Getting the Output You Need from MOBILE6

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Which Form of Output Do You Need?

- Descriptive Output
  - Intended to be printed or read directly
  - Not very detailed
- Database Output
  - Intended to be input to other software
    - e.g. spreadsheet, database management software, or post-processor
  - Available at three levels of detail, can be **very** detailed

How Much Detail Do You Need?

	Descriptive or Aggregated Database	Daily Database	Hourly Database
Vehicle Type	Yes	Yes	Yes
Pollutant	Yes	Yes	Yes
Emission Type	Yes	Yes	Yes
Facility Type	No	Yes	Yes
Age	No	Yes	Yes
Hour	No	No	Yes

Descriptive Output

- Obtained by default -
  - Can suppress with NO DESC OUTPUT command
- Default filename extension is .TXT
- Vehicle classes (and combinations of them) are columns
- Emission types and pollutants are rows
- Emissions are expressed in grams/mile
- EXPAND EXHAUST and EXPAND EVAP commands add rows

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*************************************************************************
* MOBILE6 Draft (08-Mar-2001)                                           *
* Input file: DESCOUT.IN (file 1, run 1).                               *
*************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Default Descriptive Output

* File 1, Run 1, Scenario 1.

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

                     Calendar Year:  2012
                             Month:  Jan.
                          Altitude:  Low
               Minimum Temperature:  64.0 (F)
               Maximum Temperature:  92.0 (F)
                 Absolute Humidity:   75. grains/lb
                  Nominal Fuel RVP:   7.0 psi
                     Weathered RVP:   6.7 psi
               Fuel Sulfur Content:   30. ppm

