

APPENDIX R

**COMPUTER PRINTOUT OF CROWN VICTORIA #1
FTP CHECKOUT TEST RESULTS**

APPENDIX S

COMPUTER PRINTOUTS OF TASK 3 CROWN VICTORIA #1 EHC OPTIMIZATION TESTS

Page S-	Test No.	Fuel	Catalyst	Test Cycle	EHC* Variable
2	CVHC-CK RUN 1	M85	EHC + OEM	FTP	CTIME1 = 65 WTIME1 = 0
3	CVHC-CK RUN 4	M85	EHC + OEM	FTP	CTIME1 = 65 WTIME1 = 30
4	CVHC-CK RU 6	M85	EHC + OEM	FTP	CTIME1 = 80 WTIME1 = 30
*See EHC controller settings in Appendix R.					

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

CTIME1 = 65
WTIME1 = 0

NO. CVHC-CK RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
MISSION A4

VEHICLE NO.95
DATE 10/13/92
BAG CART NO. 2 / CYS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 121. KM(75. MILES)

METER 742.70 MM HG(29.24 IN HG)
RELATIVE HUMIDITY 45. PCT

DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)
ABS. HUMIDITY 8.8 GM/KG

NOX HUMIDITY CORRECTION FACTOR .94

RESULTS

TEST NUMBER	1 COLD TRANSIENT	2 STABILIZED	3 HOT TRANSIENT	4 STABILIZED
LOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
LOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
LOWER INLET TEMP. DEG. C(DEG. F)	38.9 (102.0)	38.9 (102.0)	39.4 (103.0)	39.4 (103.0)
LOWER REVOLUTIONS	19168.	32842.	19157.	32818.
AIR FLOW STD. CU. METRES(SCF)	134.2 (4740.)	230.0 (8121.)	134.0 (4730.)	229.4 (8101.)
CO SAMPLE METER/RANGE/PPM	15.0/ 2/ 15.	12.8/ 2/ 13.	13.6/ 2/ 14.	15.5/ 2/ 15.
CO BCKGRD METER/RANGE/PPM	11.7/ 2/ 12.	12.5/ 2/ 12.	13.1/ 2/ 13.	15.5/ 2/ 15.
HC SAMPLE METER/RANGE/PPM	6.2/ 12/ 6.	1.8/ 12/ 2.	1.5/ 12/ 1.	1.3/ 12/ 1.
HC BCKGRD METER/RANGE/PPM	1.9/ 12/ 2.	1.6/ 12/ 2.	1.2/ 12/ 1.	.8/ 12/ 1.
NO2 SAMPLE METER/RANGE/PCT	89.0/ 14/ .8434	72.6/ 14/ .5372	82.9/ 14/ .7133	70.8/ 14/ .5108
NO2 BCKGRD METER/RANGE/PCT	14.1/ 14/ .0482	13.8/ 14/ .0470	13.7/ 14/ .0466	13.7/ 14/ .0466
NOX SAMPLE METER/RANGE/PPM	64.6/ 1/ 16.1	24.6/ 1/ 6.2	46.5/ 1/ 11.6	23.6/ 1/ 5.9
NOX BCKGRD METER/RANGE/PPM	.8/ 1/ .2	.7/ 1/ .2	.7/ 1/ .2	.7/ 1/ .2
DRY BULB TEMP. FACTOR	14.08	22.11	16.66	23.23
CO CONCENTRATION PPM	4.	1.	1.	1.
HC CONCENTRATION PPM	4.	0.	0.	0.
NO2 CONCENTRATION PCT	.7986	.4924	.6695	.4663
NOX CONCENTRATION PPM	15.9	6.0	11.4	5.8
CO MASS GRAMS	.635	.228	.197	.175
HC MASS GRAMS	.632	.062	.050	.129
NO2 MASS GRAMS	1962.9	2073.3	1642.0	1958.6
NOX MASS GRAMS	3.839	2.485	2.759	2.376
CO GRAMS/MI	.176	.059	.055	.045
HC GRAMS/MI	.175	.016	.014	.033
NO2 GRAMS/MI	544.9	536.3	457.2	504.2
NOX GRAMS/MI	1.066	.643	.768	.612
FUEL ECONOMY IN MPG	8.718	8.793	10.396	9.869
TEST TIME SECONDS	506.	867.	506.	868.
MEASURED DISTANCE MI	3.60	7.47	3.59	7.48
TEMP. DRY	.971	.974	.973	.975
TEMP. WET (DRY)		.945(.932)		.951(.937)
TOT VOL (SCM) / SAM BLR (SCM)		364.2/ .00		363.4/ .00

TEST RESULTS

TEST NUMBER CVHC-CK
BAROMETER MM HG 742.7
RELATIVE HUMIDITY G/KG 8.8
TEMPERATURE DEG C 24.4

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	516.4	(506.9)
FUEL ECONOMY MPG	9.204	(9.38)
HYDROCARBONS (THC) G/MI	.082	(.08)
CARBON MONOXIDE G/MI	.048	(.05)
OXIDES OF NITROGEN G/MI	.765	(.76)

APPENDIX T

**EHF LOGIC MODULE PARAMETERS FOR
CROWN VICTORIA #1 AND VW JETTA**

Crown Victoria #1 EHC Controller Setting

CAMET PPRS VARIABLE SETUP

Write ascii file - ALT-A
Print variables - ALT-P

c:\ehc\crownv1.dat (Ascii file)

17-Nov-92
12:52 PM

DETERMINATION OF COLD, WARM, OR HOT START

STARTMODE (0-4)	2	Use EHC temperature
HSWARM (0-200 C)	80	Not used
HSHOT (0-200 C)	100	Not used
CATWARM (0-900 C)	150	Cold start if EHC cooler than this
CATHOT (0-900C C)	350	Warm start if EHC cooler than this

COLD START, PRE-CRANK HEATING STRATEGY:

PRECOLDSTRAT (0-4)	1	Temperature controlled heating
CTIME0 (0-300 sec.)	25	Safety cutoff time if thermocouple fails
CTEMP0 (0-900 C)	400	Temperature setpoint
CPWR0 (0-100 %)	100	Desired EHC power level
CWAITTEMP (0-900 C)	350	Temperature where crank allowed

COLD START, POST-CRANK HEATING STRATEGY:

POSTCOLDSTRAT (0-4)	1	Temperature controlled heating
CTIME1 (0-300 sec.)	30	Length of time period 1
CTEMP1 (0-900 C)	400	Temperature setpoint for period 1
CPWR1 (0-100 %)	100	Desired EHC power level period 1
CTIME2 (0-300 sec.)	0	Length of time period 2
CTEMP2 (0-900 C)	400	Temperature setpoint period 2
CPWR2 (0-100 %)	100	Desired EHC power level period 2
CTIME3 (0-300 sec.)	0	Length of time period 3
CTEMP3 (0-900 C)	400	Temperature setpoint period 3
CPWR3 (0-100 %)	100	Desired EHC power level period 3

WARM START, PRE-CRANK HEATING STRATEGY:

PREWARMSTRAT (0-4)	1	Temperature controlled heating
WTIME0 (0-300 sec.)	25	Safety cutoff time if thermocouple fails
WTEMP0 (0-900 C)	400	Temperature setpoint
WPWR0 (0-100 %)	100	Desired EHC power level
WWAITTEMP (0-900 C)	350	Temperature where crank allowed

WARM START, POST-CRANK HEATING STRATEGY:

POSTWARMSTRAT (0-4)	1	Temperature controlled heating
WTIME1 (0-300 sec.)	15	Length of time period 1
WTEMP1 (0-900 C)	400	Temperature setpoint for period 1
WPWR1 (0-100 %)	100	Desired EHC power level period 1
WTIME2 (0-300 sec.)	0	Length of time period 2
WTEMP2 (0-900 C)	400	Temperature setpoint period 2
WPWR2 (0-100 %)	100	Desired EHC power level period 2
WTIME3 (0-300 sec.)	0	Length of time period 3
WTEMP3 (0-900 C)	400	Temperature setpoint period 3
WPWR3 (0-100 %)	100	Desired EHC power level period 3

Crown Victoria #1 EHC Controller Settings (Cont'd)

COLD START AIR STRATEGY

ACTIME1 (0-300 sec.)	0	Length of time period 1
ACTIME2 (0-300 sec.)	0	Length of time period 2
ACTIME3 (0-300 sec.)	0	Length of time period 3
ACPWR1B (0-100 %)	100	Beginning air pump power level period 1
ACPWR1E (0-100 %)	100	Ending air pump power level period 1
ACPWR2B (0-100 %)	100	Beginning air pump power level period 2
ACPWR2E (0-100 %)	100	Ending air pump power level period 2
ACPWR3B (0-100 %)	100	Beginning air pump power level period 3
ACPWR3E (0-100 %)	100	Ending air pump power level period 3

WARM START AIR STRATEGY

AWTIME1 (0-300 sec.)	0	Length of time period 1
AWTIME2 (0-300 sec.)	0	Length of time period 2
AWTIME3 (0-300 sec.)	0	Length of time period 3
AWPWR1B (0-100 %)	100	Beginning air pump power level period 1
AWPWR1E (0-100 %)	100	Ending air pump power level period 1
AWPWR2B (0-100 %)	100	Beginning air pump power level period 2
AWPWR2E (0-100 %)	100	Ending air pump power level period 2
AWPWR3B (0-100 %)	100	Beginning air pump power level period 3
AWPWR3E (0-100 %)	100	Ending air pump power level period 3

ALTERNATOR STRATEGY

ALTDIS (0-2)	1	Disable when EHC on, enable 10 sec. later
ALTTIME1 (0-300 sec)	30	Not used
ALTTIME2 (0-300 sec)	30	Not used
ALTTIME3 (0-300 sec)	30	Not used
ALTFLAG1 (0 or 1)	1	Not used
ALTFLAG2 (0 or 1)	0	Not used
ALTFLAG3 (0 or 1)	0	Not used

MISCELLANEOUS VARIABLES

PROPGAIN (0-5000)	600	Proportional gain factor for temp control
DERIVGAIN (0-5000)	400	Derivative gain factor for temp control
VRTP (0-12.0 V)	8.0	Power is reduced when below this voltage
MODRANGE (0-12.0 V)	2.0	Range of voltage where power regulated
SHUTDOWN (0- 12.0 V)	7.2	Power shut off below this voltage
RAMPTIME(0-60.0 sec)	2.0	Power turned on gradually over this time
SAFETYTEMP (0-900 C)	900	Power shut off above this temp always

VW Jetta EHC Controller Settings

CAMET PPRS VARIABLE SETUP

Write ascii file - ALT-A
Print variables - ALT-P

c:\ehc\jetta1.dat (Ascii file)

17-Nov-92
12:59 PM

DETERMINATION OF COLD, WARM, OR HOT START

```
-----
STARTMODE (0-4)          2  Use EHC temperature
HSWARM (0-200 C)         80  Not used
HSHOT (0-200 C)          100 Not used
CATWARM (0-900 C)        100 Cold start if EHC cooler than this
CATHOT (0-900C C)        350 Warm start if EHC cooler than this
-----
```

COLD START, PRE-CRANK HEATING STRATEGY:

```
-----
PRECOLDSTRAT (0-4)       1  Temperature controlled heating
CTIME0 (0-300 sec.)      25  Safety cutoff time if thermocouple fails
CTEMP0 (0-900 C)         400 Temperature setpoint
CPWR0 (0-100 %)          100 Desired EHC power level
CWAITTEMP (0-900 C)      350 Temperature where crank allowed
-----
```

COLD START, POST-CRANK HEATING STRATEGY:

```
-----
POSTCOLDSTRAT (0-4)      1  Temperature controlled heating
CTIME1 (0-300 sec.)      60 Length of time period 1
CTEMP1 (0-900 C)         400 Temperature setpoint for period 1
CPWR1 (0-100 %)          100 Desired EHC power level period 1
CTIME2 (0-300 sec.)      0  Length of time period 2
CTEMP2 (0-900 C)         400 Temperature setpoint period 2
CPWR2 (0-100 %)          100 Desired EHC power level period 2
CTIME3 (0-300 sec.)      0  Length of time period 3
CTEMP3 (0-900 C)         400 Temperature setpoint period 3
CPWR3 (0-100 %)          100 Desired EHC power level period 3
-----
```

WARM START, PRE-CRANK HEATING STRATEGY:

```
-----
PREWARMSTRAT (0-4)       1  Temperature controlled heating
WTIME0 (0-300 sec.)      25  Safety cutoff time if thermocouple fails
WTEMP0 (0-900 C)         400 Temperature setpoint
WPWR0 (0-100 %)          100 Desired EHC power level
WWAITTEMP (0-900 C)      350 Temperature where crank allowed
-----
```

WARM START, POST-CRANK HEATING STRATEGY:

```
-----
POSTWARMSTRAT (0-4)      1  Temperature controlled heating
WTIME1 (0-300 sec.)      30 Length of time period 1
WTEMP1 (0-900 C)         400 Temperature setpoint for period 1
WPWR1 (0-100 %)          100 Desired EHC power level period 1
WTIME2 (0-300 sec.)      0  Length of time period 2
WTEMP2 (0-900 C)         400 Temperature setpoint period 2
WPWR2 (0-100 %)          100 Desired EHC power level period 2
WTIME3 (0-300 sec.)      0  Length of time period 3
WTEMP3 (0-900 C)         400 Temperature setpoint period 3
WPWR3 (0-100 %)          100 Desired EHC power level period 3
-----
```

VW Jetta EHC Controller Settings (Cont'd)

COLD START AIR STRATEGY

ACTIME1 (0-300 sec.)	80	Length of time period 1
ACTIME2 (0-300 sec.)	0	Length of time period 2
ACTIME3 (0-300 sec.)	0	Length of time period 3
ACPWR1B (0-100 %)	100	Beginning air pump power level period 1
ACPWR1E (0-100 %)	100	Ending air pump power level period 1
ACPWR2B (0-100 %)	100	Beginning air pump power level period 2
ACPWR2E (0-100 %)	100	Ending air pump power level period 2
ACPWR3B (0-100 %)	100	Beginning air pump power level period 3
ACPWR3E (0-100 %)	100	Ending air pump power level period 3

WARM START AIR STRATEGY

AWTIME1 (0-300 sec.)	30	Length of time period 1
AWTIME2 (0-300 sec.)	0	Length of time period 2
AWTIME3 (0-300 sec.)	0	Length of time period 3
AWPWR1B (0-100 %)	100	Beginning air pump power level period 1
AWPWR1E (0-100 %)	100	Ending air pump power level period 1
AWPWR2B (0-100 %)	100	Beginning air pump power level period 2
AWPWR2E (0-100 %)	100	Ending air pump power level period 2
AWPWR3B (0-100 %)	100	Beginning air pump power level period 3
AWPWR3E (0-100 %)	100	Ending air pump power level period 3

ALTERNATOR STRATEGY

ALTDIS (0-2)	1	Disable when EHC on, enable 10 sec. later
ALTTIME1 (0-300 sec)	30	Not used
ALTTIME2 (0-300 sec)	30	Not used
ALTTIME3 (0-300 sec)	30	Not used
ALTFLAG1 (0 or 1)	1	Not used
ALTFLAG2 (0 or 1)	0	Not used
ALTFLAG3 (0 or 1)	0	Not used

MISCELLANEOUS VARIABLES

PROPGAIN (0-5000)	600	Proportional gain factor for temp control
DERIVGAIN (0-5000)	400	Derivative gain factor for temp control
VRTP (0-12.0 V)	8.0	Power is reduced when below this voltage
MODRANGE (0-12.0 V)	2.0	Range of voltage where power regulated
SHUTDOWN (0- 12.0 V)	7.2	Power shut off below this voltage
RAMPTIME(0-60.0 sec)	2.0	Power turned on gradually over this time
SAFETYTEMP (0-900 C)	700	Power shut off above this temp always

APPENDIX U

COMPUTER PRINTOUTS OF CROWN VICTORIA #1 TASK 3 EMISSION TEST RESULTS

Page U-	Test No.	Fuel	Catalyst	Test Cycle
2	F2HC0K-01	M85	Camet	FTP
3	F2HC0K-01	M85	Camet	HFET
4	F2HC0K-01	M85	Camet	NYCC
5	F2HC0K-02	M85	Camet	FTP
6	F2HC0K-02	M85	Camet	HFET
7	F2HC0K-02	M85	Camet	NYCC
8	F1HC0K-01	Howell EEE	Camet	FTP
9	F1HC0K-01	Howell EEE	Camet	HFET
10	F1HC0K-01	Howell EEE	Camet	NYCC
11	F1HC0K-02	Howell EEE	Camet	FTP
12	F1HC0K-02	Howell EEE	Camet	HFET
13	F1HC0K-02	Howell EEE	Camet	NYCC
14	F2HC2K-01	M85	Camet	FTP
15	F2HC2K-01	M85	Camet	HFET
16	F2HC2K-01	M85	Camet	NYCC
17	F2HC2K-02	M85	Camet	FTP
18	F2HC2K-02	M85	Camet	HFET
19	F2HC2K-02	M85	Camet	NYCC
20	F2HC4K-01	M85	Camet+OEM	FTP
21	F2HC4K-01	M85	Camet+OEM	HFET
22	F2HC4K-01	M85	Camet+OEM	NYCC
23	F2HC4K-02	M85	Camet+OEM	FTP
24	F1HC4K-02	M85	Camet+OEM	HFET
25	F2HC4K-02	M85	Camet+OEM	NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F1HCOK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

VEHICLE NO.95
DATE 11/12/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
GASOLINE EM-1540-F
ODOMETER 481. KM(299. MILES)

BAROMETER 745.74 MM HG(29.36 IN HG)
RELATIVE HUMIDITY 15. PCT

DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
ABS. HUMIDITY 2.7 GM/KG

NOX HUMIDITY CORRECTION FACTOR .79

BAG RESULTS

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	42.2 (108.0)	41.7 (107.0)	42.2 (108.0)
BLOWER REVOLUTIONS	19115.	32853.	19086.	32867.
TOT FLOW STD. CU. METRES(SCF)	133.1 (4699.)	229.1 (8088.)	133.3 (4706.)	229.1 (8091.)
THC SAMPLE METER/RANGE/PPM	22.7/ 2/ 23.	13.0/ 2/ 13.	13.3/ 2/ 13.	12.0/ 2/ 12.
THC BCKGRD METER/RANGE/PPM	9.7/ 2/ 10.	10.9/ 2/ 11.	10.0/ 2/ 10.	10.1/ 2/ 10.
CO SAMPLE METER/RANGE/PPM	5.1/ 12/ 5.	.3/ 12/ 0.	1.2/ 12/ 1.	.1/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.1/ 12/ 0.	.0/ 12/ 0.	.2/ 12/ 0.	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	90.7/ 14/ .8841	73.9/ 14/ .5570	85.3/ 14/ .7618	71.6/ 14/ .5224
CO2 BCKGRD METER/RANGE/PCT	12.4/ 14/ .0415	12.3/ 14/ .0411	12.1/ 14/ .0403	12.1/ 14/ .0403
NOX SAMPLE METER/RANGE/PPM	80.7/ 1/ 20.1	24.5/ 1/ 6.1	46.2/ 1/ 11.5	24.4/ 1/ 6.1
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2	.5/ 1/ .1	.6/ 1/ .2	.4/ 1/ .1
DILUTION FACTOR	15.11	24.00	17.56	25.59
THC CONCENTRATION PPM	14.	3.	4.	2.
CO CONCENTRATION PPM	5.	0.	1.	0.
CO2 CONCENTRATION PCT	.8454	.5177	.7238	.4837
NOX CONCENTRATION PPM	19.9	6.0	11.4	6.0
THC MASS GRAMS	1.046	.337	.297	.303
CO MASS GRAMS	.723	.075	.146	.025
CO2 MASS GRAMS	2059.7	2170.8	1766.0	2029.3
NOX MASS GRAMS	4.016	2.088	2.297	2.089
THC GRAMS/MI	.293	.088	.083	.079
CO GRAMS/MI	.203	.019	.041	.007
CO2 GRAMS/MI	577.3	563.8	494.6	530.0
NOX GRAMS/MI	1.126	.542	.643	.545
FUEL ECONOMY IN MPG	15.328	15.530	15.72	17.917
RUN TIME SECONDS	505.	869.	505.	869.
MEASURED DISTANCE MI	3.57	7.42	3.85	7.40
SCF, DRY	.987	.989	.990	.990
DPC, WET (DRY)		.949(.945)		.954(.950)
TOT VOL (SCM) / SAM BLR (SCM)		362.1/ .00		362.4/ .00

WPOSITE RESULTS

TEST NUMBER F1HCOK-01
BAROMETER MM HG 745.7
HUMIDITY G/KG 2.7
TEMPERATURE DEG C 23.3

		3-BAG	(4-BAG)
CARBON DIOXIDE	G/MI	547.6	(537.6)
FUEL ECONOMY	MPG	16.179	(16.48)
HYDROCARBONS (THC)	G/MI	.129	(.13)
CARBON MONOXIDE	G/MI	.063	(.06)
OXIDES OF NITROGEN	G/MI	.691	(.69)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-PET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F1HCOK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 745.49 MM HG(29.35 IN HG)
RELATIVE HUMIDITY 28. PCT

BAG RESULTS

TEST CYCLE

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)
BLOWER REVOLUTIONS	28937.
TOT FLOW STD. CU. METRES(SCF)	201.4 (7110.)
THC SAMPLE METER/RANGE/PPM	13.2/ 2/ 13.
THC BCKGRD METER/RANGE/PPM	10.7/ 2/ 11.
CO SAMPLE METER/RANGE/PPM	.2/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.2/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	94.7/ 14/ .9892
CO2 BCKGRD METER/RANGE/PCT	12.0/ 14/ .0399
NOX SAMPLE METER/RANGE/PPM	43.9/ 1/ 11.0
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1
DILUTION FACTOR	13.53
THC CONCENTRATION PPM	3.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.9523
NOX CONCENTRATION PPM	10.9
THC MASS GRAMS	.382
CO MASS GRAMS	.002
CO2 MASS GRAMS	3510.5
NOX MASS GRAMS	3.504
RUN TIME	766.
SECONDS	
DPC, WET (DRY)	.926 (.918)
SCF, WET (DRY)	1.000 (.982)
VOL (SCH)	201.4
SAM BLR (SCH)	.00
MI (MEASURED)	10.12

H-PET

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
GASOLINE EM-1540-F
ODOMETER 505. KM(314. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 6.16
NOX HUMIDITY CORRECTION FACTOR .84

TEST NUMBER,	F1HCOK-01
BAROMETER,	MM HG
HUMIDITY,	G/KG
TEMPERATURE,	DEG C
CARBON DIOXIDE,	G/MI
FUEL ECONOMY,	MPG

HYDROCARBONS, (THC)	G/MI	.038
CARBON MONOXIDE,	G/MI	.000
OXIDES OF NITROGEN,	G/MI	.346

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. FILECOK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 745.24 MM HG(29.34 IN HG)
RELATIVE HUMIDITY 25. PCT
BAG RESULTS

VEHICLE NO.95
DATE 11/12/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 25.6 DEG C(78.0 DEG F)
ABS. HUMIDITY 5.1 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
GASOLINE EM-1540-F
ODOMETER 521. KM(324. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 6.16
NOX HUMIDITY CORRECTION FACTOR .85

TEST CYCLE

NYCC

BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	22659.
TOT FLOW STD. CU. METRES(SCF)	157.8 (5573.)
THC SAMPLE METER/RANGE/PPM	14.9/ 2/ 15.
THC BCKGRD METER/RANGE/PPM	12.2/ 2/ 12.
CO SAMPLE METER/RANGE/PPM	.3/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.3/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	67.8/ 14/ .4693
CO2 BCKGRD METER/RANGE/PCT	12.0/ 14/ .0399
NOX SAMPLE METER/RANGE/PPM	25.4/ 1/ 6.4
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2
DILUTION FACTOR	28.46
THC CONCENTRATION PPM	3.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.4308
NOX CONCENTRATION PPM	6.2
THC MASS GRAMS	.285
CO MASS GRAMS	.001
CO2 MASS GRAMS	1244.8
NOX MASS GRAMS	1.588
RUN TIME	600.
DPC, WET (DRY)	.965 (.957)
SCF, WET (DRY)	1.000 (.988)
VOL (SCM)	157.8
SAM BLR (SCM)	.00
MI (MEASURED)	1.13

TEST NUMBER,	FILECOK-01
BAROMETER, MM HG	745.2
HUMIDITY, G/KG	5.1
TEMPERATURE, DEG C	25.6
CARBON DIOXIDE, G/MI	1101.3
FUEL ECONOMY, MPG	8.05
HYDROCARBONS, (THC) G/MI	.252
CARBON MONOXIDE, G/MI	.001
OXIDES OF NITROGEN, G/MI	1.405

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F1HCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

VEHICLE NO.95
DATE 11/13/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
GASOLINE EM-1540-F
ODOMETER 526. KM(327. MILES)

