5.75 | 5.97 | 5.81 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 9.04 | 10.78 | 11.43 | 10.96 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 11.82 | 16.53 | 17.40 | 16.78 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.401 |
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.908 | 1.119 | 1.323 | 1.176 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 1.090 | 1.395 | 1.598 | 1.452 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.361 |

| Non-Exhaust Emissions (g/mi): | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Hot Soak Loss: | 0.177 | 0.185 | 0.159 | 0.178 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.164 |
| Diurnal Loss: | 0.031 | 0.037 | 0.035 | 0.036 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.135 | 0.158 | 0.149 | 0.155 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.250 | 0.251 | 0.238 | 0.248 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.226 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.601 | 0.641 | 0.591 | 0.628 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.566 |

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\RUN\BPERFSTD.IN (file 1, run 1).                       *
*************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 EMISSIONS WITH BASIC I/M PERFORMANCE STANDARD
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  74.0 (F)
              Maximum Temperature:  97.0 (F)
                Absolute Humidity:   60. grains/lb
              Fuel Sulfur Content:  120. ppm

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

| Vehicle Type: | LDGV | LDGT12 | LDGT34 | LDGT | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| GVWR: | | <6000 | >6000 | (All) | | | | | | |
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |
| Composite Emission Factors (g/mi): | | | | | | | | | | |
| Composite VOC : | 1.078 | 1.567 | 1.651 | 1.591 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.280 |
| Composite CO : | 11.02 | 17.24 | 18.17 | 17.51 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.370 |
| Composite NOX : | 1.088 | 1.418 | 1.617 | 1.474 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.369 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.236 | 0.478 | 0.501 | 0.485 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.241 | 0.448 | 0.559 | 0.479 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.477 | 0.926 | 1.060 | 0.964 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.713 |
| CO Start: | 2.46 | 6.09 | 6.36 | 6.17 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 8.56 | 11.15 | 11.82 | 11.34 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 11.02 | 17.24 | 18.17 | 17.51 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.370 |
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.905 | 1.142 | 1.342 | 1.198 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 1.088 | 1.418 | 1.617 | 1.474 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.369 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-Exhaust Emissions (g/mi): | | | | | | | | | | |
| Hot Soak Loss: | 0.177 | 0.185 | 0.159 | 0.178 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.164 |
| Diurnal Loss: | 0.031 | 0.037 | 0.035 | 0.036 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.135 | 0.158 | 0.149 | 0.155 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.250 | 0.251 | 0.238 | 0.248 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.226 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.601 | 0.641 | 0.591 | 0.628 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.566 |

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\RUN\GCAP04.IN (file 1, run 1).                         *
*************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading non-default I/M CUTPOINTS from the following external
* data file: C:\RUN\2004F.V

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 LDGV EMISSIONS WITH GCAP FINAL CUTPOINTS
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  74.0 (F)
              Maximum Temperature:  97.0 (F)
                Absolute Humidity:   60. grains/lb
              Fuel Sulfur Content:  120. ppm

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

| Vehicle Type: | LDGV | LDGT12 | LDGT34 | LDGT | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| GVWR: | | <6000 | >6000 | (All) | | | | | | |
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |
| Composite Emission Factors (g/mi): | | | | | | | | | | |
| Composite VOC : | 1.039 | 1.567 | 1.651 | 1.591 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.263 |
| Composite CO : | 10.30 | 17.24 | 18.17 | 17.51 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.055 |
| Composite NOX : | 0.965 | 1.418 | 1.617 | 1.474 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.316 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.244 | 0.478 | 0.501 | 0.485 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.209 | 0.448 | 0.559 | 0.479 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.453 | 0.926 | 1.060 | 0.964 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.703 |
| CO Start: | 2.55 | 6.09 | 6.36 | 6.17 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 7.75 | 11.15 | 11.82 | 11.34 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 10.30 | 17.24 | 18.17 | 17.51 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.055 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.783 | 1.142 | 1.342 | 1.198 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 0.965 | 1.418 | 1.617 | 1.474 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.316 |

Non-Exhaust Emissions (g/mi):

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Hot Soak Loss: | 0.171 | 0.185 | 0.159 | 0.178 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.161 |
| Diurnal Loss: | 0.030 | 0.037 | 0.035 | 0.036 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.134 | 0.158 | 0.149 | 0.155 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.243 | 0.251 | 0.238 | 0.248 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.223 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.587 | 0.641 | 0.591 | 0.628 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.560 |

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\RUN\GCAP04.IN (file 1, run 2).                         *
*************************************************************************
  M603 Comment:
              User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading non-default I/M CUTPOINTS from the following external
* data file: C:\RUN\2004F.T12

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 LDGT12 EMISSIONS WITH GCAP FINAL CUTPOINTS
* File 1, Run 2, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
             there are no sales for vehicle class HDGV8b

                  Calendar Year:  2004
                          Month:  July
                       Altitude:  Low
             Minimum Temperature:  74.0 (F)
             Maximum Temperature:  97.0 (F)
               Absolute Humidity:   60. grains/lb
             Fuel Sulfur Content:  120. ppm

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

| Vehicle Type: | LDGV | LDGT12 | LDGT34 | LDGT | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| GVWR: | | <6000 | >6000 | (All) | | | | | | |
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |

Composite Emission Factors (g/mi):

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Composite VOC : | 1.180 | 1.367 | 1.651 | 1.447 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.262 |
| Composite CO : | 12.48 | 14.59 | 18.17 | 15.59 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.179 |
| Composite NOX : | 1.107 | 1.265 | 1.617 | 1.364 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.330 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.287 | 0.413 | 0.501 | 0.438 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.292 | 0.328 | 0.559 | 0.392 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.579 | 0.741 | 1.060 | 0.830 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.700 |
| CO Start: | 2.95 | 5.22 | 6.36 | 5.54 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 9.53 | 9.37 | 11.82 | 10.05 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 12.48 | 14.59 | 18.17 | 15.59 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.179 |
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.924 | 0.989 | 1.342 | 1.088 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 1.107 | 1.265 | 1.617 | 1.364 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.330 |
| Non-Exhaust Emissions (g/mi): | | | | | | | | | | |
| Hot Soak Loss: | 0.177 | 0.178 | 0.159 | 0.173 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.162 |
| Diurnal Loss: | 0.031 | 0.036 | 0.035 | 0.035 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.135 | 0.157 | 0.149 | 0.155 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.250 | 0.245 | 0.238 | 0.243 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.224 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.601 | 0.626 | 0.591 | 0.617 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.562 |

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\RUN\GCAP04.IN (file 1, run 3).                         *
*************************************************************************
  M603 Comment:
              User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading non-default I/M CUTPOINTS from the following external
* data file: C:\RUN\2004F.T34

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 LDGT34 EMISSIONS WITH GCAP FINAL CUTPOINTS
* File 1, Run 3, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
             there are no sales for vehicle class HDGV8b

                  Calendar Year:  2004
                          Month:  July
                       Altitude:  Low
             Minimum Temperature:  74.0 (F)
             Maximum Temperature:  97.0 (F)
               Absolute Humidity:   60. grains/lb
```

Fuel Sulfur Content: 120. ppm

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

| Vehicle Type: | LDGV | LDGT12 | LDGT34 | LDGT | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| GVWR: | | <6000 | >6000 | (All) | | | | | | |
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |
| Composite Emission Factors (g/mi): | | | | | | | | | | |
| Composite VOC : | 1.180 | 1.567 | 1.445 | 1.533 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.299 |
| Composite CO : | 12.48 | 17.24 | 15.40 | 16.73 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.669 |
| Composite NOX : | 1.107 | 1.418 | 1.493 | 1.439 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.363 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.287 | 0.478 | 0.436 | 0.467 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.292 | 0.448 | 0.431 | 0.443 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.579 | 0.926 | 0.867 | 0.910 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.734 |
| CO Start: | 2.95 | 6.09 | 5.41 | 5.90 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 9.53 | 11.15 | 10.00 | 10.83 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 12.48 | 17.24 | 15.40 | 16.73 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.669 |
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.924 | 1.142 | 1.218 | 1.163 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 1.107 | 1.418 | 1.493 | 1.439 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.363 |
| Non-Exhaust Emissions (g/mi): | | | | | | | | | | |
| Hot Soak Loss: | 0.177 | 0.185 | 0.154 | 0.176 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.163 |
| Diurnal Loss: | 0.031 | 0.037 | 0.034 | 0.036 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.135 | 0.158 | 0.148 | 0.155 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.250 | 0.251 | 0.232 | 0.246 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.226 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.601 | 0.641 | 0.578 | 0.625 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.565 |

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\RUN\EPERFSTD.IN (file 1, run 1).                       *
*************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading non-default I/M CUTPOINTS from the following external
* data file: C:\RUN\2004F.V

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 LDGV EMISSIONS WITH GCAP FINAL CUTPOINTS
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  74.0 (F)
              Maximum Temperature:  97.0 (F)
                Absolute Humidity:   60. grains/lb
              Fuel Sulfur Content:  120. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  Yes
                 Reformulated Gas:  Yes
```

| Vehicle Type: | LDGV | LDGT12 | LDGT34 | LDGT | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| GVWR: | | <6000 | >6000 | (All) | | | | | | |
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |
| Composite Emission Factors (g/mi): | | | | | | | | | | |
| Composite VOC : | 1.015 | 1.567 | 1.651 | 1.591 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.252 |
| Composite CO : | 10.44 | 17.24 | 18.17 | 17.51 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.115 |
| Composite NOX : | 0.961 | 1.418 | 1.617 | 1.474 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.314 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.230 | 0.478 | 0.501 | 0.485 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.210 | 0.448 | 0.559 | 0.479 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.440 | 0.926 | 1.060 | 0.964 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.697 |
| CO Start: | 2.42 | 6.09 | 6.36 | 6.17 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 8.02 | 11.15 | 11.82 | 11.34 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 10.44 | 17.24 | 18.17 | 17.51 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.115 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.779 | 1.142 | 1.342 | 1.198 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 0.961 | 1.418 | 1.617 | 1.474 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.314 |

Non-Exhaust Emissions (g/mi):

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Hot Soak Loss: | 0.166 | 0.185 | 0.159 | 0.178 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.159 |
| Diurnal Loss: | 0.030 | 0.037 | 0.035 | 0.036 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.133 | 0.158 | 0.149 | 0.155 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.238 | 0.251 | 0.238 | 0.248 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.221 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.574 | 0.641 | 0.591 | 0.628 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.555 |

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\RUN\EPERFSTD.IN (file 1, run 2).                       *
*************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.