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

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV
               GVWR:                <6000     >6000     (All)
                         ------    ------    ------    ------    ------
   VMT Distribution:    0.3322    0.4019    0.1370              0.0357
-------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.62      0.68      1.22      0.81      0.91
     Composite CO  :      9.22     10.09     13.15     10.87      8.12
     Composite NOX :      0.50      0.61      1.03      0.71      2.08
-------------------------------------------------------------------------
```

EXPAND EXHAUST command adds rows for Start and Running

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV
GVWR:		<6000	>6000	(All)	
VMT Distribution:	0.3322	0.4019	0.1370		0.0357
Composite Emission Factors (g/mi):					
Composite VOC :	0.62	0.68	1.22	0.81	0.91
Composite CO :	9.22	10.09	13.15	10.87	8.12
Composite NOX :	0.50	0.61	1.03	0.71	2.08
Exhaust emissions (g/mi):					
VOC Start:	0.13	0.16	0.27	0.18	
VOC Running:	0.14	0.17	0.30	0.20	
VOC Total Exhaust:	0.27	0.32	0.56	0.38	0.23
CO Start:	2.32	3.41	4.60	3.71	
CO Running:	6.89	6.68	8.56	7.15	
CO Total Exhaust:	9.22	10.09	13.15	10.87	8.12
NOx Start:	0.08	0.12	0.22	0.15	
NOx Running:	0.42	0.48	0.81	0.57	
NOx Total Exhaust:	0.50	0.61	1.03	0.71	2.08

EXPAND EVAP command adds rows for evaporative emission types

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV
GVWR:		<6000	>6000	(All)	
VMT Distribution:	0.3322	0.4019	0.1370		0.0357
Composite Emission Factors (g/mi):					
Composite VOC :	0.62	0.68	1.22	0.81	0.91
Composite CO :	9.22	10.09	13.15	10.87	8.12
Composite NOX :	0.50	0.61	1.03	0.71	2.08
Non-Exhaust Emissions (g/mi):					
Hot Soak Loss:	0.10	0.10	0.21	0.13	0.17
Diurnal Loss:	0.02	0.02	0.03	0.02	0.04
Resting Loss:	0.06	0.07	0.14	0.08	0.13
Running Loss:	0.13	0.11	0.19	0.13	0.18
Crankcase Loss:	0.01	0.01	0.01	0.01	0.01
Refueling Loss:	0.02	0.05	0.08	0.05	0.16
Total Non-Exhaust:	0.35	0.35	0.66	0.43	0.68

Add columns for additional vehicle sub-classes with the following commands:

- EXPAND HDDV EFS
- EXPAND HDGV EFS
- EXPAND LDT EFS
- EXPAND BUS EFS

Effect of EXPAND HDDV EFS Command

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV
GVWR:		<6000	>6000	(All)	
VMT Distribution:	0.3322	0.4019	0.1370		0.0357

Composite Emission Factors (g/mi):

Composite VOC :	0.62	0.68	1.22	0.81	0.91
Composite CO :	9.22	10.09	13.15	10.87	8.12
Composite NOX :	0.50	0.61	1.03	0.71	2.08

Veh. Type:	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6
VMT Mix:	0.0090	0.0028	0.0029	0.0014	0.0065

Composite Emission Factors (g/mi):

Composite VOC :	0.15	0.16	0.22	0.23	0.28
Composite CO :	0.45	0.46	0.74	0.78	0.79
Composite NOX :	1.87	1.87	2.97	3.13	3.75

Database Output

- Requested with DATABASE OUTPUT command
- Default filename extension is .TB1
- Is a single table
- Stored in tab-separated ASCII file
- Add column headers using WITH FIELDNAMES command

What Does Database Output “Look Like”?

Microsoft Excel - 308.tb1

FILE	RUN	SCEN	POL	VTYPE	ETYPE	FTYPE	AGE	GM_MILE	GM_DAY	STARTS	ENDS	MILES	MPG	FACVMT	RE
1	1	1	1	1	1	1	24	3.8517	47.325	7.28	5.3783	12.2868	16.83	0.3421	
1	1	1	1	1	1	2	24	4.2078	51.7	7.28	5.3783	12.2868	16.83	0.4978	
1	1	1	1	1	1	3	24	8.2122	100.902	7.28	5.3783	12.2868	16.83	0.1305	
1	1	1	1	1	1	4	24	4.6472	57.099	7.28	5.3783	12.2868	16.83	0.0297	
1	1	1	1	1	2	5	24	9.8182	120.635	7.28	5.3783	12.2868	16.83	1	
1	1	1	1	1	1	1	23	2.668	34.479	7.28	5.3783	12.9232	19.42	0.3421	
1	1	1	1	1	1	2	23	2.9793	38.502	7.28	5.3783	12.9232	19.42	0.4978	