BAROMETER 750.57 MM HG(29.55 IN HG)
RELATIVE HUMIDITY 28. PCT

DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 4.7 GM/KG

NOX HUMIDITY CORRECTION FACTOR .84

BAG RESULTS

BAG NUMBER	1	2	3	4
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	41.7 (107.0)	41.7 (107.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19112.	32806.	19104.	32815.
TOT FLOW STD. CU. METRES(SCF)	134.3 (4742.)	230.8 (8151.)	134.4 (4747.)	230.9 (8153.)
THC SAMPLE METER/RANGE/PPM	24.5/ 2/ 24.	15.4/ 2/ 15.	15.1/ 2/ 15.	15.0/ 2/ 15.
THC BCKGRD METER/RANGE/PPM	13.8/ 2/ 14.	13.2/ 2/ 13.	11.9/ 2/ 12.	11.7/ 2/ 12.
CO SAMPLE METER/RANGE/PPM	4.4/ 12/ 4.	.8/ 12/ 1.	2.1/ 12/ 2.	.6/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.8/ 12/ 1.	.6/ 12/ 1.	.2/ 12/ 0.	.5/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	91.1/ 14/ .8940	73.8/ 14/ .5555	85.3/ 14/ .7618	72.1/ 14/ .5298
CO2 BCKGRD METER/RANGE/PCT	13.9/ 14/ .0474	13.5/ 14/ .0458	13.7/ 14/ .0466	13.6/ 14/ .0462
NOX SAMPLE METER/RANGE/PPM	87.0/ 1/ 21.7	27.8/ 1/ 7.0	42.2/ 1/ 10.5	24.8/ 1/ 6.2
NOX BCKGRD METER/RANGE/PPM	1.6/ 1/ .4	1.4/ 1/ .4	1.0/ 1/ .3	1.0/ 1/ .3
DILUTION FACTOR	14.94	24.05	17.55	25.22
THC CONCENTRATION PPM	12.	3.	4.	4.
CO CONCENTRATION PPM	3.	0.	2.	0.
CO2 CONCENTRATION PCT	.8498	.5116	.7178	.4854
NOX CONCENTRATION PPM	21.3	6.6	10.3	6.0
THC MASS GRAMS	.900	.366	.300	.501
CO MASS GRAMS	.529	.055	.277	.029
CO2 MASS GRAMS	2089.3	2162.0	1766.7	2052.1
NOX MASS GRAMS	4.574	2.447	2.214	2.207
THC GRAMS/MI	.253	.095	.084	.129
CO GRAMS/MI	.148	.014	.078	.007
CO2 GRAMS/MI	586.6	562.8	495.8	528.6
NOX GRAMS/MI	1.284	.637	.621	.568
FUEL ECONOMY IN MPG	15.090	15.424	17.874	17.277
RUN TIME SECONDS	505.	868.	505.	868.
MEASURED DISTANCE MI	3.56	7.40	3.56	7.45
SCF, DRY	.983	.985	.984	.985
DFC, WET (DRY)		.949(.940)		.954(.945)
TOT VOL (SCM) / SAM BLR (SCM)		365.1/ .00		365.3/ .00

COMPOSITE RESULTS

TEST NUMBER F1HCOK-02
BAROMETER MM HG 750.6
HUMIDITY G/KG 4.7
TEMPERATURE DEG C 22.2

CARBON DIOXIDE	G/MI	549.3	(539.3)
FUEL ECONOMY	MPG	16.129	(16.43)
HYDROCARBONS (THC)	G/MI	.125	(.13)
CARBON MONOXIDE	G/MI	.059	(.06)
OXIDES OF NITROGEN	G/MI	.767	(.75)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. FIHCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 750.32 MM HG(29.54 IN HG)
RELATIVE HUMIDITY 69. PCT
BAG RESULTS

VEHICLE NO.95
DATE 11/13/92
BAG CART NO. 1
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 11.7 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
GASOLINE EM-1540-F
ODOMETER 549. KM(341. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 6.16
NOX HUMIDITY CORRECTION FACTOR 1.03

TEST CYCLE

H-FET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)
BLOWER REVOLUTIONS	28947.
TOT FLOW STD. CU. METRES(SCF)	203.0 (7168.)
THC SAMPLE METER/RANGE/PPM	14.7/ 2/ 15.
THC BCKGRD METER/RANGE/PPM	11.7/ 2/ 12.
CO SAMPLE METER/RANGE/PPM	.7/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	95.3/ 14/ .9762
CO2 BCKGRD METER/RANGE/PCT	13.8/ 14/ .0853
NOX SAMPLE METER/RANGE/PPM	48.5/ 1/ 12.2
NOX BCKGRD METER/RANGE/PPM	1.3/ 1/ .3
DILUTION FACTOR	13.70
THC CONCENTRATION PPM	4.
CO CONCENTRATION PPM	1.
CO2 CONCENTRATION PCT	.8971
NOX CONCENTRATION PPM	11.9
THC MASS GRAMS	.451
CO MASS GRAMS	.131
CO2 MASS GRAMS	3334.1
NOX MASS GRAMS	4.781
RUN TIME SECONDS	765.
DFC, WET (DRY)	.927 (.906)
SCF, WET (DRY)	1.000 (.969)
VOL (SCH)	203.0
SAM BLR (SCH)	.00
MI (MEASURED)	10.16

TEST NUMBER,	FIHCOK-02
BAROMETER, MM HG	750.3
HUMIDITY, G/KG	11.7
TEMPERATURE, DEG C	22.2
CARBON DIOXIDE, G/MI	328.2
FUEL ECONOMY, MPG	27.00

HYDROCARBONS, (THC) G/MI	.044
CARBON MONOXIDE, G/MI	.013
OXIDES OF NITROGEN, G/MI	.471

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ST NO. FLHCK-02 RUN
HICLE MODEL 89 CROWN VICTORIA
GINE 4.9 L(302. CID) V-8
ANSMISSION A4

VEHICLE NO.95
DATE 11/13/92
BAG CART NO. 1
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 21.7 DEG C(71.0 DEG F)
ABS. HUMIDITY 5.6 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
GASOLINE EM-1540-F
ODOMETER 565. KM(351. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 6.16
NOX HUMIDITY CORRECTION FACTOR .85

ROMETER 750.06 MM HG(29.53 IN HG)
LATIVE HUMIDITY 34. PCT

G RESULTS

TEST CYCLE

NYCC

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)
BLOWER REVOLUTIONS	22653.
TOT FLOW STD. CU. METRES(SCF)	159.5 (5632.)
THC SAMPLE METER/RANGE/PPM	18.6/ 2/ 19.
THC BCKGRD METER/RANGE/PPM	15.5/ 2/ 16.
CO SAMPLE METER/RANGE/PPM	.5/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	67.7/ 14/ .5802
CO2 BCKGRD METER/RANGE/PCT	13.7/ 14/ .0846
NOX SAMPLE METER/RANGE/PPM	26.7/ 1/ 6.8
NOX BCKGRD METER/RANGE/PPM	1.3/ 1/ .3
DILUTION FACTOR	23.02
THC CONCENTRATION PPM	4.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.4993
NOX CONCENTRATION PPM	6.5
THC MASS GRAMS	.347
CO MASS GRAMS	.037
CO2 MASS GRAMS	1458.1
NOX MASS GRAMS	1.692
RUN TIME SECONDS	599.
DPC, WET (DRY)	.957 (.946)
SCF, WET (DRY)	1.000 (.984)
VOL (SCH)	159.5
SAM BLR (SCH)	.00
MI (MEASURED)	1.10

TEST NUMBER,	FLHCK-02
BAROMETER, MM HG	750.1
HUMIDITY, G/KG	5.6
TEMPERATURE, DEG C	21.7
CARBON DIOXIDE, G/MI	1320.5
FUEL ECONOMY, MPG	6.71

HYDROCARBONS, (THC) G/MI	.314
CARBON MONOXIDE, G/MI	.033
OXIDES OF NITROGEN, G/MI	1.533

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2H00K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

VEHICLE NO.95
DATE 11/10/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 349. KM(217. MILES)

BAROMETER 742.44 MM HG(29.23 IN HG)
RELATIVE HUMIDITY 57. PCT

DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 9.8 GM/KG

NOX HUMIDITY CORRECTION FACTOR .97

BAG RESULTS

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	41.7 (107.0)	43.3 (110.0)	42.2 (108.0)
BLOWER REVOLUTIONS	19091.	32846.	19104.	32845.
TOT FLOW STD. CU. METRES(SCF)	132.2 (4668.)	228.1 (8055.)	132.1 (4664.)	227.8 (8043.)
THC SAMPLE METER/RANGE/PPM	17.1/ 2/ 17.	13.5/ 2/ 13.	15.4/ 2/ 15.	14.8/ 2/ 15.
THC BCKGRD METER/RANGE/PPM	13.2/ 2/ 13.	13.7/ 2/ 14.	15.7/ 2/ 16.	14.9/ 2/ 15.
CO SAMPLE METER/RANGE/PPM	10.2/ 12/ 10.	.4/ 12/ 0.	.8/ 12/ 1.	.2/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.1/ 12/ 0.	.0/ 12/ 0.	.5/ 12/ 0.	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	89.7/ 14/ .8599	71.3/ 14/ .5181	83.8/ 14/ .7311	70.0/ 14/ .4995
CO2 BCKGRD METER/RANGE/PCT	14.6/ 14/ .0502	14.4/ 14/ .0494	14.6/ 14/ .0502	14.3/ 14/ .0490
NOX SAMPLE METER/RANGE/PPM	61.5/ 1/ 15.3	19.3/ 1/ 4.8	40.9/ 1/ 10.2	17.4/ 1/ 4.4
NOX BCKGRD METER/RANGE/PPM	.3/ 1/ .1	.2/ 1/ .1	.2/ 1/ .1	.2/ 1/ .1
DILUTION FACTOR	13.81	22.92	16.25	23.77
THC CONCENTRATION PPM	5.	0.	1.	1.
CO CONCENTRATION PPM	9.	0.	0.	0.
CO2 CONCENTRATION PCT	.8133	.4708	.6840	.4525
NOX CONCENTRATION PPM	15.2	4.8	10.2	4.3
THC MASS GRAMS	.735	.104	.101	.137
CO MASS GRAMS	1.427	.098	.045	.049
CO2 MASS GRAMS	1968.4	1966.3	1653.9	1887.1
NOX MASS GRAMS	3.737	2.031	2.493	1.826
THC GRAMS/MI	.205	.027	.028	.036
CO GRAMS/MI	.398	.025	.013	.013
CO2 GRAMS/MI	548.7	511.0	462.2	488.9
NOX GRAMS/MI	1.042	.528	.697	.473
FUEL ECONOMY IN MPG	8.650	8.977	9.30	9.72
RUN TIME SECONDS	505.	869.	506.	869.
MEASURED DISTANCE MI	3.59	7.44	3.58	7.44
SCF, DRY	.967	.970	.969	.973
DFC, WET (DRY)		.946(.928)		.951(.933)
TOT VOL (SCH) / SAM BLR (SCH)		360.3/ .00		359.8/ .00

COMPOSITE RESULTS

TEST NUMBER F2H00K-01
BAROMETER MM HG 742.4
HUMIDITY G/KG 9.8
TEMPERATURE DEG C 22.2

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	505.4	(498.9)
FUEL ECONOMY MPG	9.403	(9.53)
HYDROCARBONS (THC) G/MI	.064	(.07)
CARBON MONOXIDE G/MI	.099	(.10)
OXIDES OF NITROGEN G/MI	.681	(.66)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-PET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HCOK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 741.93 MM HG(29.21 IN HG)
RELATIVE HUMIDITY 55. PCT

BAG RESULTS

VEHICLE NO.95
DATE 11/10/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 10.5 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 373. KM(232. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .99

TEST CYCLE

H-PET

BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	43.3 (110.0)
BLOWER REVOLUTIONS	28949.
TOT FLOW STD. CU. METRES(SCF)	200.0 (7061.)
THC SAMPLE METER/RANGE/PPM	15.7/ 2/ 16.
THC BCKGRD METER/RANGE/PPM	16.5/ 2/ 16.
CO SAMPLE METER/RANGE/PPM	.8/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.5/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	93.3/ 14/ .9508
CO2 BCKGRD METER/RANGE/PCT	14.1/ 14/ .0482
NOX SAMPLE METER/RANGE/PPM	50.8/ 1/ 12.7
NOX BCKGRD METER/RANGE/PPM	.2/ 1/ .1
DILUTION FACTOR	12.50
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.9065
NOX CONCENTRATION PPM	12.6
THC MASS GRAMS	.119
CO MASS GRAMS	.069
CO2 MASS GRAMS	3318.6
NOX MASS GRAMS	4.784
RUN TIME SECONDS	767.
DPC, WET (DRY)	.920 (.904)
SCF, WET (DRY)	1.000 (.966)
VOL (SCH)	200.0
SAM BLR (SCH)	.00
MI (MEASURED)	10.18

TEST NUMBER,	F2HCOK-01
BAROMETER, MM HG	741.9
HUMIDITY, G/KG	10.5
TEMPERATURE, DEG C	23.9
CARBON DIOXIDE, G/MI	325.9
FUEL ECONOMY, MPG	14.59

HYDROCARBONS, (THC) G/MI	.012
CARBON MONOXIDE, G/MI	.007
OXIDES OF NITROGEN, G/MI	.470

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HCOK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 741.68 MM HG(29.20 IN HG)
RELATIVE HUMIDITY 48. PCT
BAG RESULTS

VEHICLE NO.95
DATE 11/10/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)
ABS. HUMIDITY 11.2 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 389. KM(242. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR 1.02

TEST CYCLE

NYCC

BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	43.3 (110.0)
BLOWER REVOLUTIONS	22652.
TOT FLOW STD. CU. METRES(SCF)	156.4 (5523.)
THC SAMPLE METER/RANGE/PPM	16.4/ 2/ 16.
THC BCKGRD METER/RANGE/PPM	16.4/ 2/ 16.
CO SAMPLE METER/RANGE/PPM	.3/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.2/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	66.1/ 14/ .4470
CO2 BCKGRD METER/RANGE/PCT	14.1/ 14/ .0482
NOX SAMPLE METER/RANGE/PPM	22.0/ 1/ 5.5
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0
DILUTION FACTOR	26.54
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.4006
NOX CONCENTRATION PPM	5.5
THC MASS GRAMS	.111
CO MASS GRAMS	.018
CO2 MASS GRAMS	1147.3
NOX MASS GRAMS	1.678
RUN TIME	599.
SECONDS	
DPC, WET (DRY)	.962 (.947)
SCF, WET (DRY)	1.000 (.977)
VOL (SCM)	156.4
SAM BLR (SCM)	.00
MI (MEASURED)	1.14

TEST NUMBER,	F2HCOK-01
BAROMETER,	MM HG
HUMIDITY,	G/KG
TEMPERATURE,	DEG C
CARBON DIOXIDE,	G/MI
FUEL ECONOMY,	MPG

HYDROCARBONS, (THC)	G/MI
CARBON MONOXIDE,	G/MI
OXIDES OF NITROGEN,	G/MI

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

VEHICLE NO.95
DATE 11/11/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 394. KM(245. MILES)

BAROMETER 739.90 MM HG(29.13 IN HG)
RELATIVE HUMIDITY 66. PCT

DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 12.7 GM/KG

NOX HUMIDITY CORRECTION FACTOR 1.07

BAG RESULTS

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	42.2 (108.0)	42.2 (108.0)	42.2 (108.0)
BLOWER REVOLUTIONS	19098.	32790.	19101.	32794.
TOT FLOW STD. CU. METRES(SCF)	131.9 (4658.)	226.5 (7997.)	131.9 (4658.)	226.5 (7997.)
THC SAMPLE METER/RANGE/PPM	15.2/ 2/ 15.	13.3/ 2/ 13.	13.5/ 2/ 13.	13.7/ 2/ 14.
THC BCKGRD METER/RANGE/PPM	10.9/ 2/ 11.	13.3/ 2/ 13.	12.6/ 2/ 13.	13.7/ 2/ 14.
CO SAMPLE METER/RANGE/PPM	11.8/ 12/ 11.	1.0/ 12/ 1.	1.6/ 12/ 2.	.9/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	1.0/ 12/ 1.	.9/ 12/ 1.	.8/ 12/ 1.	.9/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	89.8/ 14/ .8623	71.4/ 14/ .5195	83.8/ 14/ .7311	69.8/ 14/ .4967
CO2 BCKGRD METER/RANGE/PCT	14.2/ 14/ .0486	14.5/ 14/ .0498	14.4/ 14/ .0494	14.4/ 14/ .0494
NOX SAMPLE METER/RANGE/PPM	59.0/ 1/ 14.7	19.1/ 1/ 4.8	43.9/ 1/ 11.0	16.2/ 1/ 4.1
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0	.1/ 1/ .0	.1/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR	13.77	22.86	16.25	23.91
THC CONCENTRATION PPM	5.	1.	2.	1.
CO CONCENTRATION PPM	10.	0.	1.	0.
CO2 CONCENTRATION PCT	.8172	.4719	.6847	.4493
NOX CONCENTRATION PPM	14.7	4.8	10.9	4.1
THC MASS GRAMS	.769	.151	.253	.149
CO MASS GRAMS	1.528	.031	.117	.006
CO2 MASS GRAMS	1973.7	1956.5	1653.8	1863.2
NOX MASS GRAMS	3.961	2.209	2.950	1.884
THC GRAMS/MI	.215	.039	.070	.039
CO GRAMS/MI	.427	.008	.032	.002
CO2 GRAMS/MI	551.4	506.5	460.4	482.7
NOX GRAMS/MI	1.107	.572	.821	.488
FUEL ECONOMY IN MPG	8.608	8.995	9.39	10.324
RUN TIME SECONDS	505.	867.	505.	868.
MEASURED DISTANCE MI	3.58	7.44	3.59	7.45
SCF, DRY	.964	.967	.970	.970
DFC, WET (DRY)		.946(.925)		.951(.931)
TOT VOL (SCH) / SAM BLR (SCH)		358.4/ .00		358.4/ .00

COMPOSITE RESULTS

TEST NUMBER F2HCOK-02
BAROMETER MM HG 739.9
HUMIDITY G/KG 12.7
TEMPERATURE DEG C 23.9

CARBON DIOXIDE	G/MI	503.1	(496.1)
FUEL ECONOMY	MPG	9.445	(9.58)
HYDROCARBONS (THC)	G/MI	.084	(.08)
CARBON MONOXIDE	G/MI	.101	(.10)
OXIDES OF NITROGEN	G/MI	.751	(.73)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 739.14 MM HG(29.10 IN HG)
RELATIVE HUMIDITY 54. PCT
BAG RESULTS

TEST CYCLE

BLOWER DIP P MM. H2O(IN. H2O)
BLOWER INLET P MM. H2O(IN. H2O)
BLOWER INLET TEMP. DEG. C(DEG. F)
BLOWER REVOLUTIONS
TOT FLOW STD. CU. METRES(SCF)
THC SAMPLE METER/RANGE/PPM
THC BCKGRD METER/RANGE/PPM
CO SAMPLE METER/RANGE/PPM
CO BCKGRD METER/RANGE/PPM
CO2 SAMPLE METER/RANGE/PCT
CO2 BCKGRD METER/RANGE/PCT
NOX SAMPLE METER/RANGE/PPM
NOX BCKGRD METER/RANGE/PPM
DILUTION FACTOR
THC CONCENTRATION PPM
CO CONCENTRATION PPM
CO2 CONCENTRATION PCT
NOX CONCENTRATION PPM
THC MASS GRAMS
CO MASS GRAMS
CO2 MASS GRAMS
NOX MASS GRAMS
RUN TIME SECONDS
DFC, WET (DRY)
SCF, WET (DRY)
VOL (SCM)
SAM BLR (SCM)
MI (MEASURED)

VEHICLE NO.95
DATE 11/11/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 9.6 GM/KG

NYCC

1270.0 (50.0)
965.2 (38.0)
41.7 (107.0)
22691.
156.8 (5535.)
15.8/ 2/ 16.
14.6/ 2/ 15.
.8/ 12/ 1.
.8/ 12/ 1.
65.9/ 14/ .4444
14.7/ 14/ .0506
19.7/ 1/ 4.9
.1/ 1/ .0
26.69
2.
0.
.3957
4.9
.314
.003
1135.6
1.423
600.
.963 (.946)
1.000 (.975)
156.8
.00
1.14

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 433. KM(269. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .96

TEST NUMBER,		F2HCOK-02
BAROMETER,	MM HG	739.1
HUMIDITY,	G/KG	9.6
TEMPERATURE,	DEG C	22.8
CARBON DIOXIDE,	G/MI	997.5
FUEL ECONOMY,	MPG	4.76
HYDROCARBONS, (THC)	G/MI	.276
CARBON MONOXIDE,	G/MI	.003
OXIDES OF NITROGEN,	G/MI	1.250

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 739.39 MM HG(29.11 IN HG)
RELATIVE HUMIDITY 47. PCT
BAG RESULTS

VEHICLE NO.95
DATE 11/11/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)
ABS. HUMIDITY 10.3 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 418. KM(260. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .99

TEST CYCLE

H-FET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	28935.
TOT FLOW STD. CU. METRES(SCF)	199.7 (7050.)
THC SAMPLE METER/RANGE/PPM	14.6/ 2/ 15.
THC BCKGRD METER/RANGE/PPM	15.1/ 2/ 15.
CO SAMPLE METER/RANGE/PPM	1.0/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.6/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	93.2/ 14/ .9482
CO2 BCKGRD METER/RANGE/PCT	14.5/ 14/ .0498
NOX SAMPLE METER/RANGE/PPM	45.9/ 1/ 11.5
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
DILUTION FACTOR	12.54
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.9023
NOX CONCENTRATION PPM	11.4
THC MASS GRAMS	.161
CO MASS GRAMS	.092
CO2 MASS GRAMS	3298.5
NOX MASS GRAMS	4.300
RUN TIME SECONDS	766.
DFC, WET (DRY)	.920 (.906)
SCF, WET (DRY)	1.000 (.968)
VOL (SCH)	199.7
SAH BLR (SCH)	.00
MI (MEASURED)	10.13

TEST NUMBER,	F2HCOK-02
BAROMETER, MM HG	739.4
HUMIDITY, G/KG	10.3
TEMPERATURE, DEG C	26.1
CARBON DIOXIDE, G/MI	325.8
FUEL ECONOMY, MPG	14.59

HYDROCARBONS. (THC) G/MI	.016
CARBON MONOXIDE, G/MI	.009
OXIDES OF NITROGEN, G/MI	.425

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ST NO. F2HC2K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

VEHICLE NO.95
DATE 2/ 9/93
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 3819. KM(2373. MILES)

BAROMETER 738.12 MM HG(29.06 IN HG)
RELATIVE HUMIDITY 45. PCT

DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)
ABS. HUMIDITY 10.5 GM/KG

NOX HUMIDITY CORRECTION FACTOR .99

G RESULTS

BAG NUMBER	1	2	3	4
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIP P MM. H2O(IN. H2O)	1244.6 (49.0)	1244.6 (49.0)	1244.6 (49.0)	1244.6 (49.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)	41.7 (107.0)	42.2 (108.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19100.	32805.	19098.	32819.
TOT FLOW STD. CU. METRES(SCF)	132.0 (4659.)	226.6 (8002.)	131.7 (4652.)	226.7 (8006.)
THC SAMPLE METER/RANGE/PPM	16.6/ 2/ 17.	12.3/ 2/ 12.	10.6/ 2/ 11.	9.7/ 2/ 10.
THC BCKGRD METER/RANGE/PPM	12.0/ 2/ 12.	11.4/ 2/ 11.	9.2/ 2/ 9.	8.5/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	10.8/ 12/ 10.	.1/ 12/ 0.	3.1/ 12/ 3.	.3/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 0.	.1/ 12/ 0.	.4/ 12/ 0.	.3/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	89.1/ 14/ .8457	70.4/ 14/ .5051	82.1/ 14/ .6979	68.8/ 14/ .4828
CO2 BCKGRD METER/RANGE/PCT	14.1/ 14/ .0482	13.7/ 14/ .0466	12.8/ 14/ .0430	12.8/ 14/ .0430
NOX SAMPLE METER/RANGE/PPM	56.8/ 1/ 14.1	15.6/ 1/ 3.9	43.0/ 1/ 10.7	14.7/ 1/ 3.7
NOX BCKGRD METER/RANGE/PPM	.2/ 1/ .1	.0/ 1/ .0	.1/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR	14.04	23.52	17.03	24.61
THC CONCENTRATION PPM	5.	1.	2.	2.
CO CONCENTRATION PPM	10.	0.	2.	0.
CO2 CONCENTRATION PCT	.8010	.4605	.6574	.4415
NOX CONCENTRATION PPM	14.1	3.9	10.7	3.7
THC MASS GRAMS	.824	.359	.293	.401
CO MASS GRAMS	1.477	.001	.383	.002
CO2 MASS GRAMS	1935.1	1910.9	1585.6	1832.9
NOX MASS GRAMS	3.535	1.687	2.682	1.591
THC GRAMS/MI	.231	.093	.082	.104
CO GRAMS/MI	.414	.000	.108	.001
CO2 GRAMS/MI	542.0	495.9	445.0	477.0
NOX GRAMS/MI	.990	.438	.753	.414
FUEL ECONOMY IN MPG	8.757	9.168	10.678	10.295
RUN TIME SECONDS	505.	868.	505.	868.
MEASURED DISTANCE MI	3.57	7.42	3.56	7.41
SCF, DRY	.971	.974	.973	.976
DFC, WET (DRY)		.947(.933)		.953(.939)
TOT VOL (SCM) / SAM BLR (SCM)		358.6/ .00		358.5/ .00

OSITE RESULTS

TEST NUMBER F2HC2K-01
BAROMETER MM HG 738.1
HUMIDITY G/KG 10.5
TEMPERATURE DEG C 27.2

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	491.5	(485.9)
FUEL ECONOMY MPG	9.667	(9.78)
HYDROCARBONS (THC) G/MI	.119	(.12)
CARBON MONOXIDE G/MI	.115	(.12)
OXIDES OF NITROGEN G/MI	.638	(.63)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ST NO. F2HC2K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

VEHICLE NO.95
DATE 2/ 9/93
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
ABS. HUMIDITY 10.8 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 3843. KM(2388. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR 1.00

BAROMETER 737.87 MM HG(29.05 IN HG)
RELATIVE HUMIDITY 58. PCT
RESULTS
TEST CYCLE

HFET

BLOWER DIP P MM. H2O(IN. H2O)	1244.6 (49.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	28931.
TOT FLOW STD. CU. METRES(SCF)	199.5 (7044.)
THC SAMPLE METER/RANGE/PPM	9.3/ 2/ 9.
THC BCKGRD METER/RANGE/PPM	8.5/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	.5/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.5/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	92.5/ 14/ .9297
CO2 BCKGRD METER/RANGE/PCT	12.7/ 14/ .0426
NOX SAMPLE METER/RANGE/PPM	43.2/ 1/ 10.8
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0
DILUTION FACTOR	12.79
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.8904
NOX CONCENTRATION PPM	10.8
THC MASS GRAMS	.335
CO MASS GRAMS	.006
CO2 MASS GRAMS	3252.0
NOX MASS GRAMS	4.123
RUN TIME SECONDS	765.
DFC, WET (DRY)	.922 (.905)
SCF, WET (DRY)	1.000 (.965)
VOL (SCH)	199.5
SAM BLR (SCH)	.00
HI (MEASURED)	10.13

TEST NUMBER,	F2HC2K-01
BAROMETER, MM HG	737.9
HUMIDITY, G/KG	10.8
TEMPERATURE, DEG C	23.3
CARBON DIOXIDE, G/MI	321.1
FUEL ECONOMY, MPG	14.80