* Reading non-default I/M CUTPOINTS from the following external
* data file: C:\RUN\2004F.T12

* # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 LDGT12 EMISSIONS WITH GCAP FINAL CUTPOINTS
* File 1, Run 2, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  74.0 (F)
              Maximum Temperature:  97.0 (F)
                Absolute Humidity:   60. grains/lb
              Fuel Sulfur Content:  120. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  Yes
                Reformulated Gas:  Yes
```

| Vehicle Type: | LDGV | LDGT12 | LDGT34 | LDGT | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| GVWR: | | <6000 | >6000 | (All) | | | | | | |
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |

Composite Emission Factors (g/mi):

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Composite VOC : | 1.180 | 1.316 | 1.651 | 1.410 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.246 |
| Composite CO : | 12.48 | 14.40 | 18.17 | 15.46 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.119 |
| Composite NOX : | 1.107 | 1.242 | 1.617 | 1.348 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.323 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.287 | 0.375 | 0.501 | 0.411 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.292 | 0.327 | 0.559 | 0.392 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.579 | 0.703 | 1.060 | 0.803 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.688 |
| CO Start: | 2.95 | 4.85 | 6.36 | 5.27 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 9.53 | 9.55 | 11.82 | 10.18 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 12.48 | 14.40 | 18.17 | 15.46 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.119 |
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.924 | 0.966 | 1.342 | 1.072 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 1.107 | 1.242 | 1.617 | 1.348 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.323 |
| Non-Exhaust Emissions (g/mi): | | | | | | | | | | |
| Hot Soak Loss: | 0.177 | 0.172 | 0.159 | 0.169 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.160 |
| Diurnal Loss: | 0.031 | 0.035 | 0.035 | 0.035 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.135 | 0.156 | 0.149 | 0.154 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.250 | 0.239 | 0.238 | 0.239 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.222 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.601 | 0.614 | 0.591 | 0.608 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.558 |

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: C:\RUN\EPERFSTD.IN (file 1, run 3).                       *
*************************************************************************
  M603 Comment:
              User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: C:\RUN\VREGSTL.D
  M616 Comment:
              User has supplied post-1999 sulfur levels.

* Reading non-default I/M CUTPOINTS from the following external
* data file: C:\RUN\2004F.T34

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* JULY 2004 LDGT34 EMISSIONS WITH GCAP FINAL CUTPOINTS
* File 1, Run 3, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  74.0 (F)
              Maximum Temperature:  97.0 (F)
                Absolute Humidity:   60. grains/lb
```

Fuel Sulfur Content: 120. ppm

Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

| Vehicle Type: | LDGV | LDGT12 | LDGT34 | LDGT | HDGV | LDDV | LDDT | HDDV | MC | All Veh |
|---|---|---|---|---|---|---|---|---|---|---|
| GVWR: | | <6000 | >6000 | (All) | | | | | | |
| VMT Distribution: | 0.4360 | 0.3110 | 0.1214 | | 0.0368 | 0.0007 | 0.0020 | 0.0862 | 0.0059 | 1.0000 |
| Composite Emission Factors (g/mi): | | | | | | | | | | |
| Composite VOC : | 1.180 | 1.567 | 1.388 | 1.517 | 1.543 | 0.660 | 0.985 | 0.578 | 2.15 | 1.292 |
| Composite CO : | 12.48 | 17.24 | 15.16 | 16.66 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.639 |
| Composite NOX : | 1.107 | 1.418 | 1.467 | 1.432 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.359 |
| Exhaust emissions (g/mi): | | | | | | | | | | |
| VOC Start: | 0.287 | 0.478 | 0.397 | 0.456 | | 0.292 | 0.447 | | 0.394 | |
| VOC Running: | 0.292 | 0.448 | 0.423 | 0.441 | | 0.367 | 0.538 | | 1.249 | |
| VOC Total Exhaust: | 0.579 | 0.926 | 0.820 | 0.896 | 0.723 | 0.660 | 0.985 | 0.578 | 1.64 | 0.729 |
| CO Start: | 2.95 | 6.09 | 4.99 | 5.78 | | 0.850 | 0.876 | | 3.117 | |
| CO Running: | 9.53 | 11.15 | 10.17 | 10.88 | | 0.853 | 0.813 | | 12.494 | |
| CO Total Exhaust: | 12.48 | 17.24 | 15.16 | 16.66 | 16.93 | 1.704 | 1.690 | 3.194 | 15.61 | 13.639 |
| NOx Start: | 0.182 | 0.276 | 0.275 | 0.276 | | 0.090 | 0.085 | | 0.376 | |
| NOx Running: | 0.924 | 1.142 | 1.192 | 1.156 | | 1.482 | 1.510 | | 0.809 | |
| NOx Total Exhaust: | 1.107 | 1.418 | 1.467 | 1.432 | 4.601 | 1.572 | 1.594 | 12.500 | 1.18 | 2.359 |
| Non-Exhaust Emissions (g/mi): | | | | | | | | | | |
| Hot Soak Loss: | 0.177 | 0.185 | 0.149 | 0.175 | 0.256 | 0.000 | 0.000 | 0.000 | 0.115 | 0.163 |
| Diurnal Loss: | 0.031 | 0.037 | 0.034 | 0.036 | 0.053 | 0.000 | 0.000 | 0.000 | 0.013 | 0.031 |
| Resting Loss: | 0.135 | 0.158 | 0.147 | 0.155 | 0.224 | 0.000 | 0.000 | 0.000 | 0.376 | 0.136 |
| Running Loss: | 0.250 | 0.251 | 0.227 | 0.245 | 0.276 | 0.000 | 0.000 | 0.000 | 0.000 | 0.225 |
| Crankcase Loss: | 0.008 | 0.011 | 0.010 | 0.011 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Refueling Loss: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Non-Exhaust: | 0.601 | 0.641 | 0.568 | 0.622 | 0.820 | 0.000 | 0.000 | 0.000 | 0.504 | 0.564 |

# Appendix D

- **D1 – IM240 Test Emissions Reductions**
- **D2 – Enhanced Idle Test Emissions Reductions**
- **D3 – Tailpipe Test Emissions Reductions Summary**

## Notes and Assumptions

**Unresolved remaining in the area** – Vehicles that do not complete an inspection cycle by passing the inspection or obtaining a waiver are termed "unresolved". In Arizona and Colorado studies, some of these vehicles have been found continuing to operate in the I/M program area. In this report it has been assumed that one third of these vehicles continue to operate in the I/M area and two thirds are either scrapped or transfer out of the area.

**Model Year/Type** – Vehicles are grouped by model year and type. Type "P" are light duty passenger vehicles (LDGV) and type "T" are light duty trucks (LDGT). On pages showing results for Enhanced Idle tests, results for model year 1980 and older vehicles are included in the first section of the table along with the results for the 1981 model vehicles.

**First Result – Last Result** – The results of the first I/M test of the vehicle performed between January 2002 and December 2003 and the last I/M test of the vehicle performed between January 2002 and February 2004. The purpose of the earlier cutoff date for initial tests vs. retests is to limit the number of open repair and retest cycles.

**RapidScreen Audit Vehicles** – The test results of the two percent audit sample are included in the IM240 test and Enhanced Idle test data.

**Initial/Final HC/CO/$NO_x$** – Average tailpipe test emissions values. Tailpipe test results are in grams per mile for IM240 tests and in ppm HC and percent CO for idle tests.

The pass/fail/waiver result is the result for the whole I/M result including the gas cap pressure test. In instances where a vehicle initially fails the gas cap pressure test but is not a high tailpipe emitter, the tailpipe emissions recorded on the final test can be higher than the tailpipe emissions recorded on the initial test. Minor variations in test results on the same vehicle are normal and not significant provided the variation is small compared to the test standard.

# Appendix D1 IM240 Test Emissions Reductions

Unresolved fails remaining in area 33%

| Model Year/Type | First Result | Last Result | Vehicles | | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | Pass | - | 490 | | 0.41 | 6.10 | 1.62 | 0.41 | 6.10 | 1.62 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 335 | 27.9% | 2.33 | 35.23 | 2.90 | 0.43 | 5.83 | 1.46 | 81.4% | 83.5% | 49.7% |
| | Fail | Unresolv. | 276 | 23.0% | 4.43 | 62.09 | 2.53 | 1.42 | 21.05 | 0.82 | 67.9% | 66.1% | 67.6% |
| | Fail | Waiver | 99 | 8.3% | 4.71 | 69.18 | 2.76 | 3.23 | 54.41 | 1.78 | 31.4% | 21.4% | 35.5% |
| Total | Fail% | | 1,200 | 59.2% | 2.23 | 32.31 | 2.28 | 0.88 | 13.45 | 1.40 | 60.3% | 58.4% | 38.5% |
| 1982 | Pass | - | 737 | | 0.47 | 6.43 | 1.82 | 0.47 | 6.43 | 1.82 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 302 | 18.3% | 2.20 | 29.58 | 3.01 | 0.45 | 5.62 | 1.80 | 79.4% | 81.0% | 40.1% |
| | Fail | Unresolv. | 272 | 16.5% | 3.63 | 56.48 | 2.70 | 1.18 | 17.45 | 0.92 | 67.4% | 69.1% | 66.0% |
| | Fail | Waiver | 336 | 20.4% | 3.38 | 53.35 | 2.91 | 2.99 | 47.65 | 2.67 | 11.6% | 10.7% | 8.5% |
| Total | Fail% | | 1,647 | 55.3% | 1.90 | 28.51 | 2.41 | 1.10 | 16.51 | 1.84 | 42.3% | 42.1% | 23.5% |
| 1983 | Pass | - | 1,163 | | 0.43 | 4.76 | 1.77 | 0.43 | 4.76 | 1.77 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 682 | 26.3% | 1.80 | 25.56 | 3.02 | 0.42 | 4.59 | 1.63 | 76.8% | 82.0% | 46.1% |
| | Fail | Unresolv. | 550 | 21.2% | 3.57 | 52.62 | 2.69 | 1.23 | 17.56 | 0.86 | 65.6% | 66.6% | 67.9% |
| | Fail | Waiver | 203 | 7.8% | 3.47 | 57.54 | 2.79 | 2.68 | 40.34 | 2.33 | 22.8% | 29.9% | 16.5% |
| Total | Fail% | | 2,598 | 55.2% | 1.69 | 24.48 | 2.37 | 0.77 | 10.21 | 1.58 | 54.5% | 58.3% | 33.2% |
| 1984 | Pass | - | 2,773 | | 0.47 | 5.17 | 1.77 | 0.47 | 5.17 | 1.77 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 1,091 | 19.4% | 1.84 | 25.47 | 2.75 | 0.44 | 4.43 | 1.66 | 76.0% | 82.6% | 39.7% |
| | Fail | Unresolv. | 802 | 14.3% | 3.32 | 49.51 | 2.80 | 1.11 | 16.39 | 0.92 | 66.5% | 66.9% | 67.3% |
| | Fail | Waiver | 953 | 17.0% | 3.12 | 48.40 | 2.98 | 2.75 | 43.91 | 2.70 | 11.8% | 9.3% | 9.3% |
| Total | Fail% | | 5,619 | 50.6% | 1.59 | 22.77 | 2.31 | 0.95 | 13.20 | 1.78 | 40.7% | 42.0% | 22.9% |
| 1985 | Pass | - | 3,536 | | 0.45 | 4.63 | 1.62 | 0.45 | 4.63 | 1.62 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 1,759 | 24.6% | 1.93 | 25.17 | 2.82 | 0.41 | 3.78 | 1.47 | 78.6% | 85.0% | 47.7% |
| | Fail | Unresolv. | 1,359 | 19.0% | 3.25 | 44.52 | 2.74 | 1.09 | 14.93 | 0.89 | 66.5% | 66.5% | 67.4% |
| | Fail | Waiver | 502 | 7.0% | 3.75 | 50.04 | 2.79 | 2.58 | 34.50 | 2.20 | 31.4% | 31.1% | 21.3% |
| Total | Fail% | | 7,156 | 50.6% | 1.58 | 20.44 | 2.21 | 0.71 | 8.47 | 1.49 | 54.8% | 58.5% | 32.7% |
| 1986 | Pass | - | 6,484 | | 0.46 | 4.47 | 1.56 | 0.46 | 4.47 | 1.56 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 1,962 | 17.6% | 1.85 | 22.39 | 2.78 | 0.43 | 3.99 | 1.54 | 76.7% | 82.2% | 44.6% |
| | Fail | Unresolv. | 1,260 | 11.3% | 3.35 | 35.57 | 2.93 | 1.12 | 11.66 | 0.96 | 66.7% | 67.2% | 67.2% |
| | Fail | Waiver | 1,433 | 12.9% | 3.04 | 36.38 | 2.97 | 2.72 | 32.27 | 2.76 | 10.4% | 11.3% | 7.1% |
| Total | Fail% | | 11,139 | 41.8% | 1.36 | 15.25 | 2.11 | 0.82 | 8.77 | 1.64 | 39.9% | 42.5% | 22.2% |
| 1987 | Pass | - | 7,201 | | 0.42 | 4.12 | 1.55 | 0.42 | 4.12 | 1.55 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 2,430 | 20.9% | 1.81 | 22.03 | 2.88 | 0.41 | 3.56 | 1.57 | 77.4% | 83.8% | 45.3% |
| | Fail | Unresolv. | 1,450 | 12.5% | 3.14 | 33.02 | 2.95 | 1.03 | 10.94 | 0.97 | 67.1% | 66.9% | 67.0% |
| | Fail | Waiver | 530 | 4.6% | 3.47 | 41.24 | 2.91 | 2.58 | 30.21 | 2.44 | 25.6% | 26.7% | 16.1% |
| Total | Fail% | | 11,611 | 38.0% | 1.19 | 13.17 | 2.07 | 0.59 | 6.04 | 1.52 | 50.1% | 54.1% | 26.2% |
| 1988 | Pass | - | 13,090 | | 0.45 | 4.55 | 1.44 | 0.45 | 4.55 | 1.44 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 2,890 | 15.4% | 1.86 | 20.95 | 2.64 | 0.45 | 4.18 | 1.52 | 75.7% | 80.0% | 42.2% |
| | Fail | Unresolv. | 1,314 | 7.0% | 3.42 | 33.50 | 2.82 | 1.11 | 10.74 | 0.92 | 67.5% | 67.9% | 67.4% |
| | Fail | Waiver | 1,466 | 7.8% | 3.11 | 29.46 | 3.07 | 2.71 | 25.55 | 2.78 | 12.9% | 13.3% | 9.4% |
| Total | Fail% | | 18,760 | 30.2% | 1.08 | 11.05 | 1.85 | 0.67 | 6.57 | 1.52 | 37.9% | 40.6% | 17.7% |
| 1989 | Pass | - | 15,234 | | 0.42 | 4.32 | 1.39 | 0.42 | 4.32 | 1.39 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 3,300 | 15.9% | 1.85 | 21.40 | 2.66 | 0.44 | 4.02 | 1.45 | 76.2% | 81.2% | 45.6% |
| | Fail | Unresolv. | 1,637 | 7.9% | 3.07 | 28.40 | 3.07 | 1.01 | 9.69 | 1.00 | 67.1% | 65.9% | 67.6% |
| | Fail | Waiver | 526 | 2.5% | 3.71 | 36.71 | 2.82 | 2.47 | 25.91 | 2.27 | 33.3% | 29.4% | 19.7% |
| Total | Fail% | | 20,697 | 26.4% | 0.94 | 9.77 | 1.76 | 0.52 | 5.25 | 1.39 | 44.5% | 46.3% | 21.1% |
| 1990 | Pass | - | 20,796 | | 0.45 | 4.80 | 1.48 | 0.45 | 4.80 | 1.48 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 3,434 | 12.7% | 1.84 | 22.57 | 2.65 | 0.45 | 4.61 | 1.48 | 75.5% | 79.6% | 44.3% |
| | Fail | Unresolv. | 1,319 | 4.9% | 2.91 | 28.79 | 3.13 | 1.00 | 9.75 | 1.02 | 65.5% | 66.1% | 67.4% |
| | Fail | Waiver | 1,530 | 5.7% | 2.94 | 31.74 | 3.22 | 2.51 | 25.96 | 3.02 | 14.5% | 18.2% | 6.3% |
| Total | Fail% | | 27,079 | 23.2% | 0.88 | 9.75 | 1.81 | 0.59 | 6.21 | 1.54 | 33.1% | 36.2% | 14.6% |
| 1991 | Pass | - | 22,139 | | 0.40 | 4.42 | 1.44 | 0.40 | 4.42 | 1.44 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 3,663 | 13.2% | 1.84 | 22.61 | 2.57 | 0.42 | 4.21 | 1.41 | 77.1% | 81.4% | 45.1% |
| | Fail | Unresolv. | 1,351 | 4.9% | 2.66 | 26.23 | 2.95 | 0.93 | 8.85 | 0.97 | 65.2% | 66.3% | 67.3% |
| | Fail | Waiver | 493 | 1.8% | 3.19 | 32.65 | 2.82 | 2.39 | 23.44 | 2.46 | 25.1% | 28.2% | 12.9% |
| Total | Fail% | | 27,646 | 19.9% | 0.75 | 8.40 | 1.69 | 0.46 | 4.95 | 1.43 | 38.2% | 41.1% | 15.2% |
| 1992 | Pass | - | 28,300 | | 0.41 | 4.69 | 1.41 | 0.41 | 4.69 | 1.41 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 3,284 | 9.8% | 1.75 | 26.70 | 2.17 | 0.44 | 4.69 | 1.43 | 75.0% | 82.4% | 33.9% |
| | Fail | Unresolv. | 956 | 2.8% | 3.08 | 32.73 | 2.75 | 1.00 | 10.23 | 0.93 | 67.7% | 68.7% | 66.0% |
| | Fail | Waiver | 1,108 | 3.3% | 2.90 | 28.48 | 2.82 | 2.49 | 25.08 | 2.64 | 14.0% | 11.9% | 6.4% |
| Total | Fail% | | 33,648 | 15.9% | 0.70 | 8.42 | 1.57 | 0.50 | 5.52 | 1.44 | 28.6% | 34.4% | 8.3% |
| 1993 | Pass | - | 30,360 | | 0.37 | 4.08 | 1.35 | 0.37 | 4.08 | 1.35 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 3,188 | 9.2% | 1.72 | 22.95 | 2.34 | 0.41 | 4.18 | 1.41 | 76.1% | 81.8% | 39.7% |
| | Fail | Unresolv. | 893 | 2.6% | 2.79 | 29.32 | 2.69 | 0.91 | 9.32 | 0.91 | 67.5% | 68.2% | 66.1% |
| | Fail | Waiver | 273 | 0.8% | 3.38 | 30.84 | 2.78 | 2.19 | 22.24 | 2.29 | 35.1% | 27.9% | 17.5% |
| Total | Fail% | | 34,714 | 12.5% | 0.58 | 6.67 | 1.48 | 0.40 | 4.37 | 1.35 | 30.7% | 34.6% | 9.1% |