1	1	1	1	1	1	3	23	5.7851	74.762	7.28	5.3783	12.9232	19.42	0.1305	
1	1	1	1	1	1	4	23	3.3693	43.542	7.28	5.3783	12.9232	19.42	0.0297	
1	1	1	1	1	2	5	23	7.3571	95.077	7.28	5.3783	12.9232	19.42	1	
1	1	1	1	1	1	1	22	1.5403	20.94	7.28	5.3783	13.5945	20.74	0.3421	
1	1	1	1	1	1	2	22	1.7192	23.372	7.28	5.3783	13.5945	20.74	0.4978	
1	1	1	1	1	1	3	22	2.8419	38.634	7.28	5.3783	13.5945	20.74	0.1305	
1	1	1	1	1	1	4	22	1.9853	26.99	7.28	5.3783	13.5945	20.74	0.0297	
1	1	1	1	1	2	5	22	2.0064	27.276	7.28	5.3783	13.5945	20.74	1	
1	1	1	1	1	1	1	21	1.5478	22.133	7.28	5.3783	14.3001	21.55	0.3421	
1	1	1	1	1	1	2	21	1.7252	24.671	7.28	5.3783	14.3001	21.55	0.4978	
1	1	1	1	1	1	3	21	2.8503	40.759	7.28	5.3783	14.3001	21.55	0.1305	
1	1	1	1	1	1	4	21	1.9913	28.475	7.28	5.3783	14.3001	21.55	0.0297	
1	1	1	1	1	2	5	21	1.8372	26.273	7.28	5.3783	14.3001	21.55	1	
1	1	1	1	1	1	1	20	1.2507	18.815	7.28	5.3783	15.0433	21.52	0.3421	
1	1	1	1	1	1	2	20	1.3907	20.921	7.28	5.3783	15.0433	21.52	0.4978	
1	1	1	1	1	1	3	20	2.2698	34.145	7.28	5.3783	15.0433	21.52	0.1305	
1	1	1	1	1	1	4	20	1.6082	24.193	7.28	5.3783	15.0433	21.52	0.0297	
1	1	1	1	1	2	5	20	1.5904	23.925	7.28	5.3783	15.0433	21.52	1	
1	1	1	1	1	1	1	19	1.169	18.498	7.28	5.3783	15.8235	21.85	0.3421	
1	1	1	1	1	1	2	19	1.2955	20.499	7.28	5.3783	15.8235	21.85	0.4978	
1	1	1	1	1	1	3	19	2.1203	33.551	7.28	5.3783	15.8235	21.85	0.1305	
1	1	1	1	1	1	4	19	1.5056	23.824	7.28	5.3783	15.8235	21.85	0.0297	
1	1	1	1	1	2	5	19	1.3366	21.15	7.28	5.3783	15.8235	21.85	1	
1	1	1	1	1	1	1	18	1.0974	18.266	7.28	5.3783	16.6448	22.47	0.3421	
1	1	1	1	1	1	2	18	1.2125	20.183	7.28	5.3783	16.6448	22.47	0.4978	
1	1	1	1	1	1	3	18	1.9914	33.146	7.28	5.3783	16.6448	22.47	0.1305	
1	1	1	1	1	1	4	18	1.4178	23.599	7.28	5.3783	16.6448	22.47	0.0297	

Three Formats of MOBILE6 Database Output

- Hourly
  - The default format
  - Most detailed
- Daily
  - Specify with DAILY OUTPUT command
- Aggregated
  - Specify with AGGREGATED OUTPUT command

Three Kinds of Database Fields

- Key Fields
  - Identify records
- Echoed Fields
  - Used to convert output (e.g. units conversions)
  - Not substantively calculated by MOBILE6
- Calculated Fields

Key Fields

- FILE, RUN, and SCEN
- VTYPE
- POL
- AGE (Not present in Aggregated format)
- ETYPE (Not present in Aggregated)
- FTYPE (Not present in Aggregated)
- HOUR (Hourly format only)

Echoed Fields (1 of 2)

- STARTS
- ENDS
- MILES
- MPG
- HRVMT (Hourly format only)
- FACVMT (Not present in Aggregated)
- REGDIST (Not present in Aggregated)

Echoed Fields (2 of 2)

- VCOUNT (Not present in Aggregated)
- AMBTEMP (Hourly format only)
- DIURTEMP (Hourly format only)
- MYR (Not present in Aggregated)
- VMT (Aggregated format only)
- CAL_YEAR (Aggregated format only)

Calculated Fields

- GM_DAY (or GM_HR)
- GM_MI

- Note:

GM_MI = GM_DAY (or GM_HR) / MILES

Using the Database Output - Example Unit Conversions

- Grams per Start =

  GM_DAY (or GM_HR) / STARTS

  – Note these emissions are produced during starts only if ETYPE = 2

- Grams per Gallon =

  GM_DAY (or GM_HR) * MPG / MILES

Limit the Output Records Produced

- DATABASE EMISSIONS
- DATABASE FACILITIES
- DATABASE VEHICLES
- DATABASE AGES
- DATABASE HOURS
- DATABASE YEARS

Aggregating Emissions

- Aggregate to remove detailed distinctions from database output
  - e.g. Hour, Facility Type, Age, etc.
- To remove Hour, start with DAILY Format
- To remove other distinctions
  - Recalculate emissions as weighted averages across the categories you wish to join.

For Additional Information

Refer to User Guide Chapter 3

Or

MOBILE6 Computer Based Training