HYDROCARBONS, (THC) G/MI	.033
CARBON MONOXIDE, G/MI	.001
OXIDES OF NITROGEN, G/MI	.407

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HC2K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 737.87 MM HG(29.05 IN HG)
RELATIVE HUMIDITY 56. PCT
AG RESULTS

VEHICLE NO.95
DATE 2/ 9/93
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)
ABS. HUMIDITY 11.0 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 3859. KM(2398. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR 1.01

TEST CYCLE

NYCC

BLOWER DIP P MM. H2O(IN. H2O)	1244.6 (49.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	22468.
TOT FLOW STD. CU. METRES(SCF)	154.9 (5471.)
THC SAMPLE METER/RANGE/PPM	10.6/ 2/ 11.
THC BCKGRD METER/RANGE/PPM	9.0/ 2/ 9.
CO SAMPLE METER/RANGE/PPM	.3/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.2/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	64.0/ 14/ .4206
CO2 BCKGRD METER/RANGE/PCT	12.4/ 14/ .0415
NOX SAMPLE METER/RANGE/PPM	16.7/ 1/ 4.2
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
DILUTION FACTOR	28.24
THC CONCENTRATION PPM	2.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.3806
NOX CONCENTRATION PPM	4.2
THC MASS GRAMS	.340
CO MASS GRAMS	.017
CO2 MASS GRAMS	1079.6
NOX MASS GRAMS	1.247
RUN TIME SECONDS	594.
DPC, WET (DRY)	.965 (.947)
SCF, WET (DRY)	1.000 (.975)
VOL (SCM)	154.9
SAM BLR (SCM)	.00
MI (MEASURED)	1.16

TEST NUMBER,	F2HC2K-01
BAROMETER, MM HG	737.9
HUMIDITY, G/KG	11.0
TEMPERATURE, DEG C	24.4
CARBON DIOXIDE, G/MI	932.3
FUEL ECONOMY, MPG	5.10

HYDROCARBONS, (THC) G/MI	.294
CARBON MONOXIDE, G/MI	.015
OXIDES OF NITROGEN, G/MI	1.077

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HC2K-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

VEHICLE NO.95
DATE 2/10/93
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KN(12.6 HP)
METHANOL EM-1179-F
ODOMETER 3861. KM(2399. MILES)

BAROMETER 738.38 MM HG(29.07 IN HG)
RELATIVE HUMIDITY 58. PCT

DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 10.3 GM/KG

NOX HUMIDITY CORRECTION FACTOR .99

TEST RESULTS

BAG NUMBER	1	2	3	4
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIP P MM. H2O(IN. H2O)	1257.3 (49.5)	1257.3 (49.5)	1244.6 (49.0)	1244.6 (49.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	42.2 (108.0)	42.2 (108.0)	42.2 (108.0)
BLOWER REVOLUTIONS	19127.	32820.	19106.	32818.
TOT FLOW STD. CU. METRES(SCF)	131.9 (4658.)	226.3 (7992.)	131.9 (4656.)	226.5 (7997.)
THC SAMPLE METER/RANGE/PPM	14.8/ 2/ 15.	11.3/ 2/ 11.	10.3/ 2/ 10.	10.1/ 2/ 10.
THC BCKGRD METER/RANGE/PPM	9.5/ 2/ 9.	10.7/ 2/ 11.	9.6/ 2/ 10.	9.7/ 2/ 10.
CO SAMPLE METER/RANGE/PPM	15.6/ 12/ 15.	1.8/ 12/ 2.	3.7/ 12/ 4.	1.5/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	1.6/ 12/ 2.	1.9/ 12/ 2.	1.6/ 12/ 2.	1.2/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	88.7/ 14/ .8364	69.9/ 14/ .4981	82.1/ 14/ .6979	68.1/ 14/ .4733
CO2 BCKGRD METER/RANGE/PCT	13.8/ 14/ .0470	13.8/ 14/ .0470	12.9/ 14/ .0434	12.4/ 14/ .0415
NOX SAMPLE METER/RANGE/PPM	55.0/ 1/ 13.7	17.2/ 1/ 4.3	41.9/ 1/ 10.5	15.8/ 1/ 4.0
NOX BCKGRD METER/RANGE/PPM	.2/ 1/ .1	.0/ 1/ .0	.1/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR	14.19	23.85	17.03	25.10
THC CONCENTRATION PPM	6.	1.	1.	1.
CO CONCENTRATION PPM	13.	0.	2.	0.
CO2 CONCENTRATION PCT	.7928	.4531	.6570	.4335
NOX CONCENTRATION PPM	13.7	4.3	10.4	4.0
THC MASS GRAMS	.902	.272	.191	.204
CO MASS GRAMS	1.996	.011	.305	.081
CO2 MASS GRAMS	1914.5	1877.4	1586.1	1797.6
NOX MASS GRAMS	3.398	1.844	2.598	1.696
THC GRAMS/MI	.253	.071	.053	.054
CO GRAMS/MI	.559	.003	.085	.021
CO2 GRAMS/MI	536.0	490.4	444.5	471.8
NOX GRAMS/MI	.951	.482	.728	.445
FUEL ECONOMY IN MPG	8.850	9.267	10.691	10.364
RUN TIME SECONDS	505.	867.	505.	868.
MEASURED DISTANCE MI	3.57	7.40	3.57	7.38
SCF, DRY	.967	.970	.969	.972
DPC, WET (DRY)		.948(.930)		.953(.935)
TOT VOL (SCM) / SAM BLR (SCM)		358.2/ .00		358.3/ .00

TEST SITE RESULTS

TEST NUMBER F2HC2K-02
BAROMETER MM HG 738.4
HUMIDITY G/KG 10.3
TEMPERATURE DEG C 22.8

CARBON DIOXIDE	G/MI	3-BAG	(4-BAG)
FUEL ECONOMY	MPG	9.751	(9.86)
HYDROCARBONS (THC)	G/MI	.104	(.10)
CARBON MONOXIDE	G/MI	.138	(.15)
OXIDES OF NITROGEN	G/MI	.647	(.64)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ST NO. F2HCZK-02 RUN
ICLE MODEL 89 CROWN VICTORIA
INE 4.9 L(302. CID) V-8
MISSION A4

VEHICLE NO.95
DATE 2/10/93
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
ABS. HUMIDITY 10.8 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 3885. KM(2414. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
MOX HUMIDITY CORRECTION FACTOR 1.00

OMETER 738.12 MM HG(29.06 IN HG)
ATIVE HUMIDITY 58. PCT

RESULTS
TEST CYCLE

H-FET

BLOWER DIP P MM. H2O(IN. H2O)	1257.3 (49.5)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	28939.
TOT FLOW STD. CU. METRES(SCF)	199.5 (7044.)
THC SAMPLE METER/RANGE/PPM	8.9/ 2/ 9.
THC BCKGRD METER/RANGE/PPM	8.4/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	1.4/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	1.4/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	91.9/ 14/ .9142
CO2 BCKGRD METER/RANGE/PCT	12.9/ 14/ .0434
NOX SAMPLE METER/RANGE/PPM	41.7/ 1/ 10.4
NOX BCKGRD METER/RANGE/PPM	.3/ 1/ .1
DILUTION FACTOR	13.01
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.8741
NOX CONCENTRATION PPM	10.3
THC MASS GRAMS	.262
CO MASS GRAMS	.016
CO2 MASS GRAMS	3192.4
NOX MASS GRAMS	3.954
RUN TIME SECONDS	765.
DPC, WET (DRY)	.923 (.906)
SCP, WET (DRY)	1.000 (.965)
VOL (SCH)	199.5
SAM BLR (SCH)	.00
MI (MEASURED)	10.18

EST NUMBER,	F2HCZK-02
AROMETER, MM HG	738.1
UMIDITY, G/KG	10.8
EMPERATURE, DEG C	23.3
ARBON DIOXIDE, G/MI	313.6
UEL ECONOMY, MPG	15.16

YDROCARBONS, (THC) G/MI	.026
ARBON MONOXIDE, G/MI	.002
XIDES OF NITROGEN, G/MI	.388

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HC2K-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L(302. CID) V-8
TRANSMISSION A4

BAROMETER 738.12 MM HG(29.06 IN HG)
RELATIVE HUMIDITY 58. PCT
RESULTS
TEST CYCLE

VEHICLE NO.95
DATE 2/10/93
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 10.3 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 3901. KM(2424. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .99

	NYCC
BLOWER DIP P MM. H2O(IN. H2O)	1244.6 (49.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	22694.
TOT FLOW STD. CU. METRES(SCF)	156.8 (5536.)
THC SAMPLE METER/RANGE/PPM	9.4/ 2/ 9.
THC BCKGRD METER/RANGE/PPM	8.2/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	1.5/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	1.5/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	64.1/ 14/ .4218
CO2 BCKGRD METER/RANGE/PCT	12.4/ 14/ .0415
NOX SAMPLE METER/RANGE/PPM	18.5/ 1/ 4.6
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
DILUTION FACTOR	28.16
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.3819
NOX CONCENTRATION PPM	4.6
THC MASS GRAMS	.268
CO MASS GRAMS	.006
CO2 MASS GRAMS	1096.2
NOX MASS GRAMS	1.367
RUN TIME SECONDS	600.
DPC, WET (DRY)	.964 (.947)
SCF, WET (DRY)	1.000 (.974)
VOL (SCM)	156.8
SAM BLR (SCM)	.00
MI (MEASURED)	1.13

TEST NUMBER,	F2HC2K-02
BAROMETER, MM HG	738.1
HUMIDITY, G/KG	10.3
TEMPERATURE, DEG C	22.8
CARBON DIOXIDE, G/MI	968.3
FUEL ECONOMY, MPG	4.91

HYDROCARBONS, (THC) G/MI	.237
CARBON MONOXIDE, G/MI	.005
OXIDES OF NITROGEN, G/MI	1.208

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

4-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	95	TEST	F2HC4K-01	GASOLINE	EM-1179-F
VEHICLE MODEL	89 CROWN VICTORIA	DATE	5/10/93	RUN	1
ENGINE	4.9 L (302 CID)-V-8	DYNO	2	BAG CART	2
TRANSMISSION	14	ACTUAL ROAD LOAD	12.60 HP (9.40 KW)	FUEL DENSITY	6.568 LB/GAL
ODOMETER	4595 MILES (7393 KM)	TEST WEIGHT	4250 LBS (1927 KG)	H	.128 C .436 O .436 X .000

BAROMETRIC PRESSURE	29.41 IN HG (747.0 MM HG)	DRY BULB TEMPERATURE	78.0°F (25.6°C)	NOX HUMIDITY C.F.	.908
RELATIVE HUMIDITY	36.7 PCT.				

BAG NUMBER	1	2	3	4
BAG DESCRIPTION	COLD TRANSIENT (0-505 SEC.)	STABILIZED (505-1372 SEC.)	HOT TRANSIENT (0- 505 SEC.)	HOT STABILIZED (505-1372 SEC.)
RUN TIME SECONDS	506.1	867.9	505.9	868.6
DRY/WET CORRECTION FACTOR, SAMP/BACK	.974/.988	.979/.988	.976/.988	.980/.988
MEASURED DISTANCE MILES (KM)	3.61 (5.80)	3.86 (6.21)	3.59 (5.77)	3.87 (6.23)
BLOWER FLOW RATE SCFM (SCMM)	560.8 (15.88)	560.7 (15.88)	559.8 (15.85)	559.6 (15.85)
MASS FLOW RATE SCFM (SCMM)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
TOTAL FLOW SCF (SCM)	4731. (134.0)	8110. (229.7)	4720. (133.7)	8102. (229.4)

HC SAMPLE METER/RANGE/PPM (BAG)	23.3/ 5/ 11.68	73.1/ 1/ 7.33	74.6/ 1/ 7.48	74.8/ 1/ 7.50
HC BCKGRD METER/RANGE/PPM	13.0/ 5/ 6.52	66.9/ 1/ 6.71	63.6/ 1/ 6.38	68.0/ 1/ 6.82
CO SAMPLE METER/RANGE/PPM	9.0/ 12/ 8.61	.0/ 12/ .00	4.6/ 12/ 4.38	.0/ 12/ .00
CO BCKGRD METER/RANGE/PPM	.2/ 12/ .19	.0/ 12/ .00	.0/ 12/ .00	.0/ 12/ .00
CO2 SAMPLE METER/RANGE/PCT	87.7/ 14/ .8137	68.7/ 14/ .4814	81.1/ 14/ .6790	67.8/ 14/ .4693
CO2 BCKGRD METER/RANGE/PCT	13.0/ 14/ .0438	12.7/ 14/ .0426	12.4/ 14/ .0415	12.4/ 14/ .0415
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	58.6/ 1/ 14.66	20.2/ 1/ 5.05	45.2/ 1/ 11.30	18.9/ 1/ 4.73
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .03	.0/ 1/ .00	.2/ 1/ .05	.1/ 1/ .03
H4 SAMPLE PPM (1.120)	4.38	3.09	3.18	3.04
H4 BCKGRD PPM	2.56	2.42	2.38	2.33

DILUTION FACTOR	14.64	24.77	17.56	25.41
HC CONCENTRATION PPM	5.61	.89	1.47	.95
CO CONCENTRATION PPM	8.15	.00	4.25	.00
CO2 CONCENTRATION PCT	.7729	.4405	.6399	.4295
NOX CONCENTRATION PPM	14.63	5.05	11.26	4.70
H4 CONCENTRATION PPM	1.99	.77	.94	.80
NMHC CONCENTRATION PPM	3.38	.03	.42	.06

IDHC MASS GRAMS	.861	.235	.225	.250
CO MASS GRAMS	1.270	.000	.662	.000
CO2 MASS GRAMS	1895.68	1852.56	1566.13	1804.09
NOX MASS GRAMS	3.403	2.014	2.612	1.873
H4 MASS GRAMS	.178	.118	.083	.122
NMHC MASS GRAMS (FID)	.261	.004	.032	.008
FUEL MASS KG	1.189	1.160	.982	1.130
FUEL ECONOMY MPG (L/100KM)	9.03 (26.05)	9.91 (23.75)	10.89 (21.61)	10.21 (23.05)

BAG COMPOSITE RESULTS

FIDHC	G/MI	.099	CH4	G/MI	.033
CO	G/MI	.124	NMHC	G/MI	.018
NOX	G/MI	.655			
FUEL ECONOMY MPG (L/100KM)		10.07 (23.37)			

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

1-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

ICLE NUMBER	95	TEST F2HC4K-01	GASOLINE	EM-1179-F
ICLE MODEL	89 CROWN VICTORIA	DATE	5/ 7/93	RUN 1
INE	4.9 L (302 CID)-V-8	DYNO	2	BAG CART 2
NSMISSION	A4	ACTUAL ROAD LOAD	12.60 HP (9.40 KW)	FUEL DENSITY 6.568 LB/GAL
METER	4571 MILES (7354 KM)	TEST WEIGHT	4250 LBS (1927 KG)	H .128 C .436 O .436 X .000
				HFET

OMETER	29.06 IN HG (738.1 MM HG)	DRY BULB TEMPERATURE	77.0°F (25.0°C)	NOX HUMIDITY C.F.	1.026
ATIVE HUMIDITY	56.1 PCT.				

AG NUMBER	1
AG DESCRIPTION	
UN TIME SECONDS	765.0
RY/WET CORRECTION FACTOR, SAMP/BACK	.966/.982
EAASURED DISTANCE MILES (KM)	10.13 (16.30)
OWER FLOW RATE SCFM (SCMM)	559.2 (15.84)
AS METER FLOW RATE SCFM (SCMM)	.00 (.00)
OTAL FLOW SCF (SCH)	7129. (201.9)

2 SAMPLE METER/RANGE/PPM (BAG)	19.2/ 5/ 9.62
2 BCKGRD METER/RANGE/PPM	18.6/ 5/ 9.32
0 SAMPLE METER/RANGE/PPM	3.3/ 12/ 3.14
0 BCKGRD METER/RANGE/PPM	.6/ 12/ .57
02 SAMPLE METER/RANGE/PCT	90.8/ 14/ .8866
02 BCKGRD METER/RANGE/PCT	14.8/ 14/ .0510
0X SAMPLE METER/RANGE/PPM (BAG) (D)	34.9/ 1/ 8.73
0X BCKGRD METER/RANGE/PPM	.5/ 1/ .13
14 SAMPLE PPM (1.120)	3.49
14 BCKGRD PPM	2.91

ILUTION FACTOR	13.45
2 CONCENTRATION PPM	.99
0 CONCENTRATION PPM	2.49
02 CONCENTRATION PCT	.8393
0X CONCENTRATION PPM	8.61
14 CONCENTRATION PPM	.80
HC CONCENTRATION PPM	.10

1DHC MASS GRAMS	.230
0 MASS GRAMS	.585
02 MASS GRAMS	3102.57
0X MASS GRAMS	3.413
14 MASS GRAMS	.108
HC MASS GRAMS (FID)	.011
EL MASS KG	1.944
EL ECONOMY MPG (L/100KM)	15.53 (15.15)

G COMPOSITE RESULTS

FIDHC	G/MI	.023	CH4	G/MI	.011
CO	G/MI	.058	NMHC	G/MI	.001
NOX	G/MI	.337			
FUEL ECONOMY MPG (L/100KM)	15.53 (15.15)				

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

1-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

ICLE NUMBER	95	TEST F2HC4K-01	GASOLINE EM-1179-F
ICLE MODEL	89 CROWN VICTORIA	DATE 5/ 7/93 RUN 1	FUEL DENSITY 6.568 LB/GAL
INE	4.9 L (302 CID)-V-8	DYNO 2 BAG CART 2	H .128 C .436 O .436 X .000
NSMISSION	A4	ACTUAL ROAD LOAD 12.60 HP (9.40 KW)	NYCC
METER	4581 MILES (7370 KM)	TEST WEIGHT 4250 LBS (1927 KG)	

OMETER	29.06 IN HG (738.1 MM HG)	DRY BULB TEMPERATURE	77.0°F (25.0°C)	NOX HUMIDITY C.F.	1.026
ATIVE HUMIDITY	56.1 PCT.				

AG NUMBER	1
AG DESCRIPTION	
UN TIME SECONDS	600.1
RY/WET CORRECTION FACTOR, SAMP/BACK	.974/.982
EASURED DISTANCE MILES (KM)	1.13 (1.82)
LOWER FLOW RATE SCFM (SCMH)	560.6 (15.88)
AS METER FLOW RATE SCFM (SCMH)	.00 (.00)
OTAL FLOW SCF (SCM)	5607. (158.8)

C SAMPLE METER/RANGE/PPM (BAG)	19.7/ 5/ 9.87
C BCKGRD METER/RANGE/PPM	17.8/ 5/ 8.92
O SAMPLE METER/RANGE/PPM	.5/ 12/ .47
O BCKGRD METER/RANGE/PPM	.6/ 12/ .57
O2 SAMPLE METER/RANGE/PCT	63.9/ 14/ .4194
O2 BCKGRD METER/RANGE/PCT	14.5/ 14/ .0498
OX SAMPLE METER/RANGE/PPM (BAG) (D)	17.3/ 1/ 4.33
OX BCKGRD METER/RANGE/PPM	.5/ 1/ .13
H4 SAMPLE PPM (1.120)	3.74
H4 BCKGRD PPM	2.80

ILUTION FACTOR	28.41
C CONCENTRATION PPM	1.27
O CONCENTRATION PPM	-.08
O2 CONCENTRATION PCT	.3713
OX CONCENTRATION PPM	4.21
H4 CONCENTRATION PPM	1.04
HC CONCENTRATION PPM	.11

EDHC MASS GRAMS	.230
O MASS GRAMS	.000
O2 MASS GRAMS	1079.43
OX MASS GRAMS	1.311
H4 MASS GRAMS	.110
HC MASS GRAMS (FID)	.010
EL MASS KG	.676
EL ECONOMY MPG (L/100KM)	4.97 (47.29)

BAG COMPOSITE RESULTS

FIDHC	G/MI	.204	CH4	G/MI	.097
CO	G/MI	.000	NMHC	G/MI	.009
NOX	G/MI	1.161			
FUEL ECONOMY MPG (L/100KM)		4.97 (47.29)			

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

4-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	95	TEST F2HC4K-02	GASOLINE EM-1179-F
VEHICLE MODEL	89 CROWN VICTORIA	DATE 5/11/93 RUN 1	FUEL DENSITY 6.568 LB/GAL
ENGINE	4.9 L (302 CID)-V-8	DYNO 2 BAG CART 2	H .128 C .436 O .436 X .000
TRANSMISSION	A4	ACTUAL ROAD LOAD 12.60 HP (9.40 KW)	
ODOMETER	4620 MILES (7433 KM)	TEST WEIGHT 4250 LBS (1927 KG)	

BAROMETER 29.25 IN HG (743.0 MM HG)	DRY BULB TEMPERATURE 74.0°F (23.3°C)	NOX HUMIDITY C.F. .936
RELATIVE HUMIDITY 47.1 PCT.		

BAG NUMBER	1	2	3	4
BAG DESCRIPTION	COLD TRANSIENT (0-505 SEC.)	STABILIZED (505-1372 SEC.)	HOT TRANSIENT (0- 505 SEC.)	HOT STABILIZED (505-1372 SEC.)
RUN TIME SECONDS	506.4	868.6	505.7	867.9
DRY/WET CORRECTION FACTOR, SAMP/BACK	.972/.986	.978/.986	.974/.986	.978/.986
MEASURED DISTANCE MILES (KM)	3.60 (5.79)	3.87 (6.23)	3.59 (5.77)	3.87 (6.22)
BLOWER FLOW RATE SCFM (SCHM)	555.6 (15.74)	555.6 (15.74)	554.0 (15.69)	553.7 (15.68)
GAS METER FLOW RATE SCFM (SCHM)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
TOTAL FLOW SCF (SCH)	4690. (132.8)	8044. (227.8)	4669. (132.2)	8009. (226.8)
HC SAMPLE METER/RANGE/PPM (BAG)	30.9/ 5/ 15.49	18.8/ 5/ 9.42	14.3/ 5/ 7.17	15.0/ 5/ 7.52
HC BCKGRD METER/RANGE/PPM	20.2/ 5/ 10.12	17.9/ 5/ 8.97	11.9/ 5/ 5.96	13.9/ 5/ 6.97
CO SAMPLE METER/RANGE/PPM	47.8/ 12/ 46.58	1.5/ 12/ 1.43	.8/ 12/ .76	.3/ 12/ .28
CO BCKGRD METER/RANGE/PPM	1.6/ 12/ 1.52	1.6/ 12/ 1.52	.2/ 12/ .19	.3/ 12/ .28
CO2 SAMPLE METER/RANGE/PCT	87.9/ 14/ .8182	69.3/ 14/ .4897	31.4/ 14/ .6846	68.3/ 14/ .4760
CO2 BCKGRD METER/RANGE/PCT	14.0/ 14/ .0478	14.5/ 14/ .0498	12.9/ 14/ .0434	13.0/ 14/ .0438
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	60.9/ 1/ 15.23	20.2/ 1/ 5.05	51.8/ 1/ 12.96	20.0/ 1/ 5.00
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .23	1.1/ 1/ .28	.2/ 1/ .05	.3/ 1/ .08
CH4 SAMPLE PPM (1.120)	5.94	4.28	3.51	3.43
CH4 BCKGRD PPM	3.57	3.65	2.69	2.67
DILUTION FACTOR	14.49	24.34	17.43	25.05
HC CONCENTRATION PPM	6.06	.82	1.54	.83
CO CONCENTRATION PPM	43.43	.0	.56	.01
CO2 CONCENTRATION PCT	.7737	.4419	.6437	.4340
NOX CONCENTRATION PPM	15.02	4.79	12.91	4.93
CH4 CONCENTRATION PPM	2.62	.78	.97	.87
NMHC CONCENTRATION PPM	3.13	.0	.45	.00
FIDEC MASS GRAMS	.922	.214	.234	.216
CO MASS GRAMS	6.715	.000	.086	.002
CO2 MASS GRAMS	1881.29	1843.11	1558.41	1802.11
NOX MASS GRAMS	3.572	1.953	3.056	2.002
CH4 MASS GRAMS	.232	.118	.086	.131
NMHC MASS GRAMS (FID)	.240	.000	.035	.000
FUEL MASS KG	1.186	1.154	.976	1.129
FUEL ECONOMY MPG (L/100KM)	9.04 (26.02)	9.99 (23.55)	10.94 (21.50)	10.20 (23.06)

4-BAG COMPOSITE RESULTS

FIDEC G/Mi	.100	CH4 G/Mi	.037
CO G/Mi	.393	NMHC G/Mi	.016
NOX G/Mi	.705		
FUEL ECONOMY MPG (L/100KM)	10.10 (23.29)		

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

1-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	95	TEST F2HC4K-02	GASOLINE EM-1179-F
VEHICLE MODEL	89 CROWN VICTORIA	DATE 5/11/93 RUN 1	FUEL DENSITY 6.568 LB/GAL
ENGINE	4.9 L (302 CID)-V-8	DYNO 2 BAG CART 2	H .128 C .436 O .436 X .000
TRANSMISSION	34	ACTUAL ROAD LOAD 12.60 HP (9.40 KW)	HFET
ODOMETER	4639 MILES (7464 KM)	TEST WEIGHT 4250 LBS (1927 KG)	

BAROMETER 29.24 IN HG (742.7 MM HG)	DRY BULB TEMPERATURE 79.0°F (26.1°C)	NOX HUMIDITY C.F. 1.007
RELATIVE HUMIDITY 50.3 PCT.		