# Appendix D1 IM240 Test Emissions Reductions

Unresolved fails remaining in area 33%

| Model Year/Type | First Result | Last Result | Vehicles | | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 | Pass | - | 36,292 | | 0.34 | 3.58 | 1.10 | 0.34 | 3.58 | 1.10 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 2,285 | 5.8% | 1.55 | 17.45 | 1.91 | 0.40 | 3.99 | 1.27 | 73.9% | 77.1% | 33.5% |
| | Fail | Unresolv. | 481 | 1.2% | 3.05 | 26.99 | 2.58 | 1.03 | 9.38 | 0.85 | 66.4% | 65.2% | 67.2% |
| | Fail | Waiver | 519 | 1.3% | 3.07 | 25.53 | 2.69 | 2.36 | 21.38 | 2.51 | 23.2% | 16.3% | 6.6% |
| Total | Fail% | | 39,577 | 8.3% | 0.48 | 4.96 | 1.19 | 0.38 | 3.91 | 1.13 | 21.0% | 21.1% | 5.1% |
| 1995 | Pass | - | 39,688 | | 0.26 | 2.74 | 0.91 | 0.26 | 2.74 | 0.91 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 1,913 | 4.5% | 1.55 | 17.86 | 1.70 | 0.34 | 3.00 | 1.09 | 78.0% | 83.2% | 35.6% |
| | Fail | Unresolv. | 450 | 1.1% | 3.26 | 27.07 | 2.25 | 1.04 | 8.61 | 0.74 | 68.1% | 68.2% | 66.9% |
| | Fail | Waiver | 100 | 0.2% | 3.79 | 35.08 | 2.44 | 2.39 | 21.19 | 2.21 | 36.9% | 39.6% | 9.3% |
| Total | Fail% | | 42,151 | 5.8% | 0.36 | 3.77 | 0.97 | 0.28 | 2.86 | 0.92 | 22.5% | 24.0% | 4.6% |
| 1996 | Pass | - | 29,729 | | 0.20 | 2.25 | 0.69 | 0.20 | 2.25 | 0.69 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 1,089 | 3.5% | 0.87 | 14.09 | 1.25 | 0.23 | 2.90 | 0.85 | 73.8% | 79.4% | 32.1% |
| | Fail | Unresolv. | 185 | 0.6% | 1.91 | 24.86 | 2.00 | 0.63 | 8.17 | 0.65 | 66.9% | 67.1% | 67.4% |
| | Fail | Waiver | 188 | 0.6% | 1.52 | 19.78 | 2.22 | 1.51 | 19.75 | 2.17 | 1.0% | 0.2% | 2.5% |
| Total | Fail% | | 31,191 | 4.7% | 0.24 | 2.90 | 0.72 | 0.21 | 2.41 | 0.70 | 12.5% | 16.9% | 3.1% |
| 1997 | Pass | - | 8,069 | | 0.17 | 2.13 | 0.70 | 0.17 | 2.13 | 0.70 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 321 | 3.8% | 0.99 | 13.93 | 1.60 | 0.22 | 2.98 | 0.91 | 77.4% | 78.6% | 43.2% |
| | Fail | Unresolv. | 90 | 1.1% | 2.42 | 32.91 | 2.23 | 0.78 | 10.07 | 0.74 | 67.6% | 69.4% | 66.8% |
| | Fail | Waiver | 11 | 0.1% | 1.85 | 11.29 | 3.01 | 1.38 | 10.22 | 2.54 | 25.4% | 9.4% | 15.6% |
| Total | Fail% | | 8,491 | 5.0% | 0.23 | 2.91 | 0.75 | 0.18 | 2.25 | 0.71 | 20.6% | 22.6% | 5.7% |
| 1998 | Pass | - | 30,902 | | 0.13 | 1.73 | 0.47 | 0.13 | 1.73 | 0.47 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 611 | 1.9% | 0.43 | 8.70 | 0.81 | 0.14 | 2.35 | 0.57 | 66.1% | 73.0% | 29.5% |
| | Fail | Unresolv. | 43 | 0.1% | 1.49 | 30.22 | 1.68 | 0.48 | 9.37 | 0.55 | 68.0% | 69.0% | 67.4% |
| | Fail | Waiver | 23 | 0.1% | 3.65 | 23.10 | 1.95 | 1.07 | 12.17 | 1.91 | 70.7% | 47.3% | 1.7% |
| Total | Fail% | | 31,579 | 2.1% | 0.14 | 1.92 | 0.48 | 0.13 | 1.76 | 0.47 | 6.1% | 8.3% | 1.3% |
| 1999 | Pass | - | 8,830 | | 0.10 | 1.38 | 0.41 | 0.10 | 1.38 | 0.41 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 186 | 2.1% | 0.31 | 5.62 | 0.69 | 0.11 | 1.89 | 0.52 | 63.1% | 66.4% | 24.6% |
| | Fail | Unresolv. | 23 | 0.3% | 2.31 | 14.76 | 1.86 | 0.81 | 4.99 | 0.70 | 65.1% | 66.2% | 62.2% |
| | Fail | Waiver | 3 | 0.0% | 16.61 | 222.39 | 2.31 | 11.66 | 159.91 | 1.23 | 29.8% | 28.1% | 46.6% |
| Total | Fail% | | 9,042 | 2.3% | 0.12 | 1.58 | 0.42 | 0.11 | 1.46 | 0.42 | 8.1% | 7.7% | 1.6% |
| 2000 | Pass | - | 38,233 | | 0.07 | 0.89 | 0.29 | 0.07 | 0.89 | 0.29 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 647 | 211.4% | 0.24 | 4.63 | 0.48 | 0.07 | 1.15 | 0.33 | 69.3% | 75.1% | 30.6% |
| | Fail | Unresolv. | 16 | 5.2% | 1.12 | 18.36 | 1.02 | 0.37 | 6.06 | 0.34 | 67.0% | 67.0% | 67.0% |
| | Fail | Waiver | 1 | 0.3% | 0.22 | 16.76 | 0.29 | 0.99 | 30.25 | 0.85 | -348.9% | -80.5% | -192.0% |
| Total | Fail% | | 38,897 | 217.0% | 0.07 | 0.96 | 0.29 | 0.07 | 0.90 | 0.29 | 4.4% | 6.5% | 0.9% |
| 2001 | Pass | - | 9,091 | | 0.03 | 0.52 | 0.18 | 0.03 | 0.52 | 0.18 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 89 | 2.1% | 0.23 | 3.54 | 0.49 | 0.05 | 0.74 | 0.22 | 77.4% | 79.1% | 55.7% |
| | Fail | Unresolv. | 5 | 0.1% | 0.60 | 6.76 | 1.68 | 0.20 | 2.23 | 0.56 | 67.0% | 67.0% | 67.0% |
| | Fail | Waiver | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Total | Fail% | | 9,185 | 2.2% | 0.04 | 0.56 | 0.18 | 0.03 | 0.53 | 0.18 | 5.3% | 5.3% | 1.8% |
| 2002 | Pass | - | 4,224 | | 0.03 | 0.42 | 0.13 | 0.03 | 0.42 | 0.13 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 27 | 0.6% | 0.06 | 1.08 | 0.12 | 0.05 | 0.50 | 0.11 | 16.5% | 53.9% | 11.2% |
| | Fail | Unresolv. | 2 | 0.0% | 0.00 | 0.07 | 0.02 | 0.00 | 0.02 | 0.01 | 67.0% | 67.0% | 67.0% |
| | Fail | Waiver | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Total | Fail% | | 4,253 | 0.7% | 0.03 | 0.43 | 0.13 | 0.03 | 0.42 | 0.13 | 0.2% | 0.9% | 0.1% |
| 2003 | Pass | - | 304 | | 0.02 | 0.32 | 0.12 | 0.02 | 0.32 | 0.12 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 1 | 12.5% | 10.28 | 85.36 | 0.02 | 0.15 | 1.70 | 0.24 | 98.5% | 98.0% | -1405.3% |
| | Fail | Unresolv. | 1 | 12.5% | 0.03 | 0.41 | 0.02 | 0.01 | 0.14 | 0.01 | 67.0% | 67.0% | 67.0% |
| | Fail | Waiver | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Total | Fail% | | 306 | 25.0% | 0.06 | 0.60 | 0.12 | 0.02 | 0.33 | 0.12 | 58.3% | 45.5% | -0.5% |
| 2004 | Pass | - | 8 | | 0.05 | 0.26 | 0.35 | 0.05 | 0.26 | 0.35 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| | Fail | Unresolv. | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| | Fail | Waiver | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Total | Fail% | | 8 | 0.0% | 0.05 | 0.26 | 0.35 | 0.05 | 0.26 | 0.35 | 0.0% | 0.0% | 0.0% |
| **Total Passenger Vehicles** | | | | | | | | | | | | | |
| All | Pass | - | 357,673 | | 0.28 | 3.11 | 0.99 | 0.28 | 3.11 | 0.99 | 0.0% | 0.0% | 0.0% |
| P | Fail | Pass | 35,489 | 8.5% | 1.70 | 21.52 | 2.38 | 0.40 | 3.99 | 1.38 | 76.3% | 81.5% | 42.0% |
| | Fail | Unresolv. | 14,735 | 3.5% | 3.13 | 34.64 | 2.83 | 1.04 | 11.44 | 0.93 | 66.8% | 67.0% | 67.1% |
| | Fail | Waiver | 10,297 | 2.5% | 3.16 | 35.99 | 2.93 | 2.58 | 29.63 | 2.64 | 18.3% | 17.7% | 10.1% |
| Total | Fail% | | 418,194 | 14.5% | 0.57 | 6.59 | 1.22 | 0.38 | 4.13 | 1.06 | 34.4% | 37.3% | 13.0% |
| 1981 | Pass | - | 358 | | 1.53 | 18.26 | 3.12 | 1.53 | 18.26 | 3.12 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 115 | 22.2% | 4.13 | 56.02 | 2.96 | 1.60 | 21.61 | 2.52 | 61.3% | 61.4% | 15.1% |
| | Fail | Unresolv. | 36 | 7.0% | 9.37 | 88.25 | 3.23 | 2.98 | 28.41 | 0.99 | 68.2% | 67.8% | 69.5% |
| | Fail | Waiver | 8 | 1.5% | 12.89 | 113.89 | 2.15 | 9.55 | 92.48 | 2.43 | 25.9% | 18.8% | -13.1% |
| Total | Fail% | | 517 | 30.8% | 2.83 | 33.02 | 3.08 | 1.77 | 20.86 | 2.83 | 37.4% | 36.8% | 8.2% |