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	765.3
DRY/WET CORRECTION FACTOR, SAMP/BACK	.967/.983
MEASURED DISTANCE MILES (KM)	10.13 (16.30)
BLOWER FLOW RATE SCFM (SCMH)	553.3 (15.67)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)
TOTAL FLOW SCF (SCM)	7058. (199.9)

HC SAMPLE METER/RANGE/PPM (BAG)	80.2/ 1/ 8.05
HC BCKGRD METER/RANGE/PPM	74.8/ 1/ 7.50
CO SAMPLE METER/RANGE/PPM	.3/ 12/ .28
CO BCKGRD METER/RANGE/PPM	.0/ 12/ .00
CO2 SAMPLE METER/RANGE/PCT	90.6/ 14/ .8817
CO2 BCKGRD METER/RANGE/PCT	13.0/ 14/ .0438
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	48.7/ 1/ 12.18
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .00
CH4 SAMPLE PPM (1.120)	3.25
CH4 BCKGRD PPM	2.70

DILUTION FACTOR	13.54
HC CONCENTRATION PPM	1.10
CO CONCENTRATION PPM	.27
CO2 CONCENTRATION PCT	.8411
NOX CONCENTRATION PPM	12.18
CH4 CONCENTRATION PPM	.75
NMHC CONCENTRATION PPM	.25

FIDHC MASS GRAMS	.251
CO MASS GRAMS	.064
CO2 MASS GRAMS	3077.80
NOX MASS GRAMS	4.687
CH4 MASS GRAMS	.100
NMHC MASS GRAMS (FID)	.029
FUEL MASS KG	1.928
FUEL ECONOMY MPG (L/100KM)	15.66 (15.03)

1-BAG COMPOSITE RESULTS

FIDHC G/MI	.025	CH4 G/MI	.010
CO G/MI	.006	NMHC G/MI	.003
NOX G/MI	.463		
FUEL ECONOMY MPG (L/100KM)	15.66 (15.03)		

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R 1-BAG CARB FTP VEHICLE EMISSION RESULTS PROJECT NO. 08-5102-001

VEHICLE NUMBER 95	TEST F2HC4K-02	GASOLINE EM-1179-F
VEHICLE MODEL 89 CROWN VICTORIA	DATE 5/11/93 RUN 1	FUEL DENSITY 6.568 LB/GAL
ENGINE 4.9 L (302 CID)-V-8	DYNO 2 BAG CART 2	H .128 C .436 O .436 X .000
TRANSMISSION A4	ACTUAL ROAD LOAD 12.60 HP (9.40 KW)	NYCC
ODOMETER 4649 MILES (7480 KM)	TEST WEIGHT 4250 LBS (1927 KG)	

BAROMETER 29.24 IN HG (742.7 MM HG)	DRY BULB TEMPERATURE 80.0°F (26.7°C)	NOX HUMIDITY C.F. .934
RELATIVE HUMIDITY 38.3 PCT.		

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	600.3
DRY/WET CORRECTION FACTOR, SAMP/BACK	.979/.986
MEASURED DISTANCE MILES (KM)	1.14 (1.83)
BLOWER FLOW RATE SCFM (SCMH)	555.7 (15.74)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)
TOTAL FLOW SCF (SCM)	5560. (157.5)

HC SAMPLE METER/RANGE/PPM (BAG)	86.0/	1/	8.63
HC BCKGRD METER/RANGE/PPM	75.5/	1/	7.58
CO SAMPLE METER/RANGE/PPM	.2/	12/	.19
CO BCKGRD METER/RANGE/PPM	.0/	12/	.00
CO2 SAMPLE METER/RANGE/PCT	64.3/	14/	.4243
CO2 BCKGRD METER/RANGE/PCT	12.9/	14/	.0434
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	21.6/	1/	5.40
NOX BCKGRD METER/RANGE/PPM	.0/	1/	.00
CH4 SAMPLE PPM (1.120)			3.63
CH4 BCKGRD PPM			2.71

DILUTION FACTOR	28.10
HC CONCENTRATION PPM	1.32
CO CONCENTRATION PPM	.19
CO2 CONCENTRATION PCT	.3824
NOX CONCENTRATION PPM	5.40
CH4 CONCENTRATION PPM	1.01
NMHC CONCENTRATION PPM	.19

FIDHC MASS GRAMS	.239
CO MASS GRAMS	.034
CO2 MASS GRAMS	1102.50
NOX MASS GRAMS	1.519
CH4 MASS GRAMS	.106
NMHC MASS GRAMS (FID)	.017
FUEL MASS KG	.691
FUEL ECONOMY MPG (L/100KM)	4.91 (47.93)

1-BAG COMPOSITE RESULTS

FIDHC G/MI	.210	CH4 G/MI	.093
CO G/MI	.030	NMHC G/MI	.015
NOX G/MI	1.335		
FUEL ECONOMY MPG (L/100KM)	4.91 (47.93)		

APPENDIX V

COMPUTER PRINTOUTS OF CROWN VICTORIA #2 CHECKOUT EMISSIONS TEST RESULTS

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V20EM-CK RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO.38463
DATE 9/29/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 38393. KM(23856. MILES)

BAROMETER 748.28 MM HG(29.46 IN HG)
RELATIVE HUMIDITY 43. PCT
BAG RESULTS

DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 7.5 GM/KG

NOX HUMIDITY CORRECTION FACTOR .954

BAG NUMBER DESCRIPTION	1 COLD TRANSIENT	2 STABILIZED	3 HOT TRANSIENT	4 STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	939.8 (37.0)	939.8 (37.0)	939.8 (37.0)	939.8 (37.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)	37.8 (100.0)	40.6 (105.0)	37.8 (100.0)
BLOWER REVOLUTIONS	19147.	32848.	19126.	32830.
TOT FLOW STD. CU. METRES(SCF)	134.9 (4763.)	233.5 (8245.)	134.9 (4764.)	233.3 (8240.)
THC SAMPLE METER/RANGE/PPM	35.7/ 2/ 36.	10.6/ 2/ 11.	10.0/ 2/ 10.	9.2/ 2/ 9
THC BCKGRD METER/RANGE/PPM	9.1/ 2/ 9.	9.5/ 2/ 9.	5.9/ 2/ 6.	7.4/ 2/ 7
CO SAMPLE METER/RANGE/PPM	73.4/ 13/ 177.	.9/ 12/ 1.	27.1/ 12/ 27.	1.2/ 12/ 1
CO BCKGRD METER/RANGE/PPM	.1/ 13/ 0.	.5/ 12/ 1.	.7/ 12/ 1.	.3/ 12/ 0
CO2 SAMPLE METER/RANGE/PCT	85.7/ 14/ .7702	69.4/ 14/ .4911	80.5/ 14/ .6680	68.3/ 14/ .47
CO2 BCKGRD METER/RANGE/PCT	13.2/ 14/ .0446	12.7/ 14/ .0426	12.2/ 14/ .0407	11.9/ 14/ .03
NOX SAMPLE METER/RANGE/PPM	56.2/ 1/ 14.0	19.4/ 1/ 4.9	38.4/ 1/ 9.6	17.6/ 1/ 4.
NOX BCKGRD METER/RANGE/PPM	1.6/ 1/ .4	1.9/ 1/ .5	.8/ 1/ .2	.5/ 1/ .
DILUTION FACTOR	15.06	24.20	17.74	24.97
THC CONCENTRATION PPM	27.	1.	4.	2.
CO CONCENTRATION PPM	170.	0.	25.	1.
CO2 CONCENTRATION PCT	.7285	.4502	.6296	.4381
NOX CONCENTRATION PPM	13.6	4.4	9.4	4.3
THC MASS GRAMS	4.203	.399	.685	.560
CO MASS GRAMS	26.741	.111	4.003	.244
CO2 MASS GRAMS	1799.2	1924.7	1555.2	1871.5
NOX MASS GRAMS	3.178	1.782	2.197	1.735
THC GRAMS/MI	1.158	.102	.189	.143
CO GRAMS/MI	7.367	.028	1.103	.062
CO2 GRAMS/MI	495.7	492.6	428.5	478.5
NOX GRAMS/MI	.876	.456	.605	.444
FUEL ECONOMY IN MPG	9.340	9.498	11.043	10.436
RUN TIME SECONDS	505.	867.	505.	868.
MEASURED DISTANCE MI	3.63	7.54	3.63	7.54
SCF, DRY	.973	.976	.974	.977
DFC, WET (DRY)		.949(.936)		.954(.941)
TOT VOL (SCM) / SAM BLR (SCM)		368.4/ .00		368.3/ .00

COMPOSITE RESULTS

TEST NUMBER V20EM-CK
BAROMETER MM HG 748.3
HUMIDITY G/KG 7.5
TEMPERATURE DEG C 22.8

CARBON DIOXIDE G/MI 475.6 (471)
FUEL ECONOMY MPG 9.925 (10.)
HYDROCARBONS (THC) G/MI .345 (.)
CARBON MONOXIDE G/MI 1.843 (1.)
OXIDES OF NITROGEN G/MI .584 (.)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V20EM-CK2 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO. 38463
DATE 10/ 9/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 38446. KM(23889. MILES)

BAROMETER 742.95 MM HG(29.25 IN HG)
RELATIVE HUMIDITY 31. PCT
BAG RESULTS

DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 5.9 GM/KG

NOX HUMIDITY CORRECTION FACTOR .86

BAG NUMBER DESCRIPTION	1 COLD TRANSIENT	2 STABILIZED	3 HOT TRANSIENT	4 STABILIZED
BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	39.4 (103.0)	40.0 (104.0)	38.9 (102.0)	38.9 (102.0)
BLOWER REVOLUTIONS	19135.	32809.	19127.	32829.
TOT FLOW STD. CU. METRES(SCF)	133.9 (4727.)	229.2 (8092.)	134.0 (4731.)	230.0 (8120.)
THC SAMPLE METER/RANGE/PPM	39.4/ 2/ 39.	13.1/ 2/ 13.	15.6/ 2/ 16.	14.9/ 2/ 15.
THC BCKGRD METER/RANGE/PPM	11.2/ 2/ 11.	11.7/ 2/ 12.	12.4/ 2/ 12.	12.5/ 2/ 12.
CO SAMPLE METER/RANGE/PPM	57.6/ 13/ 136.	3.4/ 12/ 3.	11.4/ 12/ 11.	3.6/ 12/ 4.
CO BCKGRD METER/RANGE/PPM	1.4/ 13/ 3.	3.1/ 12/ 3.	2.5/ 12/ 3.	2.9/ 12/ 3.
CO2 SAMPLE METER/RANGE/PCT	86.5/ 14/ .7873	70.2/ 14/ .5023	81.1/ 14/ .6790	68.9/ 14/ .4842
CO2 BCKGRD METER/RANGE/PCT	15.4/ 14/ .0535	15.4/ 14/ .0535	15.5/ 14/ .0540	15.6/ 14/ .0544
NOX SAMPLE METER/RANGE/PPM	74.0/ 1/ 18.4	27.6/ 1/ 6.9	56.3/ 1/ 14.0	23.6/ 1/ 5.9
NOX BCKGRD METER/RANGE/PPM	1.4/ 1/ .4	1.7/ 1/ .4	1.1/ 1/ .3	1.0/ 1/ .3
DILUTION FACTOR	14.81	23.64	17.47	24.51
THC CONCENTRATION PPM	29.	2.	4.	3.
CO CONCENTRATION PPM	129.	0.	9.	1.
CO2 CONCENTRATION PCT	.7373	.4510	.6282	.4320
NOX CONCENTRATION PPM	18.1	6.5	13.8	5.7
THC MASS GRAMS	4.440	.497	.600	.767
CO MASS GRAMS	20.046	.102	1.368	.206
CO2 MASS GRAMS	1807.3	1892.3	1541.0	1819.0
NOX MASS GRAMS	3.993	2.461	3.042	2.155
THC GRAMS/MI	1.230	.128	.167	.198
CO GRAMS/MI	5.554	.026	.381	.053
CO2 GRAMS/MI	500.8	486.1	429.1	470.9
NOX GRAMS/MI	1.106	.632	.847	.558
FUEL ECONOMY IN MPG	9.296	9.539	11.058	10.533
RUN TIME SECONDS	505.	866.	505.	868.
MEASURED DISTANCE MI	3.61	7.50	3.59	7.45
SCF, DRY	.976	.979	.978	.980
DFC, WET (DRY)		.948(.939)		.953(.944)
TOT VOL (SCM) / SAM BLR (SCM)		363.0/ .00		364.0/ .00

COMPOSITE RESULTS

TEST NUMBER V20EM-CK2
BAROMETER MM HG 743.0
HUMIDITY G/KG 5.9
TEMPERATURE DEG C 23.9

CARBON DIOXIDE	G/MI	473.6	(469.0
FUEL ECONOMY	MPG	9.986	(10.08
HYDROCARBONS (THC)	G/MI	.367	(.39
CARBON MONOXIDE	G/MI	1.267	(1.28
OXIDES OF NITROGEN	G/MI	.789	(.77

APPENDIX W

COMPUTER PRINTOUTS OF CROWN VICTORIA #2 TASK 3 EMISSION TEST RESULTS

Page W-	Test No.	Fuel	Catalyst	Test Cycle
2	V2DC0K-01	M85	Degussa	FTP
3	V2DC0K-01	M85	Degussa	HFET
4	V2DC0K-01	M85	Degussa	NYCC
5	V2DC0K-02	M85	Degussa	FTP
6	V2DC0K-02	M85	Degussa	HFET
7	V2DC0K-02	M85	Degussa	NYCC
8	V1DC0K-01	Howell EEE	Degussa	FTP
9	V1DC0K-01	Howell EEE	Degussa	HFET
10	V1DC0K-01	Howell EEE	Degussa	NYCC
11	V1DC0K-02	Howell EEE	Degussa	FTP
12	V1DC0K-02	Howell EEE	Degussa	HFET
13	V1DC0K-02	Howell EEE	Degussa	NYCC
14	V2DC2K-01	M85	Degussa	FTP
15	V2DC2K-01	M85	Degussa	HFET
16	V2DC2K-01	M85	Degussa	NYCC
17	V2DC2K-02	M85	Degussa	FTP
18	V2DC2K-02	M85	Degussa	HFET
19	V2DC2K-02	M85	Degussa	NYCC
20	V2DC4K-01	M85	Degussa	FTP
21	V2DC4K-01	M85	Degussa	HFET
22	V2DC4K-01	M85	Degussa	NYCC
23	V2DC4K-02	M85	Degussa	FTP
24	V2DC4K-02	M85	Degussa	HFET
25	V2DC4K-02	M85	Degussa	NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. VIDCOK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO.38463
DATE 11/12/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1540-F
ODOMETER 38661. KM(24023. MILES)

BAROMETER 744.98 MM HG(29.33 IN HG)
RELATIVE HUMIDITY 32. PCT
BAG RESULTS

DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 5.4 GM/KG

NOX HUMIDITY CORRECTION FACTOR .85

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	41.7 (107.0)	41.1 (106.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19128.	32831.	19122.	32791.
TOT FLOW STD. CU. METRES(SCF)	133.2 (4704.)	229.0 (8086.)	133.6 (4716.)	228.7 (8075.)
THC SAMPLE METER/RANGE/PPM	48.5/ 2/ 48.	10.6/ 2/ 11.	8.2/ 2/ 8.	7.8/ 2/ 8.
THC BCKGRD METER/RANGE/PPM	7.1/ 2/ 7.	7.4/ 2/ 7.	7.2/ 2/ 7.	7.4/ 2/ 7.
CO SAMPLE METER/RANGE/PPM	61.8/ 13/ 147.	10.5/ 12/ 10.	5.3/ 12/ 5.	1.9/ 12/ 2.
CO BCKGRD METER/RANGE/PPM	.1/ 13/ 0.	.2/ 12/ 0.	.1/ 12/ 0.	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	46.1/ 1/ .8548	72.3/ 14/ .5328	83.9/ 14/ .7331	70.6/ 14/ .5080
CO2 BCKGRD METER/RANGE/PCT	12.5/ 1/ .2245	12.4/ 14/ .0415	12.3/ 14/ .0411	12.4/ 14/ .0415
NOX SAMPLE METER/RANGE/PPM	38.3/ 1/ 9.6	2.8/ 1/ .7	34.3/ 1/ 8.6	7.0/ 1/ 1.8
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1	.4/ 1/ .1	.3/ 1/ .1	.4/ 1/ .1
DILUTION FACTOR	15.33	25.06	18.25	26.33
THC CONCENTRATION PPM	42.	3.	1.	1.
CO CONCENTRATION PPM	142.	10.	5.	2.
CO2 CONCENTRATION PCT	.6449	.4930	.6943	.4681
NOX CONCENTRATION PPM	9.5	.6	8.5	1.7
THC MASS GRAMS	3.214	.461	.107	.090
CO MASS GRAMS	22.093	2.580	.753	.471
CO2 MASS GRAMS	1573.0	2066.7	1697.8	1959.9
NOX MASS GRAMS	2.055	.226	1.850	.618
THC GRAMS/MI	.893	.120	.030	.023
CO GRAMS/MI	6.141	.669	.211	.123
CO2 GRAMS/MI	437.2	535.7	475.3	512.9
NOX GRAMS/MI	.571	.059	.518	.162
FUEL ECONOMY IN MPG	22.628	20.560	21.391	20.556
RUN TIME SECONDS	505.	868.	506.	867.
MEASURED DISTANCE MI	3.60	7.46	3.57	7.39
SCF, DRY	.982	.984	.983	.984
DFC, WET (DRY)		.951(.941)		.956(.946)
TOT VOL (SCH) / SAM BLR (SCH)		362.2/ .00		362.3/ .00

COMPOSITE RESULTS

TEST NUMBER VIDCOK-01
BAROMETER MM HG 745.0
HUMIDITY G/KG 5.4
TEMPERATURE DEG C 22.2

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	498.7	(491.9)
FUEL ECONOMY MPG	20.264	(20.56)
HYDROCARBONS (THC) G/MI	.256	(.23)
CARBON MONOXIDE G/MI	1.679	(1.52)
OXIDES OF NITROGEN G/MI	.291	(.32)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-5102-001

TEST NO. VIDCOK-01 RUN
 VEHICLE MODEL 39 CROWN VICTORIA
 ENGINE 5.0 L(305. CID) V-8
 TRANSMISSION L4

BAROMETER 745.49 MM HG(29.35 IN HG)
 RELATIVE HUMIDITY 34. PCT
 BAG RESULTS

VEHICLE NO.38463
 DATE 11/12/92
 BAG CART NO. 2
 DYNO NO. 2
 CVS NO. 8
 DRY BULB TEMP. 21.7 DEG C(71.0 DEG F)
 ABS. HUMIDITY 5.6 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
 ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
 M85 EM-1540-F
 ODOMETER 38685. KM(24038. MILES)
 C = .866 H = .134 O = .000
 FUEL DENSITY = 7.07
 NOX HUMIDITY CORRECTION FACTOR .86

TEST CYCLE

HFET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	28932.
TOT FLOW STD. CU. METRES(SCF)	201.6 (7120.)
THC SAMPLE METER/RANGE/PPM	8.2/ 2/ 8.
THC BCKGRD METER/RANGE/PPM	8.2/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	.2/ 12/ 0.
CO BCKGRD METER/RANGE/PPM	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	92.7/ 14/ .9349
CO2 BCKGRD METER/RANGE/PCT	12.4/ 14/ .0415
NOX SAMPLE METER/RANGE/PPM	56.0/ 1/ 13.9
NOX BCKGRD METER/RANGE/PPM	.3/ 1/ .1
DILUTION FACTOR	14.32
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.8964
NOX CONCENTRATION PPM	13.9
THC MASS GRAMS	.067
CO MASS GRAMS	.043
CO2 MASS GRAMS	3308.9
NOX MASS GRAMS	4.581
RUN TIME	765.
SECONDS	
DFC, WET (DRY)	.930 (.920)
SCF, WET (DRY)	1.000 (.980)
VOL (SCH)	201.6
SAM BLR (SCH)	.00
MI (MEASURED)	10.10

TEST NUMBER,	VIDCOK-01
BAROMETER,	MM HG
HUMIDITY,	G/KG
TEMPERATURE,	DEG C
CARBON DIOXIDE,	G/MI
FUEL ECONOMY,	MPG

HYDROCARBONS, (THC)	G/MI	.007
CARBON MONOXIDE,	G/MI	.004
OXIDES OF NITROGEN,	G/MI	.454

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. VIDCOK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

BAROMETER 747.78 MM HG(29.44 IN HG)
RELATIVE HUMIDITY 49. PCT
AG RESULTS

VEHICLE NO.38463
DATE 11/16/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 8.4 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1540-F
ODOMETER 38777. KM(24095. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 7.07
NOX HUMIDITY CORRECTION FACTOR .93

TEST CYCLE

NYCC

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	22715.
TOT FLOW STD. CU. METRES(SCF)	158.9 (5611.)
THC SAMPLE METER/RANGE/PPM	24.1/ 2/ 24.
THC BCKGRD METER/RANGE/PPM	18.6/ 2/ 19.
CO SAMPLE METER/RANGE/PPM	27.1/ 12/ 26.
CO BCKGRD METER/RANGE/PPM	1.5/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	66.4/ 14/ .4509
CO2 BCKGRD METER/RANGE/PCT	14.2/ 14/ .0486
NOX SAMPLE METER/RANGE/PPM	5.9/ 1/ 1.5
NOX BCKGRD METER/RANGE/PPM	.2/ 1/ .1
DILUTION FACTOR	29.40
THC CONCENTRATION PPM	6.
CO CONCENTRATION PPM	24.
CO2 CONCENTRATION PCT	.4039
NOX CONCENTRATION PPM	1.4
THC MASS GRAMS	.562
CO MASS GRAMS	4.482
CO2 MASS GRAMS	1175.0
NOX MASS GRAMS	.405
RUN TIME SECONDS	600.
DFC, WET (DRY)	.966 (.951)
SCF, WET (DRY)	1.000 (.980)
VOL (SCM)	158.9
SAM BLR (SCM)	.00
MI (MEASURED)	1.14

TEST NUMBER,	VIDCOK-01
BAROMETER, MM HG	747.8
HUMIDITY, G/KG	8.4.
TEMPERATURE, DEG C	22.2
CARBON DIOXIDE, G/MI	1029.1
FUEL ECONOMY, MPG	9.81

HYDROCARBONS, (THC) G/MI	.492
CARBON MONOXIDE, G/MI	3.925
OXIDES OF NITROGEN, G/MI	.354

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. VIDCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO. 38463
DATE 11/13/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1540-F
ODOMETER 38706. KM(24051. MILES)

BAROMETER 750.57 MM HG(29.55 IN HG)
RELATIVE HUMIDITY 27. PCT
BAG RESULTS

DRY BULB TEMP. 21.7 DEG C(71.0 DEG F)
ABS. HUMIDITY 4.4 GM/KG

NOX HUMIDITY CORRECTION FACTOR .83

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	43.3 (110.0)	42.2 (108.0)	41.7 (107.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19136.	32887.	19105.	32869.
TOT FLOW STD. CU. METRES(SCF)	134.1 (4734.)	231.1 (8160.)	134.4 (4747.)	231.3 (8167.)
THC SAMPLE METER/RANGE/PPM	45.0/ 2/ 45.	11.1/ 2/ 11.	8.6/ 2/ 9.	11.5/ 2/ 11.
THC BCKGRD METER/RANGE/PPM	8.1/ 2/ 8.	8.1/ 2/ 8.	7.7/ 2/ 8.	8.2/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	51.1/ 13/ 120.	9.9/ 12/ 9.	4.2/ 12/ 4.	14.9/ 12/ 14.
CO BCKGRD METER/RANGE/PPM	.0/ 13/ 0.	.4/ 12/ 0.	1.0/ 12/ 1.	.5/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	89.2/ 14/ .8481	72.5/ 14/ .5357	83.3/ 14/ .7212	70.6/ 14/ .5080
CO2 BCKGRD METER/RANGE/PCT	13.2/ 14/ .0446	13.5/ 14/ .0458	13.3/ 14/ .0450	13.3/ 14/ .0450
NOX SAMPLE METER/RANGE/PPM	43.1/ 1/ 10.8	3.1/ 1/ .8	25.1/ 1/ 6.3	1.2/ 1/ .3
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2	.7/ 1/ .2	.7/ 1/ .2	1.3/ 1/ .3
DILUTION FACTOR	15.50	24.92	18.55	26.25
THC CONCENTRATION PPM	37.	3.	1.	4.
CO CONCENTRATION PPM	117.	9.	3.	14.
CO2 CONCENTRATION PCT	.8064	.4918	.6786	.4647
NOX CONCENTRATION PPM	10.6	.6	6.1	.0
THC MASS GRAMS	2.891	.443	.102	.481
CO MASS GRAMS	18.212	2.405	.473	3.664
CO2 MASS GRAMS	1979.4	2080.7	1670.3	1967.8
NOX MASS GRAMS	2.257	.223	1.305	.005
THC GRAMS/MI	.804	.115	.029	.126
CO GRAMS/MI	5.066	.624	.133	.958
CO2 GRAMS/MI	550.5	539.9	469.4	514.4
NOX GRAMS/MI	.628	.058	.367	.001
FUEL ECONOMY IN MPG	18.137	18.475	21.663	20.606
RUN TIME SECONDS	505.	869.	505.	869.
MEASURED DISTANCE MI	3.60	7.45	3.56	7.38
SCF, DRY	.983	.985	.985	.986
DFC, WET (DRY)		.951(.943)		.956(.948)
TOT VOL (SCH) / SAM BLR (SCH)		365.2/ .00		365.7/ .00

COMPOSITE RESULTS

TEST NUMBER VIDCOK-02
BAROMETER MM HG 750.6
HUMIDITY G/KG 4.4
TEMPERATURE DEG C 21.7

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	522.8	(515.2)
FUEL ECONOMY MPG	19.354	(19.63)
HYDROCARBONS (THC) G/MI	.234	(.24)
CARBON MONOXIDE G/MI	1.411	(1.51)
OXIDES OF NITROGEN G/MI	.261	(.24)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. WIDCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

BAROMETER 750.82 MM HG(29.56 IN HG)
RELATIVE HUMIDITY 32. PCT

BAG RESULTS

VEHICLE NO.38463

DATE 11/13/92

BAG CART NO. 2

DYNO NO. 2

CVS NO. 8

DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)

ABS. HUMIDITY 5.3 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)

ACTUAL ROAD LOAD 9.4 KW(12.6 HP)

M85 EM-1540-F

ODOMETER 38730. KM(24066. MILES)

C = .866 H = .134 O = .000

FUEL DENSITY = 7.07

NOX HUMIDITY CORRECTION FACTOR .85

TEST CYCLE

HFET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	28963.
TOT FLOW STD. CU. METRES(SCF)	203.6 (7189.)
THC SAMPLE METER/RANGE/PPM	9.3/ 2/ 9.
THC BCKGRD METER/RANGE/PPM	8.9/ 2/ 9.
CO SAMPLE METER/RANGE/PPM	1.0/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.9/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	92.6/ 14/ .9323
CO2 BCKGRD METER/RANGE/PCT	13.5/ 14/ .0458
NOX SAMPLE METER/RANGE/PPM	48.1/ 1/ 12.0
NOX BCKGRD METER/RANGE/PPM	1.0/ 1/ .3
DILUTION FACTOR	14.36
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.8897
NOX CONCENTRATION PPM	11.8
THC MASS GRAMS	.120
CO MASS GRAMS	.032
CO2 MASS GRAMS	3316.2
NOX MASS GRAMS	3.889
RUN TIME SECONDS	766.
DFC, WET (DRY)	.930 (.921)
SCF, WET (DRY)	1.000 (.981)
VOL (SCH)	203.6
SAH BLR (SCH)	.00
MI (MEASURED)	10.09