# Appendix D1 IM240 Test Emissions Reductions

Unresolved fails remaining in area 33%

| Model Year/Type | First Result | Last Result | Vehicles | | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 | Pass | - | 645 | | 1.60 | 18.58 | 2.83 | 1.60 | 18.58 | 2.83 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 173 | 18.7% | 5.13 | 56.43 | 2.87 | 1.65 | 20.66 | 2.81 | 67.9% | 63.4% | 1.9% |
| | Fail | Unresolv. | 60 | 6.5% | 7.67 | 93.31 | 3.83 | 2.44 | 30.22 | 1.18 | 68.2% | 67.6% | 69.2% |
| | Fail | Waiver | 49 | 5.3% | 8.42 | 93.29 | 2.97 | 7.93 | 95.52 | 2.82 | 5.9% | -2.4% | 5.0% |
| Total | Fail% | | 927 | 30.4% | 3.01 | 34.43 | 2.91 | 2.00 | 23.79 | 2.72 | 33.7% | 30.9% | 6.5% |
| 1983 | Pass | - | 920 | | 1.58 | 18.62 | 2.68 | 1.58 | 18.62 | 2.68 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 224 | 17.9% | 4.79 | 57.21 | 2.83 | 1.74 | 21.04 | 2.40 | 63.8% | 63.2% | 15.0% |
| | Fail | Unresolv. | 87 | 7.0% | 7.32 | 78.09 | 3.57 | 2.50 | 26.08 | 1.17 | 65.9% | 66.6% | 67.4% |
| | Fail | Waiver | 18 | 1.4% | 10.79 | 104.03 | 2.80 | 6.51 | 78.05 | 2.36 | 39.6% | 25.0% | 15.6% |
| Total | Fail% | | 1,249 | 26.3% | 2.69 | 30.91 | 2.77 | 1.74 | 20.43 | 2.52 | 35.2% | 33.9% | 9.0% |
| 1984 | Pass | - | 1,303 | | 0.88 | 9.94 | 2.52 | 0.88 | 9.94 | 2.52 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 526 | 21.4% | 3.48 | 45.50 | 3.04 | 0.89 | 10.98 | 2.30 | 74.5% | 75.9% | 24.3% |
| | Fail | Unresolv. | 294 | 12.0% | 5.95 | 70.43 | 3.23 | 2.02 | 22.19 | 1.09 | 66.0% | 68.5% | 66.2% |
| | Fail | Waiver | 337 | 13.7% | 6.02 | 71.60 | 3.02 | 5.23 | 70.74 | 2.95 | 13.2% | 1.2% | 2.4% |
| Total | Fail% | | 2,460 | 47.0% | 2.75 | 33.22 | 2.79 | 1.61 | 19.96 | 2.36 | 41.2% | 39.9% | 15.2% |
| 1985 | Pass | - | 1,617 | | 0.83 | 9.38 | 2.40 | 0.83 | 9.38 | 2.40 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 736 | 24.8% | 3.42 | 44.74 | 3.03 | 0.79 | 8.34 | 2.03 | 76.9% | 81.3% | 33.1% |
| | Fail | Unresolv. | 469 | 15.8% | 5.73 | 69.04 | 3.13 | 1.85 | 23.03 | 1.02 | 67.8% | 66.6% | 67.3% |
| | Fail | Waiver | 141 | 4.8% | 6.59 | 76.72 | 2.91 | 4.23 | 57.68 | 2.69 | 35.8% | 24.8% | 7.5% |
| Total | Fail% | | 2,963 | 45.4% | 2.52 | 30.81 | 2.70 | 1.14 | 13.58 | 2.10 | 54.7% | 55.9% | 22.0% |
| 1986 | Pass | - | 3,293 | | 0.88 | 8.56 | 2.42 | 0.88 | 8.56 | 2.42 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 835 | 16.4% | 3.44 | 38.08 | 2.99 | 0.88 | 9.04 | 2.33 | 74.4% | 76.3% | 22.1% |
| | Fail | Unresolv. | 450 | 8.9% | 5.54 | 60.68 | 3.24 | 1.72 | 19.86 | 1.08 | 69.0% | 67.3% | 66.7% |
| | Fail | Waiver | 504 | 9.9% | 5.50 | 65.25 | 2.91 | 4.70 | 59.00 | 2.87 | 14.6% | 9.6% | 1.3% |
| Total | Fail% | | 5,082 | 35.2% | 2.17 | 23.65 | 2.64 | 1.33 | 14.64 | 2.33 | 38.6% | 38.1% | 11.5% |
| 1987 | Pass | - | 3,898 | | 0.81 | 7.24 | 2.44 | 0.81 | 7.24 | 2.44 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 825 | 15.8% | 3.31 | 36.05 | 3.23 | 0.79 | 7.42 | 2.24 | 76.1% | 79.4% | 30.6% |
| | Fail | Unresolv. | 342 | 6.5% | 4.57 | 54.34 | 3.13 | 1.54 | 18.68 | 1.01 | 66.4% | 65.6% | 67.6% |
| | Fail | Waiver | 163 | 3.1% | 6.04 | 71.72 | 2.96 | 4.41 | 53.89 | 2.62 | 27.0% | 24.9% | 11.5% |
| Total | Fail% | | 5,228 | 25.4% | 1.61 | 16.87 | 2.63 | 0.97 | 9.47 | 2.32 | 40.2% | 43.9% | 11.6% |
| 1988 | Pass | - | 6,508 | | 0.87 | 8.01 | 2.37 | 0.87 | 8.01 | 2.37 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 1,047 | 12.5% | 3.11 | 26.24 | 3.89 | 0.86 | 6.75 | 2.47 | 72.4% | 74.3% | 36.5% |
| | Fail | Unresolv. | 380 | 4.6% | 5.25 | 38.99 | 4.18 | 1.69 | 13.07 | 1.37 | 67.8% | 66.5% | 67.3% |
| | Fail | Waiver | 412 | 4.9% | 4.83 | 40.00 | 3.93 | 4.31 | 38.85 | 3.61 | 10.9% | 2.9% | 8.2% |
| Total | Fail% | | 8,347 | 22.0% | 1.55 | 13.29 | 2.72 | 1.08 | 9.61 | 2.40 | 30.4% | 27.7% | 11.8% |
| 1989 | Pass | - | 6,963 | | 0.86 | 8.03 | 2.27 | 0.86 | 8.03 | 2.27 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 1,155 | 13.4% | 3.31 | 32.77 | 3.80 | 0.85 | 6.85 | 2.35 | 74.2% | 79.1% | 38.2% |
| | Fail | Unresolv. | 393 | 4.5% | 5.74 | 50.19 | 3.80 | 1.90 | 15.96 | 1.27 | 66.9% | 68.2% | 66.4% |
| | Fail | Waiver | 128 | 1.5% | 5.36 | 56.87 | 3.56 | 4.13 | 42.41 | 3.16 | 23.1% | 25.4% | 11.2% |
| Total | Fail% | | 8,639 | 19.4% | 1.48 | 13.98 | 2.56 | 0.96 | 8.74 | 2.25 | 35.2% | 37.5% | 12.3% |
| 1990 | Pass | - | 8,555 | | 0.87 | 8.10 | 2.35 | 0.87 | 8.10 | 2.35 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 1,102 | 10.7% | 2.70 | 29.24 | 3.55 | 0.90 | 7.37 | 2.44 | 66.8% | 74.8% | 31.4% |
| | Fail | Unresolv. | 287 | 2.8% | 5.02 | 52.49 | 3.71 | 1.61 | 17.50 | 1.23 | 68.0% | 66.7% | 67.0% |
| | Fail | Waiver | 321 | 3.1% | 4.92 | 52.90 | 3.61 | 4.65 | 42.00 | 3.58 | 5.5% | 20.6% | 0.8% |
| Total | Fail% | | 10,265 | 16.7% | 1.31 | 13.01 | 2.55 | 1.01 | 9.34 | 2.36 | 22.7% | 28.2% | 7.4% |
| 1991 | Pass | - | 10,016 | | 0.77 | 7.50 | 2.04 | 0.77 | 7.50 | 2.04 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 1,098 | 9.6% | 3.10 | 33.68 | 3.23 | 0.82 | 6.75 | 2.01 | 73.6% | 80.0% | 37.7% |
| | Fail | Unresolv. | 249 | 2.2% | 4.93 | 49.65 | 3.34 | 1.62 | 16.82 | 1.14 | 67.1% | 66.1% | 65.7% |
| | Fail | Waiver | 81 | 0.7% | 5.37 | 46.13 | 3.34 | 5.00 | 41.20 | 2.90 | 6.8% | 10.7% | 13.3% |
| Total | Fail% | | 11,444 | 12.5% | 1.12 | 11.20 | 2.19 | 0.82 | 7.87 | 2.02 | 26.2% | 29.8% | 7.7% |
| 1992 | Pass | - | 13,376 | | 0.82 | 7.85 | 2.21 | 0.82 | 7.85 | 2.21 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 1,292 | 8.4% | 2.92 | 28.84 | 3.24 | 0.91 | 7.72 | 2.22 | 68.9% | 73.2% | 31.6% |
| | Fail | Unresolv. | 264 | 1.7% | 4.07 | 35.74 | 3.65 | 1.46 | 12.16 | 1.20 | 64.1% | 66.0% | 67.2% |
| | Fail | Waiver | 399 | 2.6% | 4.82 | 39.07 | 3.44 | 4.10 | 33.89 | 3.29 | 14.9% | 13.3% | 4.4% |
| Total | Fail% | | 15,331 | 12.8% | 1.15 | 10.91 | 2.36 | 0.92 | 8.59 | 2.22 | 20.2% | 21.3% | 5.6% |
| 1993 | Pass | - | 15,121 | | 0.76 | 6.87 | 2.21 | 0.76 | 6.87 | 2.21 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 1,271 | 7.6% | 2.86 | 29.11 | 3.31 | 0.83 | 6.69 | 2.05 | 71.1% | 77.0% | 38.2% |
| | Fail | Unresolv. | 237 | 1.4% | 4.16 | 38.08 | 3.56 | 1.43 | 12.56 | 1.18 | 65.7% | 67.0% | 67.0% |
| | Fail | Waiver | 75 | 0.4% | 6.44 | 53.83 | 3.00 | 4.86 | 42.34 | 2.51 | 24.5% | 21.3% | 16.2% |
| Total | Fail% | | 16,704 | 9.5% | 0.99 | 9.22 | 2.32 | 0.79 | 7.10 | 2.19 | 20.2% | 23.0% | 5.7% |
| 1994 | Pass | - | 20,479 | | 0.72 | 6.79 | 1.90 | 0.72 | 6.79 | 1.90 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 1,099 | 5.0% | 2.44 | 21.44 | 3.36 | 0.82 | 7.08 | 2.10 | 66.3% | 67.0% | 37.5% |
| | Fail | Unresolv. | 151 | 0.7% | 4.32 | 28.59 | 3.80 | 1.50 | 9.32 | 1.28 | 65.2% | 67.4% | 66.4% |
| | Fail | Waiver | 266 | 1.2% | 3.60 | 28.07 | 4.58 | 3.48 | 26.32 | 4.49 | 3.5% | 6.2% | 2.0% |
| Total | Fail% | | 21,995 | 6.9% | 0.86 | 7.93 | 2.02 | 0.76 | 7.06 | 1.94 | 11.8% | 11.0% | 4.0% |