TEST NUMBER,	WIDCOK-02
BAROMETER, MM HG	750.8
HUMIDITY, G/KG	5.3
TEMPERATURE, DEG C	22.2
CARBON DIOXIDE, G/MI	328.8
FUEL ECONOMY, MPG	30.95

HYDROCARBONS, (THC) G/MI	.012
CARBON MONOXIDE, G/MI	.003
OXIDES OF NITROGEN, G/MI	.386

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

EST NO. VIDCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

BAROMETER 750.57 MM HG(29.55 IN HG)
RELATIVE HUMIDITY 32. PCT
AG RESULTS

VEHICLE NO.38463
DATE 11/13/92
BAG CART NO. 2
DYN0 NO. 2
CVS NO. 8
DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 5.3 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1540-F
ODOMETER 38745. KM(24075. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 7.07
NOX HUMIDITY CORRECTION FACTOR .85

TEST CYCLE

NYCC

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	22660.
TOT FLOW STD. CU. METRES(SCF)	159.4 (5630.)
THC SAMPLE METER/RANGE/PPH	19.9/ 2/ 20.
THC BCKGRD METER/RANGE/PPH	17.6/ 2/ 18.
CO SAMPLE METER/RANGE/PPH	13.5/ 12/ 13.
CO BCKGRD METER/RANGE/PPH	.7/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	65.5/ 14/ .4393
CO2 BCKGRD METER/RANGE/PCT	13.5/ 14/ .0458
NOX SAMPLE METER/RANGE/PPH	3.2/ 1/ .8
NOX BCKGRD METER/RANGE/PPH	.9/ 1/ .2
DILUTION FACTOR	30.28
THC CONCENTRATION PPM	3.
CO CONCENTRATION PPM	12.
CO2 CONCENTRATION PCT	.3951
NOX CONCENTRATION PPM	.6
THC MASS GRAMS	.265
CO MASS GRAMS	2.244
CO2 MASS GRAMS	1153.2
NOX MASS GRAMS	.152
RUN TIME SECONDS	599.
DPC, WET (DRY)	.967 (.957)
SCF, WET (DRY)	1.000 (.986)
VOL (SCH)	159.4
SAM BLR (SCH)	.00
MI (MEASURED)	1.13

TEST NUMBER,	VIDCOK-02
BAROMETER, MM HG	750.6
HUMIDITY, G/KG	5.3
TEMPERATURE, DEG C	22.2
CARBON DIOXIDE, G/MI	1020.7
FUEL ECONOMY, MPG	9.93
HYDROCARBONS, (THC) G/MI	.234
CARBON MONOXIDE, G/MI	1.986
OXIDES OF NITROGEN, G/MI	.134

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V2DOCK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO.38463
DATE 11/10/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 38528. KM(23940. MILES)

BAROMETER 742.70 MM HG(29.24 IN HG)
RELATIVE HUMIDITY 58. PCT

DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 10.2 GM/KG

NOX HUMIDITY CORRECTION FACTOR .98

BAG RESULTS

BAG NUMBER
DESCRIPTION

1	2	3	4
COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	41.1 (106.0)	43.3 (110.0)
BLOWER REVOLUTIONS	19119.	32793.	19110.
TOT FLOW STD. CU. METRES(SCF)	132.5 (4678.)	228.2 (8058.)	132.2 (4667.)
THC SAMPLE METER/RANGE/PPH	33.5/ 2/ 33.	12.6/ 2/ 13.	12.0/ 2/ 12.
THC BCKGRD METER/RANGE/PPH	11.5/ 2/ 11.	12.6/ 2/ 13.	12.5/ 2/ 12.
CO SAMPLE METER/RANGE/PPH	49.7/ 13/ 116.	2.5/ 12/ 2.	3.1/ 12/ 3.
CO BCKGRD METER/RANGE/PPH	.3/ 13/ 1.	1.3/ 12/ 1.	.5/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	87.3/ 14/ .8048	70.0/ 14/ .4995	81.5/ 14/ .6865
CO2 BCKGRD METER/RANGE/PCT	14.4/ 14/ .0494	14.6/ 14/ .0502	14.5/ 14/ .0498
NOX SAMPLE METER/RANGE/PPH	38.4/ 1/ 9.6	11.2/ 1/ 2.8	31.3/ 1/ 7.8
NOX BCKGRD METER/RANGE/PPH	.6/ 1/ .2	.6/ 1/ .2	.0/ 1/ .0
DILUTION FACTOR	14.54	23.78	17.31
THC CONCENTRATION PPM	23.	1.	0.
CO CONCENTRATION PPM	111.	1.	2.
CO2 CONCENTRATION PCT	.7588	.4514	.6396
NOX CONCENTRATION PPM	9.5	2.7	7.8
THC MASS GRAMS	3.458	.139	.034
CO MASS GRAMS	17.097	.303	.369
CO2 MASS GRAMS	1840.2	1885.8	1547.7
NOX MASS GRAMS	2.359	1.147	1.950
THC GRAMS/MI	.956	.036	.009
CO GRAMS/MI	4.727	.078	.103
CO2 GRAMS/MI	508.7	485.1	432.2
NOX GRAMS/MI	.652	.295	.545
FUEL ECONOMY IN MPG	9.184	9.492	10.996
RUN TIME SECONDS	505.	867.	506.
MEASURED DISTANCE MI	3.62	7.50	3.58
SCF, DRY	.967	.971	.969
DFC, WET (DRY)		.948(.930)	.953(.935)
TOT VOL (SCM) / SAM BLR (SCM)		360.7/ .00	360.4/ .00

WPOSITE RESULTS

TEST NUMBER V2DOCK-01
BAROMETER MM HG 742.7
HUMIDITY G/KG 10.2
TEMPERATURE DEG C 22.8

CARBON DIOXIDE	G/MI	475.6	(471.0)
FUEL ECONOMY	MPG	9.956	(10.05)
HYDROCARBONS (THC)	G/MI	.219	(.22)
CARBON MONOXIDE	G/MI	1.048	(1.04)
OXIDES OF NITROGEN	G/MI	.437	(.45)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

EST NO. V2D00K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

BAROMETER 742.44 MM HG(29.23 IN HG)
RELATIVE HUMIDITY 54. PCT
AG RESULTS

VEHICLE NO.38463
DATE 11/10/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
ABS. HUMIDITY 10.0 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 38550. KM(23954. MILES)
C = .436 H = .128 O = .437
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .98

TEST CYCLE

H-FET

BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)
BLOWER REVOLUTIONS	28941.
TOT FLOW STD. CU. METRES(SCF)	200.4 (7077.)
THC SAMPLE METER/RANGE/PPM	13.5/ 2/ 13.
THC BCKGRD METER/RANGE/PPM	14.2/ 2/ 14.
CO SAMPLE METER/RANGE/PPM	.8/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.8/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	91.4/ 14/ .9015
CO2 BCKGRD METER/RANGE/PCT	14.6/ 14/ .0502
NOX SAMPLE METER/RANGE/PPM	63.8/ 1/ 15.9
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0
DILUTION FACTOR	13.19
THC CONCENTRATION PPM	0.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.8551
NOX CONCENTRATION PPM	15.9
THC MASS GRAMS	.086
CO MASS GRAMS	.009
CO2 MASS GRAMS	3137.6
NOX MASS GRAMS	5.941
RUN TIME SECONDS	765.
DPC, WET (DRY)	.924 (.908)
SCF, WET (DRY)	1.000 (.967)
VOL (SCM)	200.4
SAM BLR (SCM)	.00
MI (MEASURED)	10.13

TEST NUMBER,	V2D00K-01
BAROMETER, MM HG	742.4
HUMIDITY, G/KG	10.0
TEMPERATURE, DEG C	23.3
CARBON DIOXIDE, G/MI	309.6
FUEL ECONOMY, MPG	15.36

HYDROCARBONS, (THC) G/MI	.009
CARBON MONOXIDE, G/MI	.001
OXIDES OF NITROGEN, G/MI	.586

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V2DOCK-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

BAROMETER 742.70 MM HG(29.24 IN HG)
RELATIVE HUMIDITY 57. PCT
BAG RESULTS

VEHICLE NO.38463
DATE 11/10/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 9.8 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 38566. KM(23964. MILES)
C = .436 H = .128 O = .437
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .97

TEST CYCLE

NYCC

BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	22649.
TOT FLOW STD. CU. METRES(SCF)	157.1 (5548.)
THC SAMPLE METER/RANGE/PPM	14.6/ 2/ 15.
THC BCKGRD METER/RANGE/PPM	13.3/ 2/ 13.
CO SAMPLE METER/RANGE/PPM	3.8/ 12/ 4.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	64.4/ 14/ .4255
CO2 BCKGRD METER/RANGE/PCT	14.4/ 14/ .0494
NOX SAMPLE METER/RANGE/PPM	13.3/ 1/ 3.3
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1
DILUTION FACTOR	27.87
THC CONCENTRATION PPM	2.
CO CONCENTRATION PPM	3.
CO2 CONCENTRATION PCT	.3779
NOX CONCENTRATION PPM	3.2
THC MASS GRAMS	.320
CO MASS GRAMS	.576
CO2 MASS GRAMS	1087.1
NOX MASS GRAMS	.946
RUN TIME	599.
DPF, WET (DRY)	.964 (.946)
SCF, WET (DRY)	1.000 (.974)
VOL (SCM)	157.1
SAM BLR (SCM)	.00
MI (MEASURED)	1.13

TEST NUMBER,	V2DOCK-01
BAROMETER, MM HG	742.7
HUMIDITY, G/KG	9.8
TEMPERATURE, DEG C	22.2
CARBON DIOXIDE, G/MI	965.8
FUEL ECONOMY, MPG	4.92

HYDROCARBONS, (THC) G/MI	.284
CARBON MONOXIDE, G/MI	.512
OXIDES OF NITROGEN, G/MI	.840

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ST NO. V2DCK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO. 38463
DATE 11/11/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 38573. KM(23968. MILES)

BAROMETER 740.66 MM HG(29.16 IN HG)
RELATIVE HUMIDITY 66. PCT

DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
ABS. HUMIDITY 12.2 GR/KG

NOX HUMIDITY CORRECTION FACTOR 1.05

G RESULTS

BAG NUMBER	1	2	3	4
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	42.2 (108.0)	43.3 (110.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19134.	32844.	19102.	32804.
TOT FLOW STD. CU. METRES(SCF)	132.1 (4666.)	227.1 (8021.)	131.7 (4651.)	227.2 (8022.)
THC SAMPLE METER/RANGE/PPM	29.1/ 2/ 29.	11.2/ 2/ 11.	11.0/ 2/ 11.	10.9/ 2/ 11.
THC BCKGRD METER/RANGE/PPM	11.5/ 2/ 11.	11.4/ 2/ 11.	10.5/ 2/ 10.	11.1/ 2/ 11.
CO SAMPLE METER/RANGE/PPM	44.5/ 13/ 104.	1.8/ 12/ 2.	3.3/ 12/ 3.	1.5/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.5/ 13/ 1.	1.4/ 12/ 1.	.8/ 12/ 1.	.7/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	86.6/ 14/ .7894	69.3/ 14/ .4897	80.9/ 14/ .6753	68.2/ 14/ .4747
CO2 BCKGRD METER/RANGE/PCT	13.7/ 14/ .0466	13.7/ 14/ .0466	13.6/ 14/ .0462	13.5/ 14/ .0458
NOX SAMPLE METER/RANGE/PPM	31.5/ 1/ 7.9	10.7/ 1/ 2.7	23.3/ 1/ 5.8	9.1/ 1/ 2.3
NOX BCKGRD METER/RANGE/PPM	1.1/ 1/ .3	.6/ 1/ .2	.7/ 1/ .2	.3/ 1/ .1
DILUTION FACTOR	14.84	24.25	17.60	25.02
THC CONCENTRATION PPM	18.	0.	1.	0.
CO CONCENTRATION PPM	98.	0.	2.	1.
CO2 CONCENTRATION PCT	.7460	.4450	.6318	.4307
NOX CONCENTRATION PPM	7.6	2.5	5.7	2.2
THC MASS GRAMS	2.781	.070	.165	.063
CO MASS GRAMS	15.080	.107	.355	.199
CO2 MASS GRAMS	1804.8	1850.8	1523.4	1791.6
NOX MASS GRAMS	2.025	1.160	1.502	1.010
THC GRAMS/MI	.773	.018	.046	.017
CO GRAMS/MI	4.191	.028	.099	.052
CO2 GRAMS/MI	501.6	478.0	425.0	468.2
NOX GRAMS/MI	.563	.300	.419	.264
FUEL ECONOMY IN MPG	9.333	9.641	9.95	11.182
RUN TIME SECONDS	505.	868.	505.	867.
MEASURED DISTANCE MI	3.60	7.47	3.87	7.41
SCF, DRY	.965	.968	.970	.969
DPC, WET (DRY)		.949(.929)		.954(.934)
TOT VOL (SCH) / SAM BLR (SCH)		359.3/ .00		358.9/ .00

OPPOSITE RESULTS

TEST NUMBER V2DCK-02
BAROMETER MM HG 740.7
HUMIDITY G/KG 12.2
TEMPERATURE DEG C 23.3

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	468.4	(465.4)
FUEL ECONOMY MPG	10.115	(10.18)
HYDROCARBONS (THC) G/MI	.182	(.18)
CARBON MONOXIDE G/MI	.909	(.92)
OXIDES OF NITROGEN G/MI	.387	(.38)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V2DCOK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

BAROMETER 740.41 MM HG(29.15 IN HG)
RELATIVE HUMIDITY 59. PCT

BAG RESULTS

TEST CYCLE

BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	28936.
TOT FLOW STD. CU. METRES(SCF)	200.0 (7063.)
THC SAMPLE METER/RANGE/PPM	12.6/ 2/ 13.
THC BCKGRD METER/RANGE/PPM	13.0/ 2/ 13.
CO SAMPLE METER/RANGE/PPM	.9/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.9/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	90.4/ 14/ .8768
CO2 BCKGRD METER/RANGE/PCT	13.6/ 14/ .0462
NOX SAMPLE METER/RANGE/PPM	40.9/ 1/ 10.2
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1
DILUTION FACTOR	13.56
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.8340
NOX CONCENTRATION PPM	10.1
THC MASS GRAMS	.128
CO MASS GRAMS	.010
CO2 MASS GRAMS	3054.1
NOX MASS GRAMS	3.936
RUN TIME	765.
SECONDS	
DFC, WET (DRY)	.926 (.909)
SCF, WET (DRY)	1.000 (.966)
VOL (SCH)	200.0
SAM BLR (SCH)	.00
MI (MEASURED)	10.11

VEHICLE NO.38463
DATE 11/11/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 11.2 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 38597. KM(23983. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR 1.02

TEST NUMBER,	V2DCOK-02
BAROMETER, MM HG	740.4
HUMIDITY, G/KG	11.2
TEMPERATURE, DEG C	23.9
CARBON DIOXIDE, G/MI	302.2
FUEL ECONOMY, MPG	15.73
HYDROCARBONS, (THC) G/MI	.013
CARBON MONOXIDE, G/MI	.001
OXIDES OF NITROGEN, G/MI	.389

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V2DOCK-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO.38463
DATE 11/11/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 11.2 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
M85 EM-1179-F
ODOMETER 38611. KM(23992. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR 1.02

BAROMETER 740.41 MM HG(29.15 IN HG)
RELATIVE HUMIDITY 65. PCT
GAS RESULTS

TEST CYCLE

NYCC

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	22659.
TOT FLOW STD. CU. METRES(SCF)	156.6 (5531.)
THC SAMPLE METER/RANGE/PPM	12.9/ 2/ 13.
THC BCKGRD METER/RANGE/PPM	12.7/ 2/ 13.
CO SAMPLE METER/RANGE/PPM	2.3/ 12/ 2.
CO BCKGRD METER/RANGE/PPM	.6/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	63.6/ 14/ .4157
CO2 BCKGRD METER/RANGE/PCT	13.6/ 14/ .0462
NOX SAMPLE METER/RANGE/PPM	12.1/ 1/ 3.0
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0
DILUTION FACTOR	28.54
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	2.
CO2 CONCENTRATION PCT	.3712
NOX CONCENTRATION PPM	3.0
THC MASS GRAMS	.116
CO MASS GRAMS	.288
CO2 MASS GRAMS	1064.3
NOX MASS GRAMS	.925
RUN TIME	599.
DPC, WET (DRY)	.965 (.945)
SCF, WET (DRY)	1.000 (.972)
VOL (SCH)	156.6
SAM BLR (SCH)	.00
MI (MEASURED)	1.15

TEST NUMBER,	V2DOCK-02
BAROMETER,	MM HG
HUMIDITY,	G/KG
TEMPERATURE,	DEG C
CARBON DIOXIDE,	G/MI
FUEL ECONOMY,	MPG

HYDROCARBONS, (THC)	G/MI
CARBON MONOXIDE,	G/MI
OXIDES OF NITROGEN,	G/MI

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ST NO. V2DC2K-01 RUN
HICLE MODEL 89 CROWN VICTORIA
GINE 5.0 L(305. CID) V-8
ANSMISSION L4

VEHICLE NO.38463
DATE 2/ 9/93
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 42028. KM(26115. MILES)

ROMETER 739.90 MM HG(29.13 IN HG)
LATIVE HUMIDITY 49. PCT

DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)
ABS. HUMIDITY 10.0 GM/KG

NOX HUMIDITY CORRECTION FACTOR .98

G RESULTS	1	2	3	4
BAG NUMBER				
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1244.6 (49.0)	1244.6 (49.0)	1244.6 (49.0)	1244.6 (49.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	41.7 (107.0)	41.7 (107.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19143.	32850.	19097.	32826.
TOT FLOW STD. CU. METRES(SCF)	132.5 (4678.)	227.6 (8038.)	132.3 (4672.)	227.4 (8031.)
THC SAMPLE METER/RANGE/PPM	32.8/ 2/ 33.	8.5/ 2/ 8.	9.5/ 2/ 9.	7.7/ 2/ 8.
THC BCKGRD METER/RANGE/PPM	8.8/ 2/ 9.	8.8/ 2/ 9.	9.3/ 2/ 9.	8.1/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	66.0/ 13/ 157.	2.0/ 12/ 2.	4.3/ 12/ 4.	.6/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.3/ 13/ 1.	.3/ 12/ 0.	.6/ 12/ 1.	.7/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	85.6/ 14/ .7681	68.4/ 14/ .4774	80.0/ 14/ .6589	67.5/ 14/ .4653
CO2 BCKGRD METER/RANGE/PCT	12.9/ 14/ .0434	12.7/ 14/ .0426	12.8/ 14/ .0430	12.8/ 14/ .0430
NOX SAMPLE METER/RANGE/PPM	47.8/ 1/ 11.9	11.4/ 1/ 2.9	30.0/ 1/ 7.5	9.8/ 1/ 2.5
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0	.1/ 1/ .0	.2/ 1/ .1	.0/ 1/ .0
DILUTION FACTOR	15.14	24.89	18.04	25.55
THC CONCENTRATION PPM	25.	0.	1.	0.
CO CONCENTRATION PPM	151.	2.	3.	0.
CO2 CONCENTRATION PCT	.7275	.4365	.6183	.4240
NOX CONCENTRATION PPM	11.9	2.8	7.5	2.5
THC MASS GRAMS	3.730	.014	.108	.000
CO MASS GRAMS	23.273	.418	.528	.000
CO2 MASS GRAMS	1764.5	1819.0	1497.8	1765.4
NOX MASS GRAMS	2.952	1.208	1.847	1.047
THC GRAMS/MI	1.050	.004	.031	.000
CO GRAMS/MI	6.549	.109	.149	.000
CO2 GRAMS/MI	496.5	472.7	422.3	459.7
NOX GRAMS/MI	.831	.314	.521	.273
FUEL ECONOMY IN MPG	9.351	9.705	11.251	10.760
RUN TIME SECONDS	505.	868.	505.	868.
MEASURED DISTANCE MI	3.55	7.40	3.55	7.39
SCF, DRY	.971	.974	.973	.975
DFC, WET (DRY)		.950(.935)		.955(.940)
TOT VOL (SCM) / SAM BLR (SCM)		360.1/ .00		359.8/ .00

OSITE RESULTS

TEST NUMBER V2DC2K-01
BAROMETER MM HG 739.9
HUMIDITY G/KG 10.0
TEMPERATURE DEG C 25.0

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	463.8	(460.0)
FUEL ECONOMY MPG	10.193	(10.28)
HYDROCARBONS (THC) G/MI	.227	(.23)
CARBON MONOXIDE G/MI	1.449	(1.42)
OXIDES OF NITROGEN G/MI	.477	(.47)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V2DC2K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO. 38463
DATE 2/ 9/93
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)
ABS. HUMIDITY 10.7 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 42051. KM(26129. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR 1.00

METER 738.63 MM HG(29.08 IN HG)
RELATIVE HUMIDITY 53. PCT
RESULTS
TEST CYCLE

H-FET

FLOWER DIP P MM. H2O(IN. H2O)	1257.3 (49.5)
FLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
FLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
FLOWER REVOLUTIONS	28939.
VOT FLOW STD. CU. METRES(SCF)	199.6 (7049.)
HC SAMPLE METER/RANGE/PPM	8.0/ 2/ 8.
HC BCKGRD METER/RANGE/PPM	8.1/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	1.0/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	1.0/ 12/ 1.
O2 SAMPLE METER/RANGE/PCT	90.2/ 14/ .8719
O2 BCKGRD METER/RANGE/PCT	12.7/ 14/ .0426
NOX SAMPLE METER/RANGE/PPM	60.5/ 1/ 15.1
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
DILUTION FACTOR	13.64
HC CONCENTRATION PPM	0.
CO CONCENTRATION PPM	0.
O2 CONCENTRATION PCT	.8324
NOX CONCENTRATION PPM	15.0
HC MASS GRAMS	.113
CO MASS GRAMS	.011
O2 MASS GRAMS	3042.4
NOX MASS GRAMS	5.745
TEST TIME SECONDS	765.
DPC, WET (DRY)	.927 (.911)
SCF, WET (DRY)	1.000 (.968)
VOL (SCH)	199.6
SAM BLR (SCH)	.00
MI (MEASURED)	10.11

TEST NUMBER,	V2DC2K-01
BAROMETER, MM HG	738.6
HUMIDITY, G/KG	10.7
TEMPERATURE, DEG C	25.0
CARBON DIOXIDE, G/MI	300.8
FUEL ECONOMY, MPG	15.81

HYDROCARBONS, (THC) G/MI	.011
CARBON MONOXIDE, G/MI	.001
OXIDES OF NITROGEN, G/MI	.568

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V2DC2K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

BAROMETER 738.63 MM HG(29.08 IN HG)
RELATIVE HUMIDITY 50. PCT
TEST RESULTS
TEST CYCLE

VEHICLE NO.38463
DATE 2/ 9/93
BAG CART NO. 2
DYNOMETER NO. 2
CVS NO. 8
DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)
ABS. HUMIDITY 11.0 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 42067. KM(26139. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR 1.01

NYCC

BLOWER DISCHARGE P MM. H ₂ O(IN. H ₂ O)	1244.6 (49.0)
BLOWER INLET P MM. H ₂ O(IN. H ₂ O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	22655.
POT FLOW STD. CU. METRES(SCF)	156.6 (5531.)
THC SAMPLE METER/RANGE/PPM	11.4/ 2/ 11.
THC BACKGROUND METER/RANGE/PPM	8.8/ 2/ 9.
CO SAMPLE METER/RANGE/PPM	1.4/ 12/ 1.
CO BACKGROUND METER/RANGE/PPM	1.0/ 12/ 1.
CO ₂ SAMPLE METER/RANGE/PCT	62.0/ 14/ .3966
CO ₂ BACKGROUND METER/RANGE/PCT	13.0/ 14/ .0438
NOX SAMPLE METER/RANGE/PPM	14.3/ 1/ 3.6
NOX BACKGROUND METER/RANGE/PPM	.0/ 1/ .0
DILUTION FACTOR	29.93
THC CONCENTRATION PPM	3.
CO CONCENTRATION PPM	0.
CO ₂ CONCENTRATION PCT	.3543
NOX CONCENTRATION PPM	3.6
THC MASS GRAMS	.519
CO MASS GRAMS	.071
CO ₂ MASS GRAMS	1016.0
NOX MASS GRAMS	1.086
RUN TIME SECONDS	599.
DFC, WET (DRY)	.967 (.951)
SCF, WET (DRY)	1.000 (.977)
VOL (SCM)	156.6
SAM BLR (SCM)	.00
MI (MEASURED)	1.19

TEST NUMBER,	V2DC2K-01
BAROMETER, MM HG	738.6
RELATIVE HUMIDITY, G/KG	11.0
TEMPERATURE, DEG C	26.1
CARBON DIOXIDE, G/MI	854.3
FUEL ECONOMY, MPG	5.56

HYDROCARBONS, (THC) G/MI	.437
CARBON MONOXIDE, G/MI	.060
OXIDES OF NITROGEN, G/MI	.913

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ST NO. 72DC2K-02 RUN
HICLE MODEL 89 CROWN VICTORIA
GINE 5.0 L(305. CID) V-8
ANSMISSION L4

VEHICLE NO.38463
DATE 2/10/93
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 42073. KM(26143. MILES)