# Appendix D1 IM240 Test Emissions Reductions

Unresolved fails remaining in area 33%

| Model Year/Type | First Result | Last Result | Vehicles | | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 | Pass | - | 20,527 | | 0.61 | 6.25 | 1.86 | 0.61 | 6.25 | 1.86 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 1,220 | 5.6% | 2.30 | 19.39 | 3.38 | 0.71 | 6.50 | 1.95 | 69.2% | 66.5% | 42.2% |
| | Fail | Unresolv. | 160 | 0.7% | 4.07 | 31.20 | 4.02 | 1.30 | 9.84 | 1.30 | 68.1% | 68.5% | 67.7% |
| | Fail | Waiver | 61 | 0.3% | 4.48 | 29.68 | 3.65 | 3.43 | 22.17 | 2.79 | 23.4% | 25.3% | 23.6% |
| Total | Fail% | | 21,968 | 6.6% | 0.74 | 7.23 | 1.97 | 0.63 | 6.34 | 1.87 | 15.0% | 12.3% | 5.2% |
| 1996 | Pass | - | 15,411 | | 0.28 | 3.43 | 1.10 | 0.28 | 3.43 | 1.10 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 625 | 3.8% | 0.84 | 13.08 | 2.63 | 0.30 | 3.89 | 1.45 | 64.6% | 70.2% | 44.9% |
| | Fail | Unresolv. | 79 | 0.5% | 2.06 | 16.86 | 4.00 | 0.63 | 5.83 | 1.33 | 69.2% | 65.4% | 66.7% |
| | Fail | Waiver | 124 | 0.8% | 1.54 | 17.34 | 4.52 | 1.80 | 20.67 | 4.39 | -17.0% | -19.2% | 2.8% |
| Total | Fail% | | 16,239 | 5.1% | 0.32 | 3.97 | 1.20 | 0.30 | 3.59 | 1.14 | 8.0% | 9.6% | 5.0% |
| 1997 | Pass | - | 4,239 | | 0.25 | 3.52 | 1.13 | 0.25 | 3.52 | 1.13 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 193 | 4.3% | 1.00 | 15.83 | 2.25 | 0.26 | 3.65 | 1.32 | 74.2% | 77.0% | 41.3% |
| | Fail | Unresolv. | 36 | 0.8% | 1.69 | 20.41 | 3.70 | 0.59 | 6.87 | 1.30 | 65.1% | 66.4% | 64.8% |
| | Fail | Waiver | 13 | 0.3% | 4.42 | 39.92 | 3.44 | 2.07 | 37.83 | 2.97 | 53.2% | 5.2% | 13.7% |
| Total | Fail% | | 4,481 | 5.4% | 0.30 | 4.30 | 1.21 | 0.26 | 3.66 | 1.15 | 15.7% | 14.9% | 5.0% |
| 1998 | Pass | - | 20,471 | | 0.19 | 2.56 | 0.89 | 0.19 | 2.56 | 0.89 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 350 | 1.7% | 0.50 | 8.70 | 2.03 | 0.20 | 3.11 | 1.09 | 59.8% | 64.2% | 46.4% |
| | Fail | Unresolv. | 24 | 0.1% | 1.02 | 11.27 | 3.77 | 0.33 | 3.80 | 1.28 | 67.7% | 66.3% | 66.1% |
| | Fail | Waiver | 23 | 0.1% | 1.15 | 14.56 | 4.89 | 1.07 | 12.30 | 4.32 | 7.4% | 15.5% | 11.7% |
| Total | Fail% | | 20,868 | 1.9% | 0.20 | 2.69 | 0.91 | 0.19 | 2.58 | 0.89 | 3.0% | 3.9% | 2.1% |
| 1999 | Pass | - | 6,063 | | 0.15 | 1.85 | 0.70 | 0.15 | 1.85 | 0.70 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 67 | 1.1% | 0.77 | 8.68 | 1.43 | 0.16 | 2.21 | 0.74 | 79.0% | 74.5% | 48.0% |
| | Fail | Unresolv. | 9 | 0.1% | 5.47 | 58.46 | 3.12 | 1.62 | 16.19 | 1.00 | 70.4% | 72.3% | 67.8% |
| | Fail | Waiver | 2 | 0.0% | 2.37 | 13.37 | 2.45 | 1.36 | 13.41 | 0.69 | 42.6% | -0.3% | 71.7% |
| Total | Fail% | | 6,141 | 1.3% | 0.17 | 2.01 | 0.71 | 0.15 | 1.87 | 0.70 | 7.6% | 6.6% | 1.6% |
| 2000 | Pass | - | 24,786 | | 0.10 | 1.27 | 0.49 | 0.10 | 1.27 | 0.49 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 391 | 1.6% | 0.26 | 3.20 | 0.92 | 0.13 | 1.92 | 0.72 | 47.9% | 40.0% | 21.4% |
| | Fail | Unresolv. | 7 | 0.0% | 0.34 | 8.58 | 2.04 | 0.13 | 3.06 | 0.74 | 62.6% | 64.3% | 63.8% |
| | Fail | Waiver | 0 | 0.0% | | | | | | | | | |
| Total | Fail% | | 25,184 | 1.6% | 0.11 | 1.30 | 0.50 | 0.11 | 1.28 | 0.49 | 1.8% | 1.6% | 0.7% |
| 2001 | Pass | - | 4,021 | | 0.05 | 0.87 | 0.27 | 0.05 | 0.87 | 0.27 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 74 | 1.8% | 0.10 | 2.38 | 0.59 | 0.06 | 1.20 | 0.47 | 36.8% | 49.5% | 20.4% |
| | Fail | Unresolv. | 4 | 0.1% | 0.54 | 3.40 | 0.62 | 0.18 | 1.12 | 0.20 | 67.0% | 67.0% | 67.0% |
| | Fail | Waiver | 0 | 0.0% | | | | | | | | | |
| Total | Fail% | | 4,099 | 1.9% | 0.06 | 0.90 | 0.28 | 0.05 | 0.88 | 0.27 | 1.8% | 2.6% | 0.9% |
| 2002 | Pass | - | 2,127 | | 0.04 | 0.77 | 0.25 | 0.04 | 0.77 | 0.25 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 18 | 0.8% | 0.11 | 1.87 | 0.58 | 0.04 | 1.04 | 0.21 | 63.3% | 44.1% | 63.2% |
| | Fail | Unresolv. | 1 | 0.0% | 0.09 | 1.28 | 0.69 | 0.03 | 0.42 | 0.23 | 67.0% | 67.0% | 67.0% |
| | Fail | Waiver | 0 | 0.0% | | | | | | | | | |
| Total | Fail% | | 2,146 | 0.9% | 0.04 | 0.78 | 0.25 | 0.04 | 0.78 | 0.25 | 1.4% | 0.9% | 1.3% |
| 2003 | Pass | - | 101 | | 0.04 | 0.59 | 0.20 | 0.04 | 0.59 | 0.20 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 0 | 0.0% | | | | | | | | | |
| | Fail | Unresolv. | 0 | 0.0% | | | | | | | | | |
| | Fail | Waiver | 0 | 0.0% | | | | | | | | | |
| Total | Fail% | | 101 | 0.0% | 0.04 | 0.59 | 0.20 | 0.04 | 0.59 | 0.20 | 0.0% | 0.0% | 0.0% |
| 2004 | Pass | - | 0 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| T | Fail | Pass | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| | Fail | Unresolv. | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| | Fail | Waiver | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Total | Fail% | | 0 | 0.0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0% | 0.0% | 0.0% |
| **Total Trucks** | | | | | | | | | | | | | |
| All | Pass | - | 190,798 | | 0.53 | 5.33 | 1.57 | 0.53 | 5.33 | 1.57 | 0.0% | 0.0% | 0.0% |
| T | Fail | Pass | 14,436 | 6.8% | 2.76 | 29.08 | 3.18 | 0.79 | 7.36 | 2.08 | 71.3% | 74.7% | 34.4% |
| | Fail | Unresolv. | 4,019 | 1.9% | 5.10 | 51.56 | 3.53 | 1.68 | 17.01 | 1.17 | 67.2% | 67.0% | 66.9% |
| | Fail | Waiver | 3,125 | 1.5% | 5.13 | 52.25 | 3.47 | 4.37 | 46.08 | 3.29 | 14.9% | 11.8% | 5.4% |
| Total | Fail% | | 212,378 | 10.2% | 0.84 | 8.51 | 1.75 | 0.63 | 6.29 | 1.62 | 25.1% | 26.1% | 7.0% |
| **Fleet Total** | | | | | | | | | | | | | |
| All | Pass | - | 548,471 | | 0.37 | 3.88 | 1.19 | 0.37 | 3.88 | 1.19 | 0.0% | 0.0% | 0.0% |
| All | Fail | Pass | 49,925 | 7.9% | 2.00 | 23.70 | 2.61 | 0.51 | 4.97 | 1.58 | 74.3% | 79.1% | 39.3% |
| | Fail | Unresolv. | 18,754 | 3.0% | 3.55 | 38.27 | 2.98 | 1.18 | 12.63 | 0.98 | 66.9% | 67.0% | 67.1% |
| | Fail | Waiver | 13,422 | 2.1% | 3.62 | 39.78 | 3.06 | 2.99 | 33.46 | 2.79 | 17.2% | 15.9% | 8.9% |
| Total | Fail% | | 630,572 | 13.0% | 0.66 | 7.24 | 1.40 | 0.46 | 4.86 | 1.25 | 30.4% | 32.9% | 10.5% |

# Appendix D2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area 33%

| Model Year/Type | First Result | Last Result | Vehicles | Fail% | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | Pass | - | 8,075 | | 222.29 | 1.45 | - | 222.29 | 1.45 | - | - | - | - |
| P | Fail | Pass | 864 | 9.0% | 1,199.82 | 4.51 | - | 296.89 | 2.27 | - | 75.3% | 49.7% | - |
| | Fail | Unresolv. | 416 | 4.3% | 1,443.45 | 4.11 | - | 467.33 | 1.32 | - | 67.6% | 68.0% | - |
| | Fail | Waiver | 266 | 2.8% | 1,600.79 | 4.25 | - | 1,533.13 | 4.12 | - | 4.2% | 3.2% | - |
| Total | Fail% | | 9,621 | 16.1% | 400.99 | 1.91 | - | 275.83 | 1.59 | - | 31.2% | 17.0% | - |
| 1982 | Pass | - | 70 | | 81.99 | 0.15 | - | 81.99 | 0.15 | - | - | - | - |
| P | Fail | Pass | 20 | 18.0% | 371.45 | 1.03 | - | 86.00 | 0.18 | - | 76.8% | 82.8% | - |
| | Fail | Unresolv. | 12 | 10.8% | 999.58 | 1.50 | - | 298.79 | 0.55 | - | 70.1% | 63.5% | - |
| | Fail | Waiver | 9 | 8.1% | 698.67 | 3.26 | - | 340.56 | 4.26 | - | 51.3% | -30.6% | - |
| Total | Fail% | | 111 | 36.9% | 283.34 | 0.70 | - | 127.11 | 0.53 | - | 55.1% | 24.9% | - |
| 1983 | Pass | - | 78 | | 90.15 | 0.19 | - | 90.15 | 0.19 | - | - | - | - |
| P | Fail | Pass | 20 | 16.1% | 383.55 | 0.96 | - | 112.10 | 0.30 | - | 70.8% | 69.2% | - |
| | Fail | Unresolv. | 19 | 15.3% | 643.63 | 3.29 | - | 238.47 | 1.01 | - | 62.9% | 69.3% | - |
| | Fail | Waiver | 7 | 5.6% | 1,300.71 | 2.80 | - | 1,104.00 | 3.82 | - | 15.1% | -36.4% | - |
| Total | Fail% | | 124 | 37.1% | 290.62 | 0.94 | - | 173.65 | 0.54 | - | 40.2% | 42.5% | - |
| 1984 | Pass | - | 246 | | 77.82 | 0.14 | - | 77.82 | 0.14 | - | - | - | - |
| P | Fail | Pass | 39 | 11.4% | 535.23 | 2.66 | - | 111.08 | 0.29 | - | 79.2% | 89.2% | - |
| | Fail | Unresolv. | 33 | 9.6% | 828.21 | 2.34 | - | 268.99 | 0.76 | - | 67.5% | 67.6% | - |
| | Fail | Waiver | 25 | 7.3% | 1,278.96 | 2.96 | - | 1,396.20 | 2.40 | - | -9.2% | 18.9% | - |
| Total | Fail% | | 343 | 28.3% | 289.57 | 0.84 | - | 196.08 | 0.38 | - | 32.3% | 54.8% | - |
| 1985 | Pass | - | 167 | | 88.54 | 0.16 | - | 88.54 | 0.16 | - | - | - | - |
| P | Fail | Pass | 20 | 9.0% | 259.80 | 1.64 | - | 92.95 | 0.22 | - | 64.2% | 86.8% | - |
| | Fail | Unresolv. | 26 | 11.8% | 642.69 | 3.75 | - | 205.82 | 1.10 | - | 68.0% | 70.7% | - |
| | Fail | Waiver | 8 | 3.6% | 1,100.38 | 2.87 | - | 787.00 | 2.36 | - | 28.5% | 17.9% | - |
| Total | Fail% | | 221 | 24.4% | 205.86 | 0.82 | - | 128.02 | 0.36 | - | 37.8% | 56.3% | - |
| 1986 | Pass | - | 267 | | 89.30 | 0.17 | - | 89.30 | 0.17 | - | - | - | - |
| P | Fail | Pass | 45 | 12.1% | 436.29 | 1.35 | - | 110.16 | 0.23 | - | 74.8% | 82.6% | - |
| | Fail | Unresolv. | 42 | 11.3% | 655.29 | 1.95 | - | 232.95 | 0.70 | - | 64.5% | 64.2% | - |
| | Fail | Waiver | 19 | 5.1% | 705.89 | 3.03 | - | 988.58 | 2.88 | - | -40.0% | 4.9% | - |
| Total | Fail% | | 373 | 28.4% | 226.30 | 0.66 | - | 153.80 | 0.37 | - | 32.0% | 43.1% | - |
| 1987 | Pass | - | 163 | | 96.36 | 0.16 | - | 96.36 | 0.16 | - | - | - | - |
| P | Fail | Pass | 23 | 10.3% | 449.52 | 0.82 | - | 135.74 | 0.46 | - | 69.8% | 43.5% | - |
| | Fail | Unresolv. | 31 | 13.8% | 795.94 | 1.39 | - | 261.76 | 0.46 | - | 67.1% | 67.3% | - |
| | Fail | Waiver | 7 | 3.1% | 3,290.43 | 2.68 | - | 1,479.29 | 1.37 | - | 55.0% | 49.0% | - |
| Total | Fail% | | 224 | 27.2% | 329.25 | 0.48 | - | 166.51 | 0.27 | - | 49.4% | 43.3% | - |
| 1988 | Pass | - | 361 | | 90.36 | 0.16 | - | 90.36 | 0.16 | - | - | - | - |
| P | Fail | Pass | 31 | 7.2% | 431.03 | 1.45 | - | 126.35 | 0.26 | - | 70.7% | 82.1% | - |
| | Fail | Unresolv. | 31 | 7.2% | 728.81 | 2.68 | - | 246.97 | 0.80 | - | 66.1% | 70.1% | - |
| | Fail | Waiver | 10 | 2.3% | 1,579.80 | 2.86 | - | 1,425.40 | 1.89 | - | 9.8% | 33.9% | - |
| Total | Fail% | | 433 | 16.6% | 194.86 | 0.50 | - | 134.98 | 0.26 | - | 30.7% | 48.6% | - |
| 1989 | Pass | - | 152 | | 69.34 | 0.13 | - | 69.34 | 0.13 | - | - | - | - |
| P | Fail | Pass | 23 | 12.0% | 620.09 | 0.92 | - | 100.83 | 0.15 | - | 83.7% | 84.0% | - |
| | Fail | Unresolv. | 15 | 7.8% | 767.13 | 1.59 | - | 253.37 | 0.54 | - | 67.0% | 65.9% | - |
| | Fail | Waiver | 2 | 1.0% | 304.00 | 0.46 | - | 346.00 | 1.44 | - | -13.8% | -212.0% | - |
| Total | Fail% | | 192 | 20.8% | 192.27 | 0.34 | - | 90.37 | 0.17 | - | 53.0% | 48.5% | - |
| 1990 | Pass | - | 364 | | 80.43 | 0.16 | - | 80.43 | 0.16 | - | - | - | - |
| P | Fail | Pass | 28 | 6.9% | 358.14 | 0.90 | - | 108.79 | 0.16 | - | 69.6% | 82.0% | - |
| | Fail | Unresolv. | 7 | 1.7% | 403.57 | 3.95 | - | 129.17 | 1.13 | - | 68.0% | 71.5% | - |
| | Fail | Waiver | 5 | 1.2% | 536.80 | 3.69 | - | 725.20 | 1.97 | - | -35.1% | 46.7% | - |
| Total | Fail% | | 404 | 9.9% | 110.93 | 0.32 | - | 91.22 | 0.20 | - | 17.8% | 37.8% | - |
| 1991 | Pass | - | 395 | | 70.82 | 0.13 | - | 70.82 | 0.13 | - | - | - | - |
| P | Fail | Pass | 24 | 5.5% | 369.00 | 1.09 | - | 118.29 | 0.18 | - | 67.9% | 83.5% | - |
| | Fail | Unresolv. | 16 | 3.7% | 700.19 | 2.65 | - | 231.06 | 0.87 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 1 | 0.2% | 228.00 | 4.83 | - | 68.00 | 0.21 | - | 70.2% | 95.7% | - |
| Total | Fail% | | 436 | 9.4% | 110.69 | 0.28 | - | 79.31 | 0.16 | - | 28.4% | 44.6% | - |
| 1992 | Pass | - | 637 | | 73.67 | 0.15 | - | 73.67 | 0.15 | - | - | - | - |
| P | Fail | Pass | 33 | 4.8% | 279.06 | 0.88 | - | 65.27 | 0.10 | - | 76.6% | 89.1% | - |
| | Fail | Unresolv. | 15 | 2.2% | 512.87 | 2.49 | - | 186.43 | 0.84 | - | 63.6% | 66.4% | - |
| | Fail | Waiver | 6 | 0.9% | 331.50 | 1.52 | - | 317.17 | 1.55 | - | 4.3% | -2.2% | - |
| Total | Fail% | | 691 | 7.8% | 95.25 | 0.24 | - | 77.83 | 0.17 | - | 18.3% | 30.1% | - |
| 1993 | Pass | - | 646 | | 66.30 | 0.11 | - | 66.30 | 0.11 | - | - | - | - |
| P | Fail | Pass | 19 | 2.8% | 336.32 | 0.62 | - | 68.05 | 0.12 | - | 79.8% | 80.6% | - |
| | Fail | Unresolv. | 5 | 0.7% | 1,545.60 | 3.27 | - | 356.66 | 1.02 | - | 76.9% | 68.7% | - |
| | Fail | Waiver | 2 | 0.3% | 3,369.50 | 3.86 | - | 1,731.50 | 4.35 | - | 48.6% | -12.6% | - |
| Total | Fail% | | 672 | 3.9% | 94.77 | 0.16 | - | 73.46 | 0.13 | - | 22.5% | 18.2% | - |