ROMETER 738.63 MM HG(29.08 IN HG)
LATIVE HUMIDITY 50. PCT
G RESULTS

DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 8.9 GM/KG

NOX HUMIDITY CORRECTION FACTOR .95

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1244.6 (49.0)	1244.6 (49.0)	1244.6 (49.0)	1244.6 (49.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)	41.7 (107.0)	41.7 (107.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19154.	32898.	19103.	32866.
TOT FLOW STD. CU. METRES(SCF)	132.5 (4679.)	227.6 (8035.)	132.1 (4665.)	227.3 (8026.)
THC SAMPLE METER/RANGE/PPM	32.0/ 2/ 32.	8.9/ 2/ 9.	9.7/ 2/ 10.	9.8/ 2/ 10.
THC BCKGRD METER/RANGE/PPM	10.0/ 2/ 10.	9.1/ 2/ 9.	9.7/ 2/ 10.	10.3/ 2/ 10.
CO SAMPLE METER/RANGE/PPM	62.9/ 13/ 149.	3.3/ 12/ 3.	6.0/ 12/ 6.	2.1/ 12/ 2.
CO BCKGRD METER/RANGE/PPM	1.2/ 13/ 3.	2.4/ 12/ 2.	2.4/ 12/ 2.	2.1/ 12/ 2.
CO2 SAMPLE METER/RANGE/PCT	85.9/ 14/ .7744	68.6/ 14/ .4801	80.4/ 14/ .6661	67.7/ 14/ .4680
CO2 BCKGRD METER/RANGE/PCT	13.3/ 14/ .0450	13.4/ 14/ .0454	13.8/ 14/ .0470	14.0/ 14/ .0478
NOX SAMPLE METER/RANGE/PPM	44.5/ 1/ 11.1	12.2/ 1/ 3.1	35.2/ 1/ 8.8	13.0/ 1/ 3.3
NOX BCKGRD METER/RANGE/PPM	.5/ 1/ .1	.5/ 1/ .1	.3/ 1/ .1	.2/ 1/ .1
DILUTION FACTOR	15.04	24.74	17.84	25.38
THC CONCENTRATION PPM	23.	0.	1.	0.
CO CONCENTRATION PPM	141.	1.	3.	0.
CO2 CONCENTRATION PCT	.7324	.4365	.6218	.4220
NOX CONCENTRATION PPM	11.0	2.9	8.7	3.2
THC MASS GRAMS	3.440	.044	.082	.000
CO MASS GRAMS	21.787	.237	.524	.014
CO2 MASS GRAMS	1776.7	1818.7	1504.1	1756.3
NOX MASS GRAMS	2.632	1.211	2.086	1.322
THC GRAMS/MI	.955	.011	.023	.000
CO GRAMS/MI	6.049	.061	.147	.004
CO2 GRAMS/MI	493.3	470.5	421.4	458.3
NOX GRAMS/MI	.731	.313	.584	.345
FUEL ECONOMY IN MPG	9.428	9.766	10.10	10.790
RUN TIME SECONDS	505.	868.	504.	868.
MEASURED DISTANCE MI	3.60	7.47	3.57	7.40
SCF, DRY	.970	.973	.975	.976
DFC, WET (DRY)		.950(.935)		.954(.939)
TOT VOL (SCH) / SAM BLR (SCH)		360.1/ .00		359.4/ .00

OSITE RESULTS

TEST NUMBER 72DC2K-02
BAROMETER MM HG 738.6
HUMIDITY G/KG 8.9
TEMPERATURE DEG C 22.8

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	461.8	(458.1)
FUEL ECONOMY MPG	10.243	(10.32)
HYDROCARBONS (THC) G/MI	.210	(.21)
CARBON MONOXIDE G/MI	1.327	(1.31)
OXIDES OF NITROGEN G/MI	.474	(.48)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

EST NO. V2DC2K-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO.38463

DATE 2/10/93

BAG CART NO. 2

DYNO NO. 2

CVS NO. 8

DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)

ABS. HUMIDITY 9.1 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)

ACTUAL ROAD LOAD 9.4 KW(12.6 HP)

METHANOL EM-1179-F

ODOMETER 42096. KM(26157. MILES)

C = .436 H = .128 O = .436

FUEL DENSITY = 6.57

NOX HUMIDITY CORRECTION FACTOR .95

BAROMETER 738.38 MM HG(29.07 IN HG)

RELATIVE HUMIDITY 48. PCT

TEST RESULTS

TEST CYCLE

HFET

BLOWER DIF P MM. H2O(IN. H2O)
BLOWER INLET P MM. H2O(IN. H2O)
BLOWER INLET TEMP. DEG. C(DEG. F)
BLOWER REVOLUTIONS

1257.3 (49.5)

965.2 (38.0)

42.2 (108.0)

28976.

TOT FLOW STD. CU. METRES(SCF)

199.8 (7056.)

THC SAMPLE METER/RANGE/PPM

10.7/ 2/ 11.

THC BCKGRD METER/RANGE/PPM

9.9/ 2/ 10.

CO SAMPLE METER/RANGE/PPM

1.9/ 12/ 2.

CO BCKGRD METER/RANGE/PPM

2.1/ 12/ 2.

CO2 SAMPLE METER/RANGE/PCT

90.3/ 14/ .8743

CO2 BCKGRD METER/RANGE/PCT

14.1/ 14/ .0482

NOX SAMPLE METER/RANGE/PPM

58.3/ 1/ 14.5

NOX BCKGRD METER/RANGE/PPM

.4/ 1/ .1

DILUTION FACTOR

13.60

THC CONCENTRATION PPM

2.

CO CONCENTRATION PPM

0.

CO2 CONCENTRATION PCT

.8297

NOX CONCENTRATION PPM

14.4

THC MASS GRAMS

.350

CO MASS GRAMS

.020

CO2 MASS GRAMS

3035.5

NOX MASS GRAMS

5.239

RUN TIME SECONDS

765.

DFC, WET (DRY)

.926 (.912)

SCF, WET (DRY)

1.000 (.969)

VOL (SCM)

199.8

SAM BLR (SCM)

.00

MI (MEASURED)

10.17

TEST NUMBER,

V2DC2K-02

BAROMETER, MM HG

738.4

HUMIDITY, G/KG

9.1

TEMPERATURE, DEG C

23.9

CARBON DIOXIDE, G/MI

298.4

FUEL ECONOMY, MPG

15.93

HYDROCARBONS, (THC) G/MI

.034

CARBON MONOXIDE, G/MI

.002

OXIDES OF NITROGEN, G/MI

.515

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V2DC2K-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO.38463
DATE 2/10/93
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 9.1 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 42112. KM(26167. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .95

BAROMETER 738.63 MM HG(29.08 IN HG)
RELATIVE HUMIDITY 48. PCT

BAG RESULTS

TEST CYCLE

NYCC

BLOWER DIF P MM. H2O(IN. H2O)	1244.6 (49.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	22699.
TOT FLOW STD. CU. METRES(SCF)	157.0 (5543.)
THC SAMPLE METER/RANGE/PPM	11.0/ 2/ 11.
THC BCKGRD METER/RANGE/PPM	10.9/ 2/ 11.
CO SAMPLE METER/RANGE/PPM	2.9/ 12/ 3.
CO BCKGRD METER/RANGE/PPM	1.9/ 12/ 2.
CO2 SAMPLE METER/RANGE/PCT	62.7/ 14/ .4049
CO2 BCKGRD METER/RANGE/PCT	14.1/ 14/ .0482
NOX SAMPLE METER/RANGE/PPM	20.2/ 1/ 5.1
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
DILUTION FACTOR	29.31
THC CONCENTRATION PPM	0.
CO CONCENTRATION PPM	1.
CO2 CONCENTRATION PCT	.3583
NOX CONCENTRATION PPM	5.0
THC MASS GRAMS	.085
CO MASS GRAMS	.177
CO2 MASS GRAMS	1029.8
NOX MASS GRAMS	1.440
RUN TIME	600.
SECONDS	
DFC, WET (DRY)	.966 (.951)
SCF, WET (DRY)	1.000 (.977)
VOL (SCH)	157.0
SAM BLR (SCH)	.00
MI (MEASURED)	1.13

TEST NUMBER,	V2DC2K-02
BAROMETER,	MM HG
	738.6
HUMIDITY,	G/KG
	9.1
TEMPERATURE,	DEG C
	23.9
CARBON DIOXIDE,	G/MI
	910.4
FUEL ECONOMY,	MPG
	5.22

HYDROCARBONS, (THC)	G/MI	.075
CARBON MONOXIDE,	G/MI	.156
OXIDES OF NITROGEN,	G/MI	1.273

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

EST NO. VZDC4K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO. 38463
DATE 3/ 1/93
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KN(12.6 HP)
METHANOL EM-1179-F
ODOMETER 45419. KM(28222. MILES)

BAROMETER 739.90 MM HG(29.13 IN HG)
RELATIVE HUMIDITY 53. PCT

DRY BULB TEMP. 21.7 DEG C(71.0 DEG F)
ABS. HUMIDITY 8.8 GM/KG

NOX HUMIDITY CORRECTION FACTOR .94

TEST RESULTS

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	43.3 (110.0)	43.3 (110.0)	43.3 (110.0)	43.3 (110.0)
BLOWER REVOLUTIONS	19160.	32894.	19145.	32847.
TOT FLOW STD. CU. METRES(SCF)	132.0 (4661.)	226.6 (8002.)	131.9 (4657.)	226.2 (7989.)
THC SAMPLE METER/RANGE/PPM	52.1/ 2/ 52.	24.3/ 5/ 12.	24.8/ 5/ 12.	23.5/ 5/ 12.
THC BCKGRD METER/RANGE/PPM	10.6/ 2/ 11.	22.9/ 5/ 11.	21.4/ 5/ 11.	23.5/ 5/ 12.
CO SAMPLE METER/RANGE/PPM	58.7/ 14/ 267.	9.5/ 12/ 9.	17.6/ 12/ 17.	2.0/ 12/ 2.
CO BCKGRD METER/RANGE/PPM	.2/ 14/ 1.	1.0/ 12/ 1.	.9/ 12/ 1.	.7/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	87.3/ 14/ .8048	70.1/ 14/ .5009	81.4/ 14/ .6846	68.7/ 14/ .4814
CO2 BCKGRD METER/RANGE/PCT	15.1/ 14/ .0523	15.0/ 14/ .0519	15.7/ 14/ .0548	15.3/ 14/ .0531
NOX SAMPLE METER/RANGE/PPM	63.4/ 1/ 15.8	10.6/ 1/ 2.7	34.7/ 1/ 8.7	12.6/ 1/ 3.2
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1	.0/ 1/ .0	.0/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR	14.25	23.67	17.32	24.66
THC CONCENTRATION PPM	42.	1.	2.	0.
CO CONCENTRATION PPM	256.	8.	16.	1.
CO2 CONCENTRATION PCT	.7562	.4512	.6330	.4305
NOX CONCENTRATION PPM	15.7	2.7	8.7	3.2
THC MASS GRAMS	6.387	.308	.351	.124
CO MASS GRAMS	39.368	2.090	2.388	.321
CO2 MASS GRAMS	1827.4	1871.9	1528.4	1783.1
NOX MASS GRAMS	3.717	1.084	2.057	1.286
THC GRAMS/MI	1.768	.080	.098	.032
CO GRAMS/MI	10.894	.540	.668	.083
CO2 GRAMS/MI	505.7	483.3	427.2	463.4
NOX GRAMS/MI	1.029	.280	.575	.334
FUEL ECONOMY IN MPG	9.046	9.429	11.098	10.646
RUN TIME SECONDS	505.	868.	505.	867.
MEASURED DISTANCE MI	3.61	7.49	3.58	7.43
SCF, DRY	.969	.972	.971	.973
DPC, WET (DRY)		.947(.931)		.953(.937)
TOT VOL (SCM) / SAM BLR (SCM)		358.6/ .00		358.1/ .00

POSITIVE RESULTS

TEST NUMBER VZDC4K-01
BAROMETER MM HG 739.9
HUMIDITY G/KG 8.8
TEMPERATURE DEG C 21.7

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	472.6	(466.7)
FUEL ECONOMY MPG	9.955	(10.09)
HYDROCARBONS (THC) G/MI	.435	(.42)
CARBON MONOXIDE G/MI	2.724	(2.59)
OXIDES OF NITROGEN G/MI	.516	(.53)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

EST NO. V2DC4K-01 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

BAROMETER 739.90 MM HG(29.13 IN HG)
RELATIVE HUMIDITY 51. PCT
AG RESULTS

VEHICLE NO.38463
DATE 3/ 1/93
BAG CART NO. 2
DYN0 NO. 2
CVS NO. 8
DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
ABS. HUMIDITY 9.4 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 45441. KM(28236. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .96

TEST CYCLE

HFET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	43.3 (110.0)
BLOWER REVOLUTIONS	28975.
TOT FLOW STD. CU. METRES(SCF)	199.6 (7047.)
THC SAMPLE METER/RANGE/PPM	25.3/ 5/ 13.
THC BCKGRD METER/RANGE/PPM	23.3/ 5/ 12.
CO SAMPLE METER/RANGE/PPM	1.0/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.6/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	91.2/ 14/ .8965
CO2 BCKGRD METER/RANGE/PCT	15.2/ 14/ .0527
NOX SAMPLE METER/RANGE/PPM	63.2/ 1/ 15.7
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0
DILUTION FACTOR	13.26
THC CONCENTRATION PPM	2.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.8478
NOX CONCENTRATION PPM	15.7
THC MASS GRAMS	.431
CO MASS GRAMS	.091
CO2 MASS GRAMS	3097.5
NOX MASS GRAMS	5.743
RUN TIME SECONDS	765.
DPC, WET (DRY)	.925 (.909)
SCF, WET (DRY)	1.000 (.968)
VOL (SCN)	199.6
SAM BLR (SCN)	.00
MI (MEASURED)	10.20

TEST NUMBER,	V2DC4K-01
BAROMETER, MM HG	739.9
HUMIDITY, G/KG	9.4
TEMPERATURE, DEG C	23.3
CARBON DIOXIDE, G/MI	303.5
FUEL ECONOMY, MPG	15.66

HYDROCARBONS, (THC) G/MI	.042
CARBON MONOXIDE, G/MI	.009
OXIDES OF NITROGEN, G/MI	.563

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-5102-001

NO. V2DC4K-01 RUN
 CLE MODEL 89 CROWN VICTORIA
 NE 5.0 L(305. CID) V-8
 SMISSION L4

METER 739.90 MM HG(29.13 IN HG)
 TIVE HUMIDITY 51. PCT
 RESULTS
 EST CYCLE

VEHICLE NO.38463
 DATE 3/ 1/93
 BAG CART NO. 2
 DYNO NO. 2
 CVS NO. 8
 DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
 ABS. HUMIDITY 9.4 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)
 ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
 METHANOL EM-1179-F
 ODOMETER 45458. KM(28246. MILES)
 C = .436 H = .128 O = .436
 FUEL DENSITY = 6.57
 NOX HUMIDITY CORRECTION FACTOR .96

NYCC

LOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
LOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
LOWER INLET TEMP. DEG. C(DEG. F)	43.3 (110.0)
LOWER REVOLUTIONS	22721.
OT FLOW STD. CU. METRES(SCF)	156.5 (5525.)
HC SAMPLE METER/RANGE/PPM	22.4/ 5/ 11.
HC BCKGRD METER/RANGE/PPM	19.1/ 5/ 10.
CO SAMPLE METER/RANGE/PPM	8.4/ 12/ 8.
CO BCKGRD METER/RANGE/PPM	1.0/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	62.9/ 14/ .4073
CO2 BCKGRD METER/RANGE/PCT	13.9/ 14/ .0474
NOX SAMPLE METER/RANGE/PPM	15.0/ 1/ 3.8
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
DILUTION FACTOR	29.10
HC CONCENTRATION PPM	2.
CO CONCENTRATION PPM	7.
CO2 CONCENTRATION PCT	.3615
NOX CONCENTRATION PPM	3.7
HC MASS GRAMS	.356
CO MASS GRAMS	1.259
CO2 MASS GRAMS	1035.7
NOX MASS GRAMS	1.072
RUN TIME SECONDS	600.
DFC, WET (DRY)	.966 (.950)
SCF, WET (DRY)	1.000 (.976)
VOL (SCH)	156.5
SAM BLR (SCH)	.00
MI (MEASURED)	1.19

TEST NUMBER,	V2DC4K-01
BAROMETER, MM HG	739.9
HUMIDITY, G/KG	9.4
TEMPERATURE, DEG C	23.3
CARBON DIOXIDE, G/MI	870.6
FUEL ECONOMY, MPG	5.45
HYDROCARBONS, (THC) G/MI	.299
CARBON MONOXIDE, G/MI	1.058
OXIDES OF NITROGEN, G/MI	.901

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. V2DC4K-02 RUN
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 5.0 L(305. CID) V-8
TRANSMISSION L4

VEHICLE NO. 38463
DATE 3/ 2/93
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 45461. KM(28248. MILES)

BAROMETER 738.38 MM HG(29.07 IN HG)
RELATIVE HUMIDITY 36. PCT

DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 6.4 GM/KG

NOX HUMIDITY CORRECTION FACTOR .88

TEST RESULTS

BAG NUMBER	1	2	3	4
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	43.3 (110.0)	43.3 (110.0)	43.3 (110.0)	43.3 (110.0)
BLOWER REVOLUTIONS	19138.	32850.	19126.	32834.
TOT FLOW STD. CU. METRES(SCF)	131.5 (4643.)	225.7 (7970.)	131.4 (4640.)	225.6 (7965.)
THC SAMPLE METER/RANGE/PPM	56.1/ 2/ 56.	21.6/ 5/ 11.	20.5/ 5/ 10.	18.1/ 5/ 9.
THC BCKGRD METER/RANGE/PPM	9.3/ 2/ 9.	19.2/ 5/ 10.	19.6/ 5/ 10.	17.2/ 5/ 9.
CO SAMPLE METER/RANGE/PPM	70.9/ 14/ 335.	12.3/ 12/ 12.	13.0/ 12/ 12.	2.2/ 12/ 2.
CO BCKGRD METER/RANGE/PPM	.6/ 14/ 2.	2.2/ 12/ 2.	1.8/ 12/ 2.	1.5/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	86.7/ 14/ .7916	69.8/ 14/ .4967	80.8/ 14/ .6735	67.8/ 14/ .4693
CO2 BCKGRD METER/RANGE/PCT	13.9/ 14/ .0474	14.1/ 14/ .0482	14.0/ 14/ .0478	13.8/ 14/ .0470
NOX SAMPLE METER/RANGE/PPM	56.7/ 1/ 14.1	9.6/ 1/ 2.4	36.3/ 1/ 9.1	11.9/ 1/ 3.0
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0	.0/ 1/ .0	.0/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR	14.35	23.87	17.62	25.31
THC CONCENTRATION PPM	47.	2.	1.	1.
CO CONCENTRATION PPM	321.	10.	11.	1.
CO2 CONCENTRATION PCT	.7475	.4505	.6284	.4242
NOX CONCENTRATION PPM	14.1	2.4	9.1	3.0
THC MASS GRAMS	7.147	.415	.152	.205
CO MASS GRAMS	49.160	2.503	1.608	.181
CO2 MASS GRAMS	1799.7	1861.6	1511.8	1751.8
NOX MASS GRAMS	3.111	.912	1.999	1.130
THC GRAMS/MI	1.984	.107	.043	.054
CO GRAMS/MI	13.649	.645	.450	.047
CO2 GRAMS/MI	499.7	479.6	423.2	459.3
NOX GRAMS/MI	.864	.235	.560	.296
FUEL ECONOMY IN MPG	9.069	9.477	11.216	10.750
RUN TIME SECONDS	505.	867.	505.	867.
MEASURED DISTANCE MI	3.60	7.48	3.57	7.39
SCF, DRY	.974	.978	.977	.979
DPC, WET (DRY)		.948(.937)		.954(.943)
TOT VOL (SCM) / SAM BLR (SCM)		357.2/ .00		357.0/ .00

POSITIVE RESULTS

TEST NUMBER V2DC4K-02
BAROMETER MM HG 738.4
HUMIDITY G/KG 6.4
TEMPERATURE DEG C 22.8

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	468.3	(462.2)
FUEL ECONOMY MPG	10.026	(10.16)
HYDROCARBONS (THC) G/MI	.478	(.46)
CARBON MONOXIDE G/MI	3.283	(3.11)
OXIDES OF NITROGEN G/MI	.454	(.47)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HPET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-5102-001

TEST NO. V2DC4K-02 RUN
 VEHICLE MODEL 89 CROWN VICTORIA
 ENGINE 5.0 L(305. CID) V-8
 TRANSMISSION L4

VEHICLE NO. 38463
 DATE 3/ 2/93
 BAG CART NO. 2
 DYNO NO. 2
 CVS NO. 8

TEST WEIGHT 1928. KG(4250. LBS)
 ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
 METHANOL EM-1179-F
 ODOMETER 45483. KM(28262. MILES)
 C = .436 H = .128 O = .436
 FUEL DENSITY = 6.57
 NOX HUMIDITY CORRECTION FACTOR .90

BAROMETER 738.12 MM HG(29.06 IN HG)
 RELATIVE HUMIDITY 42. PCT

DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
 ABS. HUMIDITY 7.3 GM/KG

TEST RESULTS

TEST CYCLE

HPET

BLOWER DIF P MM. H2O(IN. H2O)
 BLOWER INLET P MM. H2O(IN. H2O)
 BLOWER INLET TEMP. DEG. C(DEG. F)
 BLOWER REVOLUTIONS
 TOT FLOW STD. CU. METRES(SCF)
 THC SAMPLE METER/RANGE/PPM
 THC BCKGRD METER/RANGE/PPM
 CO SAMPLE METER/RANGE/PPM
 CO BCKGRD METER/RANGE/PPM
 CO2 SAMPLE METER/RANGE/PCT
 CO2 BCKGRD METER/RANGE/PCT
 NOX SAMPLE METER/RANGE/PPM
 NOX BCKGRD METER/RANGE/PPM

1270.0 (50.0)
 965.2 (38.0)
 43.3 (110.0)
 28960.
 198.9 (7023.)
 14.6/ 5/ 7.
 14.5/ 5/ 7.
 1.1/ 12/ 1.
 1.1/ 12/ 1.
 90.6/ 14/ .8817
 12.6/ 14/ .0422
 66.7/ 1/ 16.6
 .0/ 1/ .0

DILUTION FACTOR
 THC CONCENTRATION PPM
 CO CONCENTRATION PPM
 CO2 CONCENTRATION PCT
 NOX CONCENTRATION PPM
 THC MASS GRAMS
 CO MASS GRAMS
 CO2 MASS GRAMS
 NOX MASS GRAMS

13.49
 1.
 0.
 .8425
 16.6
 .134
 .012
 3067.9
 5.667

RUN TIME SECONDS

765.

DFC, WET (DRY)
 SCF, WET (DRY)
 VOL (SCM)
 SAM BLR (SCM)
 MI (MEASURED)

.926 (.913)
 1.000 (.971)
 198.9
 .00
 10.17

TEST NUMBER,
 BAROMETER, MM HG
 HUMIDITY, G/KG
 TEMPERATURE, DEG C
 CARBON DIOXIDE, G/MI
 FUEL ECONOMY, MPG

V2DC4K-02
 738.1
 7.3
 22.2
 301.6
 15.76

HYDROCARBONS, (THC) G/MI
 CARBON MONOXIDE, G/MI
 OXIDES OF NITROGEN, G/MI

.013
 .001
 .557

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ST NO. V2DC4K-02 RUN
HICLE MODEL 89 CROWN VICTORIA
GINE 5.0 L(305. CID) V-8
ANSMISSION L4

VEHICLE NO.38463

DATE 3/ 2/93

BAG CART NO. 2

DYNO NO. 2

CVS NO. 8

DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)

ABS. HUMIDITY 5.5 GM/KG

TEST WEIGHT 1928. KG(4250. LBS)

ACTUAL ROAD LOAD 9.4 KW(12.6 HP)

METHANOL EM-1179-F

ODOMETER 45499. KM(28272. MILES)

C = .436 H = .128 O = .436

FUEL DENSITY = 6.57

NOX HUMIDITY CORRECTION FACTOR .85

BAROMETER 737.87 MM HG(29.05 IN HG)

RELATIVE HUMIDITY 27. PCT

TEST RESULTS

TEST CYCLE

NYCC

BLOWER DIP P MM. H2O(IN. H2O)

1270.0 (50.0)

BLOWER INLET P MM. H2O(IN. H2O)

965.2 (38.0)

BLOWER INLET TEMP. DEG. C(DEG. F)

43.3 (110.0)

BLOWER REVOLUTIONS

22734.

TOT FLOW STD. CU. METRES(SCF)

156.1 (5511.)

THC SAMPLE METER/RANGE/PPM

15.9/ 5/ 8.

THC BCKGRD METER/RANGE/PPM

14.5/ 5/ 7.

CO SAMPLE METER/RANGE/PPM

3.7/ 12/ 4.

CO BCKGRD METER/RANGE/PPM

.7/ 12/ 1.

CO2 SAMPLE METER/RANGE/PCT

62.1/ 14/ .3978

CO2 BCKGRD METER/RANGE/PCT

12.4/ 14/ .0415

NOX SAMPLE METER/RANGE/PPM

13.0/ 1/ 3.3

NOX BCKGRD METER/RANGE/PPM

.0/ 1/ .0

DILUTION FACTOR

29.85

THC CONCENTRATION PPM

1.

CO CONCENTRATION PPM

3.

CO2 CONCENTRATION PCT

.3577

NOX CONCENTRATION PPM

3.3

THC MASS GRAMS

.169

CO MASS GRAMS

.512

CO2 MASS GRAMS

1022.3

NOX MASS GRAMS

.832

RUN TIME SECONDS

600.

DPC, WET (DRY)

.966 (.958)

SCF, WET (DRY)

1.000 (.984)

VOL (SCH)

156.1

SAM BLR (SCH)

.00

MI (MEASURED)

1.14

TEST NUMBER,

V2DC4K-02

BAROMETER, MM HG

737.9

HUMIDITY, G/KG

5.5

TEMPERATURE, DEG C

25.0

CARBON DIOXIDE, G/MI

893.3

FUEL ECONOMY, MPG

5.32

HYDROCARBONS, (THC) G/MI

.148

CARBON MONOXIDE, G/MI

.447

OXIDES OF NITROGEN, G/MI

.727

APPENDIX X

COMPUTER PRINTOUTS OF OPTIMIZATION TEST RESULTS ON VW JETTA

Page X-	Test No.	Fuel	Catalyst	Test Cycle	EHC* Variable
2	Jetta-CK Run 1	M85	EHC+OEM	FTP	ACTIME1 = 65 AWTIME1 = 0
3	Jetta-CK Run 1	M85	EHC+OEM	Cold UDDS	ACTIME1 = 65
4	Jetta-CK Run 3	M85	EHC+OEM	Hot UDDS	AWTIME1 = 20
5	Jetta-CK Run 4	M85	EHC+OEM	FTP	ACTIME1 = 100 AWTIME1 = 50
6	Jetta-CK Run 5	M85	EHC+OEM	Hot UDDS	AWTIME1 = 30
7	Jetta-CK Run 6	M85	EHC+OEM	FTP	ACTIME1 = 80 AWTIME1 = 30
*See EHC controller settings sheet in Appendix R.					