# Appendix D2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area 33%

| Model Year/Type | First Result | Last Result | Vehicles | Fail% | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 | Pass | - | 1,112 | | 67.90 | 0.13 | - | 67.90 | 0.13 | - | - | - | - |
| P | Fail | Pass | 29 | 2.5% | 315.28 | 0.57 | - | 102.38 | 0.18 | - | 67.5% | 68.1% | - |
| | Fail | Unresolv. | 6 | 0.5% | 319.50 | 1.49 | - | 91.03 | 0.21 | - | 71.5% | 86.0% | - |
| | Fail | Waiver | 4 | 0.3% | 914.00 | 0.43 | - | 533.00 | 0.40 | - | 41.7% | 6.9% | - |
| Total | Fail% | | 1,151 | 3.4% | 78.38 | 0.15 | - | 70.50 | 0.13 | - | 10.1% | 11.0% | - |
| 1995 | Pass | - | 901 | | 45.93 | 0.08 | - | 45.93 | 0.08 | - | - | - | - |
| P | Fail | Pass | 25 | 2.7% | 243.92 | 1.33 | - | 98.32 | 0.18 | - | 59.7% | 86.3% | - |
| | Fail | Unresolv. | 6 | 0.6% | 902.50 | 2.24 | - | 264.33 | 0.60 | - | 70.7% | 73.2% | - |
| | Fail | Waiver | 1 | 0.1% | 404.00 | 0.84 | - | 615.00 | 0.36 | - | -52.2% | 57.1% | - |
| Total | Fail% | | 933 | 3.4% | 57.13 | 0.13 | - | 49.35 | 0.09 | - | 13.6% | 31.6% | - |
| 1996 | Pass | - | 668 | | 28.65 | 0.04 | - | 28.65 | 0.04 | - | - | - | - |
| P | Fail | Pass | 12 | 1.8% | 88.92 | 0.10 | - | 51.92 | 0.05 | - | 41.6% | 54.0% | - |
| | Fail | Unresolv. | 1 | 0.1% | 498.00 | 0.53 | - | 164.34 | 0.17 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 1 | 0.1% | 472.00 | 0.24 | - | 445.00 | 0.23 | - | 5.7% | 4.2% | - |
| Total | Fail% | | 682 | 2.1% | 31.05 | 0.04 | - | 29.87 | 0.04 | - | 3.8% | 3.4% | - |
| 1997 | Pass | - | 234 | | 38.70 | 0.06 | - | 38.70 | 0.06 | - | - | - | - |
| P | Fail | Pass | 3 | 1.3% | 174.00 | 1.25 | - | 33.33 | - | - | 80.8% | 100.0% | - |
| | Fail | Unresolv. | 1 | 0.4% | 29.00 | 0.02 | - | 15.18 | 0.01 | - | 47.7% | 67.0% | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 238 | 1.7% | 40.36 | 0.07 | - | 38.53 | 0.06 | - | 4.5% | 21.8% | - |
| 1998 | Pass | - | 556 | | 37.71 | 0.05 | - | 37.71 | 0.05 | - | - | - | - |
| P | Fail | Pass | 9 | 1.6% | 111.67 | 0.62 | - | 52.56 | 0.10 | - | 52.9% | 83.3% | - |
| | Fail | Unresolv. | 1 | 0.2% | 4,683.00 | 4.33 | - | 372.57 | 1.28 | - | 92.0% | 70.5% | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 566 | 1.8% | 47.09 | 0.07 | - | 38.54 | 0.05 | - | 18.2% | 20.0% | - |
| 1999 | Pass | - | 178 | | 23.92 | 0.03 | - | 23.92 | 0.03 | - | - | - | - |
| P | Fail | Pass | 2 | 1.1% | 104.50 | 1.08 | - | 12.50 | 0.00 | - | 88.0% | 99.5% | - |
| | Fail | Unresolv. | 1 | 0.6% | 2,467.00 | 8.19 | - | 814.11 | 2.70 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 181 | 1.7% | 38.30 | 0.09 | - | 28.16 | 0.04 | - | 26.5% | 48.5% | - |
| 2000 | Pass | - | 717 | | 21.04 | 0.02 | - | 21.04 | 0.02 | - | - | - | - |
| P | Fail | Pass | 7 | 1.0% | 183.29 | 1.07 | - | 103.43 | 0.12 | - | 43.6% | 89.2% | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 724 | 1.0% | 22.61 | 0.03 | - | 21.84 | 0.02 | - | 3.4% | 28.0% | - |
| 2001 | Pass | - | 235 | | 17.14 | 0.02 | - | 17.14 | 0.02 | - | - | - | - |
| P | Fail | Pass | 1 | 0.4% | 148.00 | 1.09 | - | 210.00 | 0.51 | - | -41.9% | 53.2% | - |
| | Fail | Unresolv. | 1 | 0.4% | 120.00 | 2.28 | - | 39.60 | 0.75 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 237 | 0.8% | 18.12 | 0.04 | - | 18.04 | 0.03 | - | 0.4% | 25.3% | - |
| 2002 | Pass | - | 86 | | 13.16 | 0.00 | - | 13.16 | 0.00 | - | - | - | - |
| P | Fail | Pass | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Unresolv. | 1 | 1.1% | 679.00 | 0.68 | - | 224.07 | 0.22 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 87 | 1.1% | 20.82 | 0.01 | - | 15.59 | 0.01 | - | 25.1% | 45.6% | - |
| 2003 | Pass | - | 17 | | 6.71 | 0.00 | - | 6.71 | 0.00 | - | - | - | - |
| P | Fail | Pass | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 17 | - | 6.71 | 0.00 | - | 6.71 | 0.00 | - | - | - | - |
| 2004 | Pass | - | 0 | | - | - | - | - | - | - | - | - | - |
| P | Fail | Pass | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 0 | - | - | - | - | - | - | - | - | - | - |
| **Total Passenger Vehicles** | | | | | | | | | | | | | |
| All | Pass | - | 16,325 | | 138.57 | 0.77 | 0.00 | 138.57 | 0.77 | 0.00 | 0.0% | 0.0% | - |
| P | Fail | Pass | 1,277 | 6.8% | 931.38 | 3.43 | 0.00 | 233.28 | 1.60 | 0.00 | 75.0% | 53.3% | - |
| | Fail | Unresolv. | 686 | 3.7% | 1166.61 | 3.44 | 0.00 | 377.62 | 1.10 | 0.00 | 67.6% | 68.1% | - |
| | Fail | Waiver | 373 | 2.0% | 1477.22 | 3.82 | 0.00 | 1383.76 | 3.63 | 0.00 | 6.3% | 4.9% | - |
| Total | Fail% | | 18,661 | 12.5% | 257.37 | 1.11 | 0.00 | 178.73 | 0.89 | 0.00 | 30.6% | 19.4% | - |
| 1981 | Pass | - | 3,663 | | 234.88 | 1.90 | - | 234.88 | 1.90 | - | - | - | - |
| T | Fail | Pass | 680 | 13.9% | 1,134.89 | 4.53 | - | 278.61 | 2.32 | - | 75.5% | 48.8% | - |
| | Fail | Unresolv. | 340 | 7.0% | 1,465.49 | 3.75 | - | 464.46 | 1.23 | - | 68.3% | 67.3% | - |
| | Fail | Waiver | 192 | 3.9% | 1,423.39 | 4.80 | - | 1,299.77 | 4.39 | - | 8.7% | 8.5% | - |
| Total | Fail% | | 4,875 | 24.9% | 493.05 | 2.51 | - | 298.93 | 2.01 | - | 39.4% | 19.9% | - |

# Appendix D2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area 33%

| Model Year/Type | First Result | Last Result | Vehicles | Fail% | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 | Pass | - | 45 | | 87.29 | 0.29 | - | 87.29 | 0.29 | - | - | - | - |
| T | Fail | Pass | 25 | 23.4% | 277.64 | 1.90 | - | 101.60 | 0.24 | - | 63.4% | 87.5% | - |
| | Fail | Unresolv. | 23 | 21.5% | 991.09 | 2.83 | - | 347.02 | 0.88 | - | 65.0% | 69.1% | - |
| | Fail | Waiver | 14 | 13.1% | 586.43 | 2.93 | - | 664.71 | 3.25 | - | -13.3% | -10.9% | - |
| Total | Fail% | | 107 | 57.9% | 391.35 | 1.56 | - | 222.01 | 0.79 | - | 43.3% | 49.2% | - |
| 1983 | Pass | - | 37 | | 79.30 | 0.28 | - | 79.30 | 0.28 | - | - | - | - |
| T | Fail | Pass | 21 | 22.6% | 392.57 | 1.87 | - | 100.62 | 0.18 | - | 74.4% | 90.4% | - |
| | Fail | Unresolv. | 29 | 31.2% | 950.69 | 3.04 | - | 284.45 | 0.97 | - | 70.1% | 68.2% | - |
| | Fail | Waiver | 6 | 6.5% | 1,505.17 | 3.47 | - | 1,173.17 | 3.92 | - | 22.1% | -13.1% | - |
| Total | Fail% | | 93 | 60.2% | 513.75 | 1.70 | - | 218.66 | 0.71 | - | 57.4% | 58.6% | - |
| 1984 | Pass | - | 145 | | 97.84 | 0.24 | - | 97.84 | 0.24 | - | - | - | - |
| T | Fail | Pass | 50 | 19.3% | 465.64 | 1.81 | - | 103.48 | 0.17 | - | 77.8% | 90.5% | - |
| | Fail | Unresolv. | 38 | 14.7% | 754.79 | 4.46 | - | 250.34 | 1.43 | - | 66.8% | 67.9% | - |
| | Fail | Waiver | 26 | 10.0% | 711.31 | 2.46 | - | 734.69 | 2.36 | - | -3.3% | 4.0% | - |
| Total | Fail% | | 259 | 44.0% | 326.81 | 1.38 | - | 185.24 | 0.61 | - | 43.3% | 55.7% | - |
| 1985 | Pass | - | 110 | | 88.94 | 0.22 | - | 88.94 | 0.22 | - | - | - | - |
| T | Fail | Pass | 33 | 16.8% | 399.48 | 2.30 | - | 110.00 | 0.30 | - | 72.5% | 86.9% | - |
| | Fail | Unresolv. | 43 | 21.8% | 787.33 | 2.06 | - | 274.97 | 0.84 | - | 65.1% | 59.3% | - |
| | Fail | Waiver | 11 | 5.6% | 960.64 | 1.15 | - | 770.73 | 0.95 | - | 19.8% | 17.4% | - |
| Total | Fail% | | 197 | 44.2% | 342.07 | 1.02 | - | 171.14 | 0.41 | - | 50.0% | 59.9% | - |
| 1986 | Pass | - | 259 | | 105.87 | 0.22 | - | 105.87 | 0.22 | - | - | - | - |
| T | Fail | Pass | 76 | 18.2% | 537.92 | 1.96 | - | 113.71 | 0.26 | - | 78.9% | 86.7% | - |
| | Fail | Unresolv. | 48 | 11.5% | 902.08 | 3.03 | - | 294.26 | 0.91 | - | 67.4% | 69.8% | - |
| | Fail | Waiver | 35 | 8.4% | 615.83 | 3.14 | - | 817.20 | 3.38 | - | -32.7% | -7.6% | - |
| Total | Fail% | | 418 | 38.0% | 318.56 | 1.10 | - | 188.49 | 0.57 | - | 40.8% | 48.3% | - |
| 1987 | Pass | - | 169 | | 110.28 | 0.21 | - | 110.28 | 0.21 | - | - | - | - |
| T | Fail | Pass | 44 | 16.9% | 546.16 | 1.75 | - | 109.45 | 0.28 | - | 80.0% | 83.8% | - |
| | Fail | Unresolv. | 37 | 14.2% | 750.22 | 2.55 | - | 285.56 | 0.86 | - | 61.9% | 66.3% | - |
| | Fail | Waiver | 11 | 4.2% | 570.18 | 3.17 | - | 311.55 | 1.69 | - | 45.4% | 46.5% | - |
| Total | Fail% | | 261 | 35.2% | 293.87 | 0.93 | - | 143.47 | 0.38 | - | 51.2% | 59.2% | - |
| 1988 | Pass | - | 392 | | 100.93 | 0.19 | - | 100.93 | 0.19 | - | - | - | - |
| T | Fail | Pass | 68 | 13.0% | 306.53 | 1.49 | - | 104.84 | 0.29 | - | 65.8% | 80.8% | - |
| | Fail | Unresolv. | 38 | 7.3% | 680.79 | 2.33 | - | 206.80 | 0.77 | - | 69.6% | 67.0% | - |
| | Fail | Waiver | 24 | 4.6% | 713.17 | 2.05 | - | 686.38 | 2.41 | - | 3.8% | -17.8% | - |
| Total | Fail% | | 522 | 24.9% | 198.08 | 0.60 | - | 136.07 | 0.35 | - | 31.3% | 42.1% | - |
| 1989 | Pass | - | 242 | | 103.79 | 0.19 | - | 103.79 | 0.19 | - | - | - | - |
| T | Fail | Pass | 42 | 13.7% | 535.64 | 1.26 | - | 138.38 | 0.28 | - | 74.2% | 77.7% | - |
| | Fail | Unresolv. | 18 | 5.9% | 532.17 | 1.31 | - | 171.49 | 0.35 | - | 67.8% | 73.5% | - |
| | Fail | Waiver | 5 | 1.6% | 1,048.80 | 0.66 | - | 567.60 | 1.28 | - | 45.9% | -95.1% | - |
| Total | Fail% | | 307 | 21.2% | 203.38 | 0.41 | - | 120.05 | 0.23 | - | 41.0% | 44.0% | - |
| 1990 | Pass | - | 331 | | 98.15 | 0.20 | - | 98.15 | 0.20 | - | - | - | - |
| T | Fail | Pass | 43 | 10.8% | 312.09 | 1.45 | - | 110.14 | 0.24 | - | 64.7% | 83.6% | - |
| | Fail | Unresolv. | 19 | 4.8% | 1,088.16 | 3.16 | - | 362.53 | 1.12 | - | 66.7% | 64.5% | - |
| | Fail | Waiver | 7 | 1.8% | 1,288.86 | 3.52 | - | 477.71 | 3.12 | - | 62.9% | 11.4% | - |
| Total | Fail% | | 400 | 17.3% | 189.02 | 0.54 | - | 118.64 | 0.30 | - | 37.2% | 43.8% | - |
| 1991 | Pass | - | 248 | | 90.77 | 0.21 | - | 90.77 | 0.21 | - | - | - | - |
| T | Fail | Pass | 18 | 6.4% | 485.61 | 2.26 | - | 114.94 | 0.19 | - | 76.3% | 91.8% | - |
| | Fail | Unresolv. | 14 | 4.9% | 710.93 | 1.91 | - | 245.66 | 0.83 | - | 65.4% | 56.4% | - |
| | Fail | Waiver | 3 | 1.1% | 861.00 | 4.75 | - | 783.00 | 4.82 | - | 9.1% | -1.4% | - |
| Total | Fail% | | 283 | 12.4% | 154.73 | 0.47 | - | 107.31 | 0.28 | - | 30.6% | 39.4% | - |
| 1992 | Pass | - | 322 | | 93.25 | 0.23 | - | 93.25 | 0.23 | - | - | - | - |
| T | Fail | Pass | 30 | 8.1% | 228.33 | 0.47 | - | 127.40 | 0.28 | - | 44.2% | 41.3% | - |
| | Fail | Unresolv. | 9 | 2.4% | 781.67 | 0.84 | - | 257.95 | 0.28 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 11 | 3.0% | 650.18 | 1.04 | - | 607.73 | 0.82 | - | 6.5% | 21.3% | - |
| Total | Fail% | | 372 | 13.4% | 137.27 | 0.29 | - | 115.21 | 0.25 | - | 16.1% | 12.5% | - |
| 1993 | Pass | - | 273 | | 96.93 | 0.25 | - | 96.93 | 0.25 | - | - | - | - |
| T | Fail | Pass | 12 | 4.1% | 430.42 | 1.72 | - | 129.42 | 0.24 | - | 69.9% | 86.2% | - |
| | Fail | Unresolv. | 6 | 2.1% | 925.17 | 2.35 | - | 304.81 | 0.78 | - | 67.1% | 66.9% | - |
| | Fail | Waiver | 1 | 0.3% | 360.00 | 1.75 | - | 360.00 | 1.75 | - | - | - | - |
| Total | Fail% | | 292 | 6.5% | 128.55 | 0.36 | - | 103.43 | 0.26 | - | 19.5% | 26.1% | - |
| 1994 | Pass | - | 428 | | 89.74 | 0.30 | - | 89.74 | 0.30 | - | - | - | - |
| T | Fail | Pass | 11 | 2.4% | 562.00 | 1.28 | - | 151.91 | 0.35 | - | 73.0% | 72.5% | - |
| | Fail | Unresolv. | 6 | 1.3% | 502.83 | 3.77 | - | 165.94 | 1.24 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 5 | 1.1% | 506.00 | 2.01 | - | 606.80 | 2.11 | - | -19.9% | -4.7% | - |
| Total | Fail% | | 450 | 4.9% | 111.41 | 0.39 | - | 98.02 | 0.33 | - | 12.0% | 14.3% | - |