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001ACTIME1 = 65
AWTIME1 = 0NO. JETTA-CK RUN 1
CLE MODEL 89 VW JETTA
NE 1.3 L(110. CID) L-4
MISSION A3VEHICLE NO. M100
DATE 10/23/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 30814. KM(19147. MILES)METER 750.57 MM HG(29.55 IN HG)
ATIVE HUMIDITY 52. PCT
RESULTSDRY BULB TEMP. 24.4 DEG C(76.0 DEG F)
ABS. HUMIDITY 10.1 GM/KG

NOX HUMIDITY CORRECTION FACTOR .98

AG NUMBER
DESCRIPTION

	1 COLD TRANSIENT	2 STABILIZED	3 HOT TRANSIENT	4 STABILIZED
LOWER DIF P MM. H2O(IN. H2O)	1295.4 (51.0)	1295.4 (51.0)	1295.4 (51.0)	1295.4 (51.0)
LOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
LOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)	41.1 (106.0)	41.7 (107.0)	41.1 (106.0)
LOWER REVOLUTIONS	19126.	32931.	19119.	32824.
OT FLOW STD. CU. METRES(SCF)	134.6 (4753.)	231.8 (8183.)	134.3 (4744.)	231.0 (8155.)
HC SAMPLE METER/RANGE/PPM	10.2/ 2/ 10.	8.9/ 2/ 9.	9.8/ 2/ 10.	8.7/ 2/ 9.
HC BCKGRD METER/RANGE/PPM	6.8/ 2/ 7.	8.1/ 2/ 8.	8.2/ 2/ 8.	8.3/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	42.3/ 12/ 41.	19.2/ 12/ 19.	26.0/ 12/ 25.	14.4/ 12/ 14.
CO BCKGRD METER/RANGE/PPM	.6/ 12/ 1.	.5/ 12/ 0.	.6/ 12/ 1.	.6/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	78.1/ 14/ .6254	61.5/ 14/ .3908	72.7/ 14/ .5387	60.6/ 14/ .3804
CO2 BCKGRD METER/RANGE/PCT	13.8/ 14/ .0470	13.7/ 14/ .0466	13.8/ 14/ .0470	14.0/ 14/ .0478
NOX SAMPLE METER/RANGE/PPM	6.5/ 1/ 1.6	.9/ 1/ .2	1.7/ 1/ .4	.4/ 1/ .1
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .2	.8/ 1/ .2	.8/ 1/ .2	.4/ 1/ .1
DILUTION FACTOR	18.89	30.26	21.96	31.12
HC CONCENTRATION PPM	4.	1.	2.	1.
CO CONCENTRATION PPM	39.	18.	24.	13.
CO2 CONCENTRATION PCT	.5809	.3457	.4939	.3342
NOX CONCENTRATION PPM	1.4	.0	.2	.0
HC MASS GRAMS	.580	.283	.304	.176
CO MASS GRAMS	6.148	4.735	3.726	3.475
CO2 MASS GRAMS	1431.8	1467.0	1214.7	1413.2
NOX MASS GRAMS	.358	.014	.059	.001
HC GRAMS/MI	.159	.072	.085	.046
CO GRAMS/MI	1.686	1.210	1.040	.901
CO2 GRAMS/MI	392.7	374.9	339.0	366.3
NOX GRAMS/MI	.098	.004	.017	.000
FUEL ECONOMY IN MPG	12.019	12.320	13.954	13.401
RUN TIME SECONDS	505.	870.	505.	868.
MEASURED DISTANCE MI	3.65	7.56	3.58	7.44
SCF, DRY	.972	.975	.974	.976
DFC, WET (DRY)		.960(.944)		.963(.947)
TOT VOL (SCM) / SAM BLR (SCM)		366.4/ .00		365.3/ .00

OSITE RESULTS

TEST NUMBER JETTA-CK
BAROMETER MM HG 750.6
HUMIDITY G/KG 10.1
TEMPERATURE DEG C 24.4

	3-BAG	(4-BAG)
CARBON DIOXIDE G MI	368.8	(366.2)
FUEL ECONOMY MPG	12.818	(12.91)
HYDROCARBONS (HC) G MI	.094	(.09)
CARBON MONOXIDE G MI	1.262	(1.17)
OXIDES OF NITROGEN G MI	.027	(.03)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ACTIME1 = 65

NO. JETTA-CK RUN 2
VEHICLE MODEL 89 VW JETTA
ENGINE 1.3 L(110. CID) L-4
TRANSMISSION A3

VEHICLE NO. M100
DATE 10/28/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 9.1 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 30845. KM(19166. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .95

METER 737.87 MM HG(29.05 IN HG)
RELATIVE HUMIDITY 48. PCT
RESULTS

BAG NUMBER
DESCRIPTION

	1 COLD TRANSIENT	2 STABILIZED
LOWER DIF P MM. H2O(IN. H2O)	1295.4 (51.0)	965.2 (38.0)
LOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	1295.4 (51.0)
LOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)	42.8 (109.0)
LOWER REVOLUTIONS	19144.	32842.
VT FLOW STD. CU. METRES(SCF)	131.8 (4654.)	221.5 (7820.)
HC SAMPLE METER/RANGE/PPM	9.5/ 2/ 9.	7.7/ 2/ 3.
HC BCKGRD METER/RANGE/PPM	7.0/ 2/ 7.	7.2/ 2/ 7.
O SAMPLE METER/RANGE/PPM	29.9/ 12/ 29.	10.7/ 12/ 10.
O BCKGRD METER/RANGE/PPM	.9/ 12/ 1.	.6/ 12/ 1.
O2 SAMPLE METER/RANGE/PCT	77.5/ 14/ .6152	61.1/ 14/ .3862
O2 BCKGRD METER/RANGE/PCT	14.6/ 14/ .0502	14.5/ 14/ .0498
CO SAMPLE METER/RANGE/PPM	7.4/ 1/ 1.9	.6/ 1/ .2
CO BCKGRD METER/RANGE/PPM	1.2/ 1/ .3	.6/ 1/ .2
ELUTION FACTOR	19.24	30.70
HC CONCENTRATION PPM	3.	1.
O CONCENTRATION PPM	27.	9.
O2 CONCENTRATION PCT	.5676	.3380
CO CONCENTRATION PPM	1.6	.0
HC MASS GRAMS	.432	.186
O MASS GRAMS	4.179	2.435
O2 MASS GRAMS	1369.8	1370.3
CO MASS GRAMS	.377	.002
HC GRAMS/MI	.120	.048
O GRAMS/MI	1.161	.630
O2 GRAMS/MI	380.4	354.7
CO GRAMS/MI	.105	.001
FUEL ECONOMY IN MPG	12.433	13.364
TEST TIME SECONDS	505.	368.
MEASURED DISTANCE MI	3.60	3.86
WET, DRY	.974	.978

SITE RESULTS

TEST NUMBER JETTA-CK
BAROMETER MM HG 737.9
HUMIDITY G/KG 9.1
TEMPERATURE DEG C 23.9

		2-BAG	(3-BAG)
CARBON DIOXIDE	G/MI	367.1	(.0)
FUEL ECONOMY	MPG	12.898	(.00)
HYDROCARBONS (TEC)	G/MI	.083	(.00)
CARBON MONOXIDE	G/MI	.386	(.00)
OXIDES OF NITROGEN	G/MI	.051	(.00)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

AWTIME = 20

NO. JETTA-CK RUN 3
CLE MODEL 89 VW JETTA
NE 1.8 L(110. CID) L-4
SMISSION A3

VEHICLE NO. M100
DATE 10/29/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
ABS. HUMIDITY 11.5 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 30870. KM(19182. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR 1.03

METER 736.60 MM HG(29.00 IN HG)
TIVE HUMIDITY 62. PCT
RESULTS

AG NUMBER
ESCRPTION

	3 HOT TRANSIENT	4 STABILIZED
LOWER DIF P MM. H2O(IN. H2O)	1295.4 (51.0)	1295.4 (51.0)
LOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)
LOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)	41.1 (106.0)
LOWER REVOLUTIONS	19114.	32817.
OT FLOW STD. CU. METRES(SCF)	131.3 (4637.)	225.8 (7973.)
HC SAMPLE METER/RANGE/PPM	7.3/ 2/ 7.	9.2/ 2/ 9.
HC BCKGRD METER/RANGE/PPM	6.5/ 2/ 6.	9.0/ 2/ 9.
O SAMPLE METER/RANGE/PPM	21.6/ 12/ 21.	12.2/ 12/ 12.
O BCKGRD METER/RANGE/PPM	1.1/ 12/ 1.	1.0/ 12/ 1.
O2 SAMPLE METER/RANGE/PCT	74.2/ 14/ .5617	61.1/ 14/ .3862
O2 BCKGRD METER/RANGE/PCT	13.6/ 14/ .0462	13.9/ 14/ .0474
OX SAMPLE METER/RANGE/PPM	2.6/ 1/ .7	1.1/ 1/ .3
OX BCKGRD METER/RANGE/PPM	2.4/ 1/ .6	1.2/ 1/ .3
ILUTION FACTOR	21.10	30.67
HC CONCENTRATION PPM	1.	0.
O CONCENTRATION PPM	19.	10.
O2 CONCENTRATION PCT	.5177	.3403
OX CONCENTRATION PPM	.1	.0
HC MASS GRAMS	.167	.128
O MASS GRAMS	2.926	2.747
O2 MASS GRAMS	1244.6	1406.9
OX MASS GRAMS	.020	.00
HC GRAMS/MI	.046	.033
O GRAMS/MI	.811	.703
O2 GRAMS/MI	345.1	360.0
OX GRAMS/MI	.006	.00
FUEL ECONOMY IN MPG	13.723	13.164
RUN TIME SECONDS	505.	867.
MEASURED DISTANCE MI	3.61	3.91
SCF, DRY	.970	.973

OSITE RESULTS

TEST NUMBER JETTA-CK
BAROMETER MM HG 736.6
HUMIDITY G/KG 11.5
TEMPERATURE DEG C 23.3

	2-BAG	(3-BAG)
CARBON DIOXIDE G/MI	352.9	(.0)
FUEL ECONOMY MPG	13.426	(.00)
HYDROCARBONS (THC) G/MI	.039	(.00)
CARBON MONOXIDE G/MI	.755	(.00)
OXIDES OF NITROGEN G/MI	.002	(.00)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ACTIME1 = 100

AWTIME1 = 50

T NO. JETTA-CK RUN 4
ICLE MODEL 89 VW JETTA
INE 1.8 L(110. CID) L-4
NSMISSION A3VEHICLE NO.M100
DATE 10/30/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 30803. KM(19140. MILES)OMETER 738.63 MM HG(29.08 IN HG)
ATIVE HUMIDITY 60. PCTDRY BULB TEMP. 21.7 DEG C(71.0 DEG F)
ABS. HUMIDITY 10.1 GM/KG

NOX HUMIDITY CORRECTION FACTOR .98

RESULTS	1	2	3	4
BAG NUMBER	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
DESCRIPTION				
BLOWER DIF P MM. H2O(IN. H2O)	1295.4 (51.0)	1295.4 (51.0)	1295.4 (51.0)	1295.4 (51.0)
BLOWER INLET P MM. H2O(IN. H2O)	990.6 (39.0)	990.6 (39.0)	990.6 (39.0)	990.6 (39.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)	40.6 (105.0)	40.6 (105.0)	39.4 (103.0)
BLOWER REVOLUTIONS	19116.	32849.	19100.	32791.
TOT FLOW STD. CU. METRES(SCF)	131.5 (4644.)	226.4 (7996.)	131.7 (4649.)	226.7 (8004.)
THC SAMPLE METER/RANGE/PPM	10.3/ 2/ 10.	8.8/ 2/ 9.	8.7/ 2/ 9.	8.8/ 2/ 9.
THC BCKGRD METER/RANGE/PPM	8.6/ 2/ 9.	8.4/ 2/ 8.	8.4/ 2/ 8.	8.4/ 2/ 8.
CO SAMPLE METER/RANGE/PPM	27.0/ 12/ 26.	12.5/ 12/ 12.	15.7/ 12/ 15.	11.0/ 12/ 11.
CO BCKGRD METER/RANGE/PPM	1.8/ 12/ 2.	1.4/ 12/ 1.	1.7/ 12/ 2.	1.9/ 12/ 2.
CO2 SAMPLE METER/RANGE/PCT	77.0/ 14/ .6068	60.8/ 14/ .3827	71.8/ 14/ .5254	59.7/ 14/ .3703
CO2 BCKGRD METER/RANGE/PCT	15.2/ 14/ .0527	15.1/ 14/ .0523	15.0/ 14/ .0519	15.1/ 14/ .0523
NOX SAMPLE METER/RANGE/PPM	16.8/ 1/ 4.2	.5/ 1/ .1	8.0/ 1/ 2.0	.3/ 1/ .1
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .2	.5/ 1/ .1	.5/ 1/ .1	.3/ 1/ .1
DILUTION FACTOR	19.51	30.95	22.57	31.99
THC CONCENTRATION PPM	2.	1.	1.	1.
CO CONCENTRATION PPM	24.	10.	13.	9.
CO2 CONCENTRATION PCT	.5568	.3321	.4758	.3197
NOX CONCENTRATION PPM	4.0	.0	1.9	.0
THC MASS GRAMS	.323	.174	.101	.172
CO MASS GRAMS	3.613	2.735	2.004	2.248
CO2 MASS GRAMS	1340.9	1377.0	1146.8	1326.6
NOX MASS GRAMS	.987	.002	.466	.001
THC GRAMS/MI	.090	.045	.029	.045
CO GRAMS/MI	1.009	.714	.564	.589
CO2 GRAMS/MI	374.6	359.5	322.8	347.6
NOX GRAMS/MI	.276	.000	.131	.000
FUEL ECONOMY IN MPG	12.633	12.911	13.18	14.685
RUN TIME SECONDS	506.	868.	505.	867.
MEASURED DISTANCE MI	3.58	7.41	3.55	7.37
SCF, DRY	.970	.972	.971	.973
DFC, WET (DRY)		.961(.942)		.964(.945)
TOT VOL (SCM) / SAM BLR (SCM)		358.0/ .00		358.3/ .00

OSITE RESULTS

TEST NUMBER JETTA-CK
BAROMETER MM HG 738.6
HUMIDITY G/KG 10.1
TEMPERATURE DEG C 21.7

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	352.6	(349.1)
FUEL ECONOMY MPG	13.438	(13.58)
HYDROCARBONS (THC) G/MI	.050	(.05)
CARBON MONOXIDE G/MI	.734	(.70)
OXIDES OF NITROGEN G/MI	.094	(.09)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

FTP - VEHICLE EMISSIONS RESULTS -

PROJECT 08-5102-001

AWTIME1 = 30

NO. JETTA-CK RUN 5
 CLE MODEL 89 VW JETTA
 NE 1.8 L(110. CID) L-4
 SMISSION A3

VEHICLE NO. H100
 DATE 10/30/92
 BAG CART NO. 2
 DYNO NO. 2
 CVS NO. 8
 DRY BULB TEMP. 25.6 DEG C(78.0 DEG F)
 ABS. HUMIDITY 12.0 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
 ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
 M85 EM-1179-F
 ODOMETER 30919. KM(19212. MILES)
 C = .436 H = .128 O = .436
 FUEL DENSITY = 6.57
 NOX HUMIDITY CORRECTION FACTOR 1.05

METER 736.60 MM HG(29.00 IN HG)

TIVE HUMIDITY 57. PCT

RESULTS

AG NUMBER

DESCRIPTION

	1 HOT TRANSIENT	2 STABILIZED
LOWER DIF P MM. H2O(IN. H2O)	1295.4 (51.0)	1295.4 (51.0)
LOWER INLET P MM. H2O(IN. H2O)	990.6 (39.0)	990.6 (39.0)
LOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)	41.1 (106.0)
LOWER REVOLUTIONS	19108.	32821.
OT FLOW STD. CU. METRES(SCF)	131.1 (4628.)	225.1 (7949.)
HC SAMPLE METER/RANGE/PPM	8.2/ 2/ 3.	7.6/ 2/ 8.
HC BCKGRD METER/RANGE/PPM	7.4/ 2/ 7.	7.5/ 2/ 7.
CO SAMPLE METER/RANGE/PPM	18.4/ 12/ 18.	11.8/ 12/ 11.
CO BCKGRD METER/RANGE/PPM	2.3/ 12/ 2.	1.3/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	71.6/ 14/ .5224	59.3/ 14/ .3659
CO2 BCKGRD METER/RANGE/PCT	14.0/ 14/ .0478	13.8/ 14/ .0470
NOX SAMPLE METER/RANGE/PPM	5.1/ 1/ 1.3	.6/ 1/ .2
NOX BCKGRD METER/RANGE/PPM	.7/ 1/ .2	.6/ 1/ .2
DILUTION FACTOR	22.68	32.38
THC CONCENTRATION PPM	1.	0.
CO CONCENTRATION PPM	15.	10.
CO2 CONCENTRATION PCT	.4767	.3203
NOX CONCENTRATION PPM	1.1	.0
THC MASS GRAMS	.169	.086
CO MASS GRAMS	2.304	2.575
CO2 MASS GRAMS	1144.0	1320.3
NOX MASS GRAMS	.292	.002
THC GRAMS/MI	.048	.022
CO GRAMS/MI	.649	.677
CO2 GRAMS/MI	322.1	347.4
NOX GRAMS/MI	.082	.001
FUEL ECONOMY IN MPG	14.710	13.645
RUN TIME SECONDS	505.	868.
MEASURED DISTANCE MI	3.55	3.80
SCF, DRY	.973	.975

OSITE RESULTS

TEST NUMBER JETTA-CK
 BAROMETER MM HG 736.6
 HUMIDITY G. KG 12.0
 TEMPERATURE DEG C 25.6

	2-BAG	(3-BAG)
CARBON DIOXIDE G/MI	335.2	(.0)
FUEL ECONOMY HPG	14.140	(.00)
HYDROCARBONS (THC) G/MI	.035	(.00)
CARBON MONOXIDE G/MI	.664	(.00)
OXIDES OF NITROGEN G/MI	.040	(.00)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

FIP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ACTIME1 = 80

AWTIME1 = 30

NO. JETTA-CK RUN 6
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
EMISSION A3

VEHICLE NO.M100
DATE 11/ 2/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 30932. KM(19220. MILES)

BAROMETER 739.65 MM HG(29.12 IN HG)
RELATIVE HUMIDITY 39. PCT

DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 6.6 GM/KG

NOX HUMIDITY CORRECTION FACTOR .88

RESULTS

BAG NUMBER

DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1295.4 (51.0)	1295.4 (51.0)	1295.4 (51.0)	1295.4 (51.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	41.7 (107.0)	40.6 (105.0)	37.8 (100.0)
BLOWER REVOLUTIONS	19174.	32873.	19113.	32832.
TOT FLOW STD. CU. METRES(SCF)	132.2 (4669.)	227.0 (8015.)	132.4 (4674.)	229.1 (8090.)
THC SAMPLE METER/RANGE/PPM	8.7/ 2/ 9.	6.5/ 2/ 6.	6.1/ 2/ 6.	5.5/ 2/ 5.
THC BCKGRD METER/RANGE/PPM	6.5/ 2/ 6.	6.3/ 2/ 6.	5.4/ 2/ 5.	5.4/ 2/ 5.
CO SAMPLE METER/RANGE/PPM	33.3/ 12/ 32.	12.5/ 12/ 12.	16.8/ 12/ 16.	9.7/ 12/ 9.
CO BCKGRD METER/RANGE/PPM	3.3/ 12/ 3.	2.8/ 12/ 3.	1.6/ 12/ 2.	1.2/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	75.9/ 14/ .5887	59.8/ 14/ .3714	71.9/ 14/ .5268	59.4/ 14/ .3670
CO2 BCKGRD METER/RANGE/PCT	13.5/ 14/ .0458	13.7/ 14/ .0466	13.3/ 14/ .0450	13.2/ 14/ .0446
NOX SAMPLE METER/RANGE/PPM	10.9/ 1/ 2.7	.6/ 1/ .2	4.5/ 1/ 1.1	.4/ 1/ .1
NOX BCKGRD METER/RANGE/PPM	1.2/ 1/ .3	.4/ 1/ .1	.6/ 1/ .2	.3/ 1/ .1
DILUTION FACTOR	20.09	31.90	22.51	32.32
THC CONCENTRATION PPM	3.	0.	1.	0.
CO CONCENTRATION PPM	28.	9.	14.	8.
CO2 CONCENTRATION PCT	.5452	.3263	.4838	.3238
NOX CONCENTRATION PPM	2.5	.1	1.0	.0
THC MASS GRAMS	.382	.103	.143	.070
CO MASS GRAMS	4.377	2.425	2.204	2.131
CO2 MASS GRAMS	1319.8	1356.1	1172.6	1358.0
NOX MASS GRAMS	.547	.020	.220	.011
THC GRAMS/MI	.107	.027	.040	.018
CO GRAMS/MI	1.227	.634	.613	.551
CO2 GRAMS/MI	369.9	354.3	325.9	351.0
NOX GRAMS/MI	.153	.005	.061	.003
FUEL ECONOMY IN MPG	12.781	13.085	13.38	14.544
RUN TIME SECONDS	506.	868.	505.	868.
MEASURED DISTANCE MI	3.57	7.40	3.83	7.47
SCF, DRY	.977	.980	.981	.978
DFC, WET (DRY)		.962(.950)		.964(.952)
TOT VOL (SCH) / SAM BLR (SCH)		359.2/ .00		361.5/ .00

OSITE RESULTS

TEST NUMBER JETTA-CK
BAROMETER MM HG 739.6
HUMIDITY G KG 6.6
TEMPERATURE DEG C 22.2

3-BAG (4-BAG)
CARBON DIOXIDE G/MI 349.7 (348.8)
FUEL ECONOMY MPG 13.548 (13.59)
HYDROCARBONS (THC) G MI .047 (.04)
CARBON MONOXIDE G/MI .751 (.73)
OXIDES OF NITROGEN G MI .051 (.05)

APPENDIX Y

COMPUTER PRINTOUTS OF VW JETTA TASK 3 EMISSION TEST RESULTS

Page Y-	Test No.	Fuel	Catalyst	Test Cycle
2	J2HC0K-01	M85	Camet+Deg	FTP
3	J2HC0K-01	M85	Camet+Deg	HFET
4	J2HC0K-01	M85	Camet+Deg	NYCC
5	J2HC0K-02	M85	Camet+Deg	FTP
6	J2HC0K-02	M85	Camet+Deg	HFET
7	J2HC0K-02	M85	Camet+Deg	NYCC
8	J1HC0K-02	Howell EEE	Camet+Deg	FTP
9	J1HC0K-02	Howell EEE	Camet+Deg	HFET
10	J1HC0K-02	Howell EEE	Camet+Deg	NYCC
11	J1HC0K-03	Howell EEE	Camet+Deg	FTP
12	J1HC0K-03	Howell EEE	Camet+Deg	HFET
13	J1HC0K-03	Howell EEE	Camet+Deg	NYCC
14	J2HC2K-01	M85	Camet+Deg	FTP
15	J2HC2K-01	M85	Camet+Deg	HFET
16	J2HC2K-01	M85	Camet+Deg	NYCC
17	J2HC2K-02	M85	Camet+Deg	FTP
18	J2HC2K-02	M85	Camet+Deg	HFET
19	J2HC2K-02	M85	Camet+Deg	NYCC
20	J2HC4k-01	M85	Camet+Deg	FTP
21	J2HC4K-01	M85	Camet+Deg	HFET
22	J2HC4K-01	M85	Camet+Deg	NYCC
23	J2HC4K-02	M85	Camet+Deg	FTP
24	J2HC4K-02	M85	Camet+Deg	HFET
25	J2HC4K-02	M85	Camet+Deg	NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

EST NO. J1HCOK-02 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

VEHICLE NO. M100
DATE 11/13/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
GASOLINE EM-1540-F
ODOMETER 31316. KM(19459. MILES)

BAROMETER 749.55 MM HG(29.51 IN HG)
RELATIVE HUMIDITY 29. PCT

DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 5.1 GM/KG

NOX HUMIDITY CORRECTION FACTOR .84

BAG RESULTS

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)	41.1 (106.0)	41.7 (107.0)	41.1 (106.0)
BLOWER REVOLUTIONS	19099.	32841.	19101.	32813.
TOT FLOW STD. CU. METRES(SCF)	134.2 (4738.)	231.1 (8159.)	134.2 (4738.)	230.9 (8153.)
THC SAMPLE METER/RANGE/PPM	21.7/ 2/ 22.	18.2/ 2/ 18.	17.5/ 2/ 17.	16.7/ 2/ 17.
THC BCKGRD METER/RANGE/PPM	17.2/ 2/ 17.	17.5/ 2/ 17.	15.3/ 2/ 15.	15.7/ 2/ 16.
CO SAMPLE METER/RANGE/PPM	31.6/ 12/ 31.	5.0/ 12/ 5.	8.5/ 12/ 8.	7.4/ 12/ 7.
CO BCKGRD METER/RANGE/PPM	.3/ 12/ 0.	.4/ 12/ 0.	.5/ 12/ 0.	.1/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	78.8/ 14/ .6376	61.8/ 14/ .3943	73.9/ 14/ .5570	61.0/ 14/ .3850
CO2 BCKGRD METER/RANGE/PCT	13.7/ 14/ .0466	13.8/ 14/ .0470	13.6/ 14/ .0462	13.6/ 14/ .0462
NOX SAMPLE METER/RANGE/PPM	16.9/ 1/ 4.2	1.1/ 1/ .3	6.9/ 1/ 1.7	.8/ 1/ .2
NOX BCKGRD METER/RANGE/PPM	1.2/ 1/ .3	1.1/ 1/ .3	.8/ 1/ .2	.9/ 1/ .2
DILUTION FACTOR	20.85	33.79	23.95	34.59
THC CONCENTRATION PPM	5.	1.	3.	1.
CO CONCENTRATION PPM	30.	4.	8.	7.
CO2 CONCENTRATION PCT	.5932	.3487	.5128	.3402
NOX CONCENTRATION PPM	4.0	.0	1.5	.0
THC MASS GRAMS	.412	.162	.220	.193
CO MASS GRAMS	4.640	1.163	1.174	1.845
CO2 MASS GRAMS	1457.3	1475.1	1259.7	1438.0
NOX MASS GRAMS	.857	.003	.334	.007
THC GRAMS/MI	.115	.043	.062	.051
CO GRAMS/MI	1.300	.305	.329	.482
CO2 GRAMS/MI	408.2	386.8	352.9	375.9
NOX GRAMS/MI	.240	.001	.094	.002
FUEL ECONOMY IN MPG	21.599	22.246	22.89	25.075
RUN TIME SECONDS	505.	868.	505.	867.
MEASURED DISTANCE MI	3.57	7.38	3.81	7.39
SCF, DRY	.985	.986	.987	.987
DFC, WET (DRY)		.964(.955)		.966(.957)
TOT VOL (SCM) / SAM BLR (SCM)		365.3/ .00		365.1/ .00