# Appendix D2 Enhanced Idle Test Emissions Reductions

Unresolved fails remaining in area 33%

| Model Year/Type | First Result | Last Result | Vehicles | Fail% | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 | Pass | - | 248 | | 73.42 | 0.24 | - | 73.42 | 0.24 | - | - | - | - |
| T | Fail | Pass | 16 | 6.0% | 357.88 | 0.61 | - | 119.31 | 0.22 | - | 66.7% | 64.3% | - |
| | Fail | Unresolv. | 2 | 0.7% | 1,428.50 | 5.79 | - | 471.41 | 1.91 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 1 | 0.4% | 496.00 | 0.75 | - | 495.00 | 0.67 | - | 0.2% | 10.7% | - |
| Total | Fail% | | 267 | 7.1% | 102.20 | 0.30 | - | 80.73 | 0.25 | - | 21.0% | 17.4% | - |
| 1996 | Pass | - | 320 | | 37.34 | 0.10 | - | 37.34 | 0.10 | - | - | - | - |
| T | Fail | Pass | 7 | 2.1% | 216.00 | 0.18 | - | 40.71 | 0.01 | - | 81.2% | 92.9% | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 327 | 2.1% | 41.17 | 0.10 | - | 37.42 | 0.10 | - | 9.1% | 3.5% | - |
| 1997 | Pass | - | 229 | | 32.24 | 0.08 | - | 32.24 | 0.08 | - | - | - | - |
| T | Fail | Pass | 4 | 1.7% | 199.50 | 0.66 | - | 62.75 | 0.21 | - | 68.5% | 67.2% | - |
| | Fail | Unresolv. | 1 | 0.4% | 175.00 | 2.11 | - | 57.75 | 0.70 | - | 67.0% | 67.0% | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 234 | 2.1% | 35.71 | 0.09 | - | 32.87 | 0.08 | - | 7.9% | 14.3% | - |
| 1998 | Pass | - | 712 | | 27.16 | 0.07 | - | 27.16 | 0.07 | - | - | - | - |
| T | Fail | Pass | 5 | 0.7% | 66.80 | 0.16 | - | 20.80 | 0.01 | - | 68.9% | 91.0% | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 717 | 0.7% | 27.44 | 0.07 | - | 27.12 | 0.07 | - | 1.2% | 1.5% | - |
| 1999 | Pass | - | 263 | | 24.75 | 0.04 | - | 24.75 | 0.04 | - | - | - | - |
| T | Fail | Pass | 1 | 0.4% | 10.00 | - | - | 50.00 | 0.36 | - | -400.0% | - | - |
| | Fail | Unresolv. | 1 | 0.4% | 2.00 | - | - | 0.66 | - | - | 67.0% | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 265 | 0.8% | 24.61 | 0.04 | - | 24.75 | 0.04 | - | -0.6% | -3.7% | - |
| 2000 | Pass | - | 1,117 | | 18.39 | 0.03 | - | 18.39 | 0.03 | - | - | - | - |
| T | Fail | Pass | 10 | 0.9% | 35.00 | 0.01 | - | 10.00 | 0.00 | - | 71.4% | 92.3% | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 1,127 | 0.9% | 18.54 | 0.03 | - | 18.31 | 0.03 | - | 1.2% | 0.3% | - |
| 2001 | Pass | - | 283 | | 13.01 | 0.01 | - | 13.01 | 0.01 | - | - | - | - |
| T | Fail | Pass | 6 | 2.1% | 48.67 | 0.12 | - | 27.67 | 0.08 | - | 43.2% | 30.6% | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 289 | 2.1% | 13.75 | 0.01 | - | 13.31 | 0.01 | - | 3.2% | 5.3% | - |
| 2002 | Pass | - | 228 | | 9.76 | 0.01 | - | 9.76 | 0.01 | - | - | - | - |
| T | Fail | Pass | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 228 | - | 9.76 | 0.01 | - | 9.76 | 0.01 | - | - | - | - |
| 2003 | Pass | - | 18 | | 6.67 | 0.01 | - | 6.67 | 0.01 | - | - | - | - |
| T | Fail | Pass | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 18 | - | 6.67 | 0.01 | - | 6.67 | 0.01 | - | - | - | - |
| 2004 | Pass | - | 1 | | 4.00 | - | - | 4.00 | - | - | - | - | - |
| T | Fail | Pass | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Unresolv. | 0 | - | - | - | - | - | - | - | - | - | - |
| | Fail | Waiver | 0 | - | - | - | - | - | - | - | - | - | - |
| Total | Fail% | | 1 | - | 4.00 | - | - | 4.00 | - | - | - | - | - |
| **Total Trucks** | | | | | | | | | | | | | |
| All | Pass | - | 10,083 | | 123.16 | 0.78 | 0.00 | 123.16 | 0.78 | 0.00 | 0.0% | 0.0% | |
| T | Fail | Pass | 1,202 | 9.8% | 816.15 | 3.23 | 0.00 | 204.68 | 1.42 | 0.00 | 74.9% | 56.1% | - |
| | Fail | Unresolv. | 672 | 5.5% | 1141.28 | 3.25 | 0.00 | 368.44 | 1.07 | 0.00 | 67.7% | 67.1% | - |
| | Fail | Waiver | 352 | 2.9% | 1113.41 | 3.75 | 0.00 | 1025.82 | 3.53 | 0.00 | 7.9% | 5.8% | - |
| Total | Fail% | | 12,309 | 18.1% | 274.73 | 1.24 | 0.00 | 170.32 | 0.94 | 0.00 | 38.0% | 24.4% | - |
| **Fleet Total** | | | | | | | | | | | | | |
| All | Pass | - | 26,408 | | 132.68 | 0.77 | - | 132.68 | 0.77 | - | - | - | |
| All | Fail | Pass | 2,479 | 8.0% | 875.51 | 3.33 | - | 219.41 | 1.51 | - | 74.9% | 54.6% | - |
| | Fail | Unresolv. | 1,358 | 4.4% | 1,154.08 | 3.35 | - | 373.08 | 1.08 | - | 67.7% | 67.6% | - |
| | Fail | Waiver | 725 | 2.3% | 1,300.59 | 3.79 | - | 1,209.97 | 3.58 | - | 7.0% | 5.3% | - |
| Total | Fail% | | 30,970 | 14.7% | 264.27 | 1.16 | - | 175.39 | 0.91 | - | 33.6% | 21.5% | - |

# Appendix D3 Tailpipe Test Emissions Reduction Summary

## IM240 Emissions Reductions

| First Result | Last Result | Vehicles | Fail % | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Station Based Tests** | | | | | | | | | | | | |
| Pass | - | 548,471 | - | 0.37 | 3.88 | 1.19 | 0.37 | 3.88 | 1.19 | - | - | - |
| Fail | Pass | 49,925 | 7.9% | 2.00 | 23.70 | 2.61 | 0.51 | 4.97 | 1.58 | 74.3% | 79.1% | 39.3% |
| Fail | Unresolv. | 18,754 | 3.0% | 3.55 | 38.27 | 2.98 | 1.18 | 12.63 | 0.98 | 66.9% | 67.0% | 67.1% |
| Fail | Waiver | 13,422 | 2.1% | 3.62 | 39.78 | 3.06 | 2.99 | 33.46 | 2.79 | 17.2% | 15.9% | 8.9% |
| Total | Fail% | 630,572 | 13.0% | 0.66 | 7.24 | 1.40 | 0.46 | 4.86 | 1.25 | 30.4% | 32.9% | 10.5% |

## Enhanced Idle Emissions Reductions

| First Result | Last Result | Vehicles | Fail % | Initial HC | Initial CO | Initial NOX | Final HC | Final CO | Final NOX | Reduction % HC | Reduction % CO | Reduction % NOX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Station Based Tests** | | | | | | | | | | | | |
| Pass | - | 26,408 | - | 133 | 0.77 | - | 133 | 0.77 | - | - | - | - |
| Fail | Pass | 2,479 | 8.0% | 876 | 3.33 | - | 219 | 1.51 | - | 74.9% | 54.6% | - |
| Fail | Unresolv. | 1,358 | 4.4% | 1,154 | 3.35 | - | 373 | 1.08 | - | 67.7% | 67.6% | - |
| Fail | Waiver | 725 | 2.3% | 1,301 | 3.79 | - | 1,210 | 3.58 | - | 7.0% | 5.3% | - |
| Total | Fail% | 30,970 | 14.7% | 264 | 1.16 | - | 175 | 0.91 | - | 33.6% | 21.5% | - |