OSITE RESULTS

TEST NUMBER J1HCOK-02
BAROMETER MM HG 749.6
HUMIDITY G/KG 5.1
TEMPERATURE DEG C 22.8

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	381.9	(378.7)
FUEL ECONOMY MPG	23.158	(23.35)
HYDROCARBONS (THC) G/MI	.063	(.07)
CARBON MONOXIDE G/MI	.518	(.57)
OXIDES OF NITROGEN G/MI	.076	(.08)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-PET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J1HCOK-02 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

BAROMETER 748.28 MM HG(29.46 IN HG)
RELATIVE HUMIDITY 32. PCT
BAG RESULTS

VEHICLE NO.M100
DATE 11/13/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 5.3 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
GASOLINE EM-1540-F
ODOMETER 31340. KM(19474. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 6.16
NOX HUMIDITY CORRECTION FACTOR .85

TEST CYCLE

H-PET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	28955.
TOT FLOW STD. CU. METRES(SCF)	203.0 (7169.)
THC SAMPLE METER/RANGE/PPM	18.8/ 2/ 19.
THC BCKGRD METER/RANGE/PPM	15.3/ 2/ 15.
CO SAMPLE METER/RANGE/PPM	36.3/ 12/ 35.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	85.7/ 14/ .7702
CO2 BCKGRD METER/RANGE/PCT	13.8/ 14/ .0470
NOX SAMPLE METER/RANGE/PPM	13.4/ 1/ 3.4
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .2
DILUTION FACTOR	17.28
THC CONCENTRATION PPM	4.
CO CONCENTRATION PPM	34.
CO2 CONCENTRATION PCT	.7259
NOX CONCENTRATION PPM	3.2
THC MASS GRAMS	.513
CO MASS GRAMS	8.040
CO2 MASS GRAMS	2698.3
NOX MASS GRAMS	1.040
RUN TIME SECONDS	765.
DPC, WET (DRY)	.942 (.933)
SCF, WET (DRY)	1.000 (.983)
VOL (SCH)	203.0
SAM BLR (SCH)	.00
MI (MEASURED)	10.16

TEST NUMBER,	J1HCOK-02
BAROMETER, MM HG	748.3
HUMIDITY, G/KG	5.3
TEMPERATURE, DEG C	22.2
CARBON DIOXIDE, G/MI	265.5
FUEL ECONOMY, MPG	33.23

HYDROCARBONS, (THC) G/MI	.050
CARBON MONOXIDE, G/MI	.791
OXIDES OF NITROGEN, G/MI	.102

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J1HCOK-02 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

VEHICLE NO. M100
DATE 11/13/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 5.1 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
GASOLINE EM-1540-P
ODOMETER 31356. KM(19484. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 6.16
NOX HUMIDITY CORRECTION FACTOR .84

BAROMETER 748.03 MM HG(29.45 IN HG)
RELATIVE HUMIDITY 29. PCT
G RESULTS

TEST CYCLE

NYCC

BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	22650.
TOT FLOW STD. CU. METRES(SCF)	158.7 (5605.)
THC SAMPLE METER/RANGE/PPM	18.3/ 2/ 18.
THC BCKGRD METER/RANGE/PPM	17.2/ 2/ 17.
CO SAMPLE METER/RANGE/PPM	15.2/ 12/ 15.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	55.8/ 14/ .3286
CO2 BCKGRD METER/RANGE/PCT	14.0/ 14/ .0478
NOX SAMPLE METER/RANGE/PPM	1.5/ 1/ .4
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .2
DILUTION FACTOR	40.37
THC CONCENTRATION PPM	2.
CO CONCENTRATION PPM	14.
CO2 CONCENTRATION PCT	.2820
NOX CONCENTRATION PPM	.2
THC MASS GRAMS	.140
CO MASS GRAMS	2.591
CO2 MASS GRAMS	819.6
NOX MASS GRAMS	.040
RUN TIME SECONDS	599.
DPC, WET (DRY)	.975 (.966)
SCF, WET (DRY)	1.000 (.988)
VOL (SCH)	158.7
SAM BLR (SCH)	.00
MI (MEASURED)	1.16

TEST NUMBER,	J1HCOK-02
BAROMETER, MM HG	748.0
HUMIDITY, G/KG	5.1
TEMPERATURE, DEG C	22.8
CARBON DIOXIDE, G/MI	705.9
FUEL ECONOMY, MPG	12.49

HYDROCARBONS, (THC) G/MI	.120
CARBON MONOXIDE, G/MI	2.231
OXIDES OF NITROGEN, G/MI	.035

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J1HCOK-03 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

VEHICLE NO. M100
DATE 11/17/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
GASOLINE EM-1540-F
ODOMETER 31377. KM(19497. MILES)

BAROMETER 743.97 MM HG(29.29 IN HG)
RELATIVE HUMIDITY 46. PCT
BAG RESULTS

DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 8.2 G/KG

NOX HUMIDITY CORRECTION FACTOR .92

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	41.7 (107.0)	41.1 (106.0)	41.1 (106.0)
BLOWER REVOLUTIONS	19138.	32891.	19126.	32830.
TOT FLOW STD. CU. METRES(SCF)	132.9 (4693.)	229.1 (8089.)	133.4 (4710.)	229.0 (8085.)
THC SAMPLE METER/RANGE/PPM	15.1/ 2/ 15.	11.0/ 2/ 11.	16.8/ 2/ 17.	18.0/ 2/ 18.
THC BCKGRD METER/RANGE/PPM	9.6/ 2/ 10.	10.3/ 2/ 10.	14.4/ 2/ 14.	17.5/ 2/ 17.
CO SAMPLE METER/RANGE/PPM	41.7/ 12/ 41.	7.0/ 12/ 7.	9.7/ 12/ 9.	7.4/ 12/ 7.
CO BCKGRD METER/RANGE/PPM	1.0/ 12/ 1.	.8/ 12/ 1.	1.0/ 12/ 1.	.5/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	79.0/ 14/ .6411	62.1/ 14/ .3978	74.1/ 14/ .5601	61.3/ 14/ .3885
CO2 BCKGRD METER/RANGE/PCT	14.3/ 14/ .0490	14.3/ 14/ .0490	14.6/ 14/ .0502	14.4/ 14/ .0494
NOX SAMPLE METER/RANGE/PPM	14.5/ 1/ 3.6	.1/ 1/ .0	5.8/ 1/ 1.5	.2/ 1/ .1
NOX BCKGRD METER/RANGE/PPM	.5/ 1/ .1	.1/ 1/ .0	.3/ 1/ .1	.2/ 1/ .1
DILUTION FACTOR	20.73	33.54	23.81	34.27
THC CONCENTRATION PPM	6.	1.	3.	1.
CO CONCENTRATION PPM	39.	6.	8.	6.
CO2 CONCENTRATION PCT	.5944	.3502	.5120	.3405
NOX CONCENTRATION PPM	3.5	.0	1.4	.0
THC MASS GRAMS	.457	.133	.231	.133
CO MASS GRAMS	5.967	1.550	1.266	1.722
CO2 MASS GRAMS	1446.5	1469.0	1250.4	1427.3
NOX MASS GRAMS	.827	.000	.326	.001
THC GRAMS/MI	.128	.035	.065	.035
CO GRAMS/MI	1.667	.403	.355	.450
CO2 GRAMS/MI	404.1	382.4	350.1	372.7
NOX GRAMS/MI	.231	.000	.091	.000
FUEL ECONOMY IN MPG	21.782	22.466	25.274	24.458
RUN TIME SECONDS	505.	868.	505.	868.
MEASURED DISTANCE MI	3.58	7.42	3.57	7.40
SCF, DRY	.979	.980	.980	.981
DFC, WET (DRY)		.963(.949)		.966(.952)
TOT VOL (SCH) / SAM BLR (SCH)		362.0/ .00		362.4/ .00

COMPOSITE RESULTS

TEST NUMBER J1HCOK-03
BAROMETER MM HG 744.0
HUMIDITY G/KG 8.2
TEMPERATURE DEG C 22.8

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	378.0	(375.2)
FUEL ECONOMY MPG	23.382	(23.56)
HYDROCARBONS (THC) G/MI	.062	(.06)
CARBON MONOXIDE G/MI	.652	(.67)
OXIDES OF NITROGEN G/MI	.073	(.07)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J1HCOK-03 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

BAROMETER 743.71 MM HG(29.28 IN HG)
RELATIVE HUMIDITY 53. PCT
BAG RESULTS

VEHICLE NO. M100
DATE 11/17/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 21.7 DEG C(71.0 DEG F)
ABS. HUMIDITY 8.7 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
GASOLINE EM-1540-F
ODOMETER 31402. KM(19512. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 6.16
NOX HUMIDITY CORRECTION FACTOR .94

TEST CYCLE

H-FET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	28961.
TOT FLOW STD. CU. METRES(SCF)	201.6 (7118.)
THC SAMPLE METER/RANGE/PPM	20.8/ 2/ 21.
THC BCKGRD METER/RANGE/PPM	16.5/ 2/ 16.
CO SAMPLE METER/RANGE/PPM	30.4/ 12/ 29.
CO BCKGRD METER/RANGE/PPM	.9/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	85.8/ 14/ .7723
CO2 BCKGRD METER/RANGE/PCT	14.3/ 14/ .0490
NOX SAMPLE METER/RANGE/PPM	13.4/ 1/ 3.4
NOX BCKGRD METER/RANGE/PPM	.5/ 1/ .1
DILUTION FACTOR	17.24
THC CONCENTRATION PPM	5.
CO CONCENTRATION PPM	28.
CO2 CONCENTRATION PCT	.7261
NOX CONCENTRATION PPM	3.2
THC MASS GRAMS	.611
CO MASS GRAMS	6.508
CO2 MASS GRAMS	2679.8
NOX MASS GRAMS	1.174
RUN TIME	765.
SECONDS	
DPC, WET (DRY)	.942 (.926)
SCF, WET (DRY)	1.000 (.976)
VOL (SCM)	201.6
SAM BLR (SCM)	.00
MI (MEASURED)	10.16

TEST NUMBER,	J1HCOK-03
BAROMETER, MM HG	743.7
HUMIDITY, G/KG	8.7
TEMPERATURE, DEG C	21.7
CARBON DIOXIDE, G/MI	263.9
FUEL ECONOMY, MPG	33.45

HYDROCARBONS. (THC) G/MI	.060
CARBON MONOXIDE, G/MI	.641
OXIDES OF NITROGEN, G/MI	.116

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC -- VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

EST NO. J1HCOK-03 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

BAROMETER 743.71 MM HG(29.28 IN HG)
RELATIVE HUMIDITY 46. PCT
GAS RESULTS

VEHICLE NO. M100
DATE 11/17/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)
ABS. HUMIDITY 8.2 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
GASOLINE EM-1540-F
ODOMETER 31418. KM(19522. MILES)
C = .866 H = .134 O = .000
FUEL DENSITY = 6.16
NOX HUMIDITY CORRECTION FACTOR .92

TEST CYCLE

NYCC

BLOWER DIP P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	22674.
TOT FLOW STD. CU. METRES(SCF)	157.8 (5573.)
THC SAMPLE METER/RANGE/PPM	20.8/ 2/ 21.
THC BCKGRD METER/RANGE/PPM	21.9/ 2/ 22.
CO SAMPLE METER/RANGE/PPM	9.4/ 12/ 9.
CO BCKGRD METER/RANGE/PPM	1.3/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	54.9/ 14/ .3195
CO2 BCKGRD METER/RANGE/PCT	14.1/ 14/ .0482
NOX SAMPLE METER/RANGE/PPM	1.7/ 1/ .4
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1
DILUTION FACTOR	41.55
THC CONCENTRATION PPM	0.
CO CONCENTRATION PPM	8.
CO2 CONCENTRATION PCT	.2725
NOX CONCENTRATION PPM	.3
THC MASS GRAMS	.000
CO MASS GRAMS	1.401
CO2 MASS GRAMS	787.3
NOX MASS GRAMS	.092
RUN TIME	599.
SECONDS	
DFC, WET (DRY)	.976 (.961)
SCF, WET (DRY)	1.000 (.982)
VOL (SCM)	157.8
SAM BLR (SCM)	.00
MI (MEASURED)	1.12

TEST NUMBER,	J1HCOK-03
BAROMETER, MM HG	743.7
HUMIDITY, G/KG	8.2
TEMPERATURE, DEG C	22.8
CARBON DIOXIDE, G/MI	701.9
FUEL ECONOMY, MPG	12.60
HYDROCARBONS, (THC) G/MI	.000
CARBON MONOXIDE, G/MI	1.249
OXIDES OF NITROGEN, G/MI	.082

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J2HCOK-01 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.3 L(110. CID) L-4
TRANSMISSION A3

VEHICLE NO. M100
DATE 11/10/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
H85 EM-1179-F
ODOMETER 31141. KM(19350. MILES)

BAROMETER 741.17 MM HG(29.18 IN HG)
RELATIVE HUMIDITY 59. PCT

DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 11.2 GM/KG

NOX HUMIDITY CORRECTION FACTOR 1.02

BAG RESULTS

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	43.3 (110.0)	42.8 (109.0)	41.1 (106.0)
BLOWER REVOLUTIONS	19091.	32808.	19085.	32847.
TOT FLOW STD. CU. METRES(SCF)	131.9 (4658.)	226.4 (7993.)	131.9 (4656.)	228.0 (8051.)
THC SAMPLE METER/RANGE/PPM	13.9/ 2/ 14.	14.5/ 2/ 14.	15.2/ 2/ 15.	15.0/ 2/ 15.
THC BCKGRD METER/RANGE/PPM	12.5/ 2/ 12.	14.2/ 2/ 14.	14.5/ 2/ 14.	15.8/ 2/ 16.
CO SAMPLE METER/RANGE/PPM	18.7/ 12/ 18.	4.8/ 12/ 5.	7.5/ 12/ 7.	6.1/ 12/ 6.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 0.	.4/ 12/ 0.	.4/ 12/ 0.	.6/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	75.4/ 14/ .5806	59.2/ 14/ .3648	70.2/ 14/ .5023	58.3/ 14/ .3549
CO2 BCKGRD METER/RANGE/PCT	14.3/ 14/ .0490	14.5/ 14/ .0498	14.5/ 14/ .0498	14.5/ 14/ .0498
NOX SAMPLE METER/RANGE/PPM	10.3/ 1/ 2.6	.6/ 1/ .2	3.9/ 1/ 1.0	.1/ 1/ .0
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1	.4/ 1/ .1	.8/ 1/ .2	.2/ 1/ .1
DILUTION FACTOR	20.40	32.48	23.60	33.36
THC CONCENTRATION PPM	2.	1.	1.	0.
CO CONCENTRATION PPM	17.	4.	7.	5.
CO2 CONCENTRATION PCT	.5340	.3165	.4546	.3066
NOX CONCENTRATION PPM	2.5	.1	.8	.0
THC MASS GRAMS	.304	.191	.199	.000
CO MASS GRAMS	2.617	1.076	1.010	1.358
CO2 MASS GRAMS	1289.8	1311.6	1097.5	1279.9
NOX MASS GRAMS	.639	.023	.202	.010
THC GRAMS/MI	.085	.050	.056	.000
CO GRAMS/MI	.728	.280	.283	.352
CO2 GRAMS/MI	359.0	340.7	307.9	331.9
NOX GRAMS/MI	.178	.006	.057	.003
FUEL ECONOMY IN MPG	13.198	13.568	15.414	14.815
RUN TIME SECONDS	505.	868.	505.	869.
MEASURED DISTANCE MI	3.59	7.44	3.56	7.42
SCF, DRY	.971	.973	.972	.975
DFC, WET (DRY)		.962(.944)		.965(.947)
TOT VOL (SCH) / SAM BLR (SCH)		358.3/ .00		359.9/ .00

COMPOSITE RESULTS

TEST NUMBER J2HCOK-01
BAROMETER MM HG 741.2
HUMIDITY %KG 11.2
TEMPERATURE DEG C 23.9

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	335.5	(332.9)
FUEL ECONOMY MPG	14.142	(14.25)
HYDROCARBONS (THC) G/MI	.059	(.04)
CARBON MONOXIDE G/MI	.374	(.40)
OXIDES OF NITROGEN G/MI	.056	(.05)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J2HCOK-01 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

BAROMETER 740.66 MM HG(29.16 IN HG)
RELATIVE HUMIDITY 55. PCT
AG RESULTS

VEHICLE NO. M100
DATE 11/10/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 10.5 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 31165. KM(19365. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .99

TEST CYCLE

H-FET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	28939.
TOT FLOW STD. CU. METRES(SCF)	200.1 (7066.)
THC SAMPLE METER/RANGE/PPM	16.4/ 2/ 16.
THC BCKGRD METER/RANGE/PPM	15.7/ 2/ 16.
CO SAMPLE METER/RANGE/PPM	20.2/ 12/ 19.
CO BCKGRD METER/RANGE/PPM	.5/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	82.3/ 14/ .7017
CO2 BCKGRD METER/RANGE/PCT	14.3/ 14/ .0490
NOX SAMPLE METER/RANGE/PPM	7.2/ 1/ 1.8
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
DILUTION FACTOR	16.89
THC CONCENTRATION PPM	2.
CO CONCENTRATION PPM	18.
CO2 CONCENTRATION PCT	.6556
NOX CONCENTRATION PPM	1.8
THC MASS GRAMS	.374
CO MASS GRAMS	4.269
CO2 MASS GRAMS	2401.9
NOX MASS GRAMS	.678
RUN TIME SECONDS	766.
DPC, WET (DRY)	.941 (.924)
SCF, WET (DRY)	1.000 (.970)
VOL (SCH)	200.1
SAM BLR (SCH)	.00
MI (MEASURED)	10.11

TEST NUMBER,	J2HCOK-01
BAROMETER, MM HG	740.7
HUMIDITY, G/KG	10.5
TEMPERATURE, DEG C	23.9
CARBON DIOXIDE, G/MI	237.5
FUEL ECONOMY, MPG	19.96

HYDROCARBONS, (THC) G/MI	.037
CARBON MONOXIDE, G/MI	.422
OXIDES OF NITROGEN, G/MI	.067

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J2HCOK-01 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

VEHICLE NO. M100
DATE 11/10/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)
ABS. HUMIDITY 7.3 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
H85 EM-1179-F
ODOMETER 31183. KM(19376. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .90

BAROMETER 740.16 MM HG(29.14 IN HG)
RELATIVE HUMIDITY 36. PCT
BAG RESULTS

TEST CYCLE

NYCC

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)
BLOWER REVOLUTIONS	22671.
TOT FLOW STD. CU. METRES(SCF)	156.4 (5523.)
THC SAMPLE METER/RANGE/PPM	14.2/ 2/ 14.
THC BCKGRD METER/RANGE/PPM	14.5/ 2/ 14.
CO SAMPLE METER/RANGE/PPM	1.1/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.9/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	52.8/ 14/ .2989
CO2 BCKGRD METER/RANGE/PCT	14.3/ 14/ .0490
NOX SAMPLE METER/RANGE/PPM	.8/ 1/ .2
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
DILUTION FACTOR	39.64
THC CONCENTRATION PPM	0.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.2511
NOX CONCENTRATION PPM	.2
THC MASS GRAMS	.012
CO MASS GRAMS	.037
CO2 MASS GRAMS	719.1
NOX MASS GRAMS	.047
RUN TIME SECONDS	600.
DFC, WET (DRY)	.975 (.963)
SCF, WET (DRY)	1.000 (.983)
VOL (SCH)	156.4
SAM BLR (SCH)	.00
MI (MEASURED)	1.13

TEST NUMBER,	J2HCOK-01
BAROMETER, MM HG	740.2
HUMIDITY, G/KG	7.3
TEMPERATURE, DEG C	25.0
CARBON DIOXIDE, G/MI	635.9
FUEL ECONOMY, MPG	7.48
HYDROCARBONS, (THC) G/MI	.010
CARBON MONOXIDE, G/MI	.032
OXIDES OF NITROGEN, G/MI	.042

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J2HCOK-02 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

VEHICLE NO. M100
DATE 11/11/92
BAG CART NO. 2 / CVS NO. 8
DYNO NO. 2

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 31184. KM(19377. MILES)

BAROMETER 738.38 MM HG(29.07 IN HG)
RELATIVE HUMIDITY 45. PCT

DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)
ABS. HUMIDITY 8.9 GM/KG

NOX HUMIDITY CORRECTION FACTOR .94

BAG RESULTS

BAG NUMBER
DESCRIPTION

	1	2	3	4
	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	41.7 (107.0)	41.7 (107.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19101.	32794.	19103.	32783.
TOT FLOW STD. CU. METRES(SCF)	131.6 (4647.)	226.3 (7990.)	131.8 (4655.)	226.2 (7987.)
THC SAMPLE METER/RANGE/PPH	13.6/ 2/ 14.	12.5/ 2/ 12.	12.8/ 2/ 13.	12.6/ 2/ 13.
THC BCKGRD METER/RANGE/PPH	12.9/ 2/ 13.	12.9/ 2/ 13.	12.9/ 2/ 13.	13.2/ 2/ 13.
CO SAMPLE METER/RANGE/PPH	13.0/ 12/ 12.	5.0/ 12/ 5.	7.5/ 12/ 7.	5.2/ 12/ 5.
CO BCKGRD METER/RANGE/PPH	.8/ 12/ 1.	.8/ 12/ 1.	.8/ 12/ 1.	.8/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	76.7/ 14/ .6018	60.8/ 14/ .3827	72.1/ 14/ .5298	59.9/ 14/ .3725
CO2 BCKGRD METER/RANGE/PCT	15.3/ 14/ .0531	15.0/ 14/ .0519	14.7/ 14/ .0506	14.7/ 14/ .0506
NOX SAMPLE METER/RANGE/PPH	11.0/ 1/ 2.8	.2/ 1/ .1	3.9/ 1/ 1.0	.6/ 1/ .2
NOX BCKGRD METER/RANGE/PPH	.0/ 1/ .0	.0/ 1/ .0	.3/ 1/ .1	.5/ 1/ .1
DILUTION FACTOR	19.70	30.97	22.39	31.81
THC CONCENTRATION PPM	1.	0.	0.	0.
CO CONCENTRATION PPM	11.	4.	6.	4.
CO2 CONCENTRATION PCT	.5514	.3325	.4814	.3235
NOX CONCENTRATION PPM	2.8	.1	.9	.0
THC MASS GRAMS	.204	.004	.072	.000
CO MASS GRAMS	1.744	1.034	.958	1.083
CO2 MASS GRAMS	1328.5	1377.5	1161.9	1339.7
NOX MASS GRAMS	.656	.021	.216	.012
THC GRAMS/MI	.057	.001	.020	.000
CO GRAMS/MI	.488	.268	.269	.281
CO2 GRAMS/MI	371.8	357.6	325.6	348.3
NOX GRAMS/MI	.184	.005	.061	.003
FUEL ECONOMY IN MPG	12.760	13.025	14.585	14.076
RUN TIME SECONDS	505.	868.	505.	867.
MEASURED DISTANCE MI	3.57	7.43	3.57	7.42
SCF, DRY	.975	.977	.976	.978
DPC, WET (DRY)		.961(.947)		.964(.950)
TOT VOL (SCM) / SAM BLR (SCM)		357.9/ .00		358.0/ .00

COMPOSITE RESULTS

TEST NUMBER J2HCOK-02
BAROMETER MM HG 738.4
HUMIDITY G/KG 8.9
TEMPERATURE DEG C 24.4

CARBON DIOXIDE	G/MI	351.7	(349.0)
FUEL ECONOMY	MPG	13.498	(13.60)
HYDROCARBONS (THC)	G/MI	.018	(.02)
CARBON MONOXIDE	G/MI	.314	(.32)
OXIDES OF NITROGEN	G/MI	.057	(.06)

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
H-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. J2HCOK-02 RUN
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L(110. CID) L-4
TRANSMISSION A3

VEHICLE NO. M100
DATE 11/11/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)
ABS. HUMIDITY 9.8 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 31208. KM(19392. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .97

BAROMETER 737.87 MM HG(29.05 IN HG)
RELATIVE HUMIDITY 51. PCT

TEST RESULTS

TEST CYCLE

H-FET

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)
BLOWER REVOLUTIONS	28942.
TOT FLOW STD. CU. METRES(SCF)	199.2 (7035.)
THC SAMPLE METER/RANGE/PPM	13.4/ 2/ 13.
THC BCKGRD METER/RANGE/PPM	13.1/ 2/ 13.
CO SAMPLE METER/RANGE/PPM	19.4/ 12/ 19.
CO BCKGRD METER/RANGE/PPM	1.1/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	83.8/ 14/ .7311
CO2 BCKGRD METER/RANGE/PCT	15.4/ 14/ .0535
NOX SAMPLE METER/RANGE/PPM	8.5/ 1/ 2.1
NOX BCKGRD METER/RANGE/PPM	.2/ 1/ .1
DILUTION FACTOR	16.22
THC CONCENTRATION PPM	1.
CO CONCENTRATION PPM	17.
CO2 CONCENTRATION PCT	.6809
NOX CONCENTRATION PPM	2.1
THC MASS GRAMS	.253
CO MASS GRAMS	3.956
CO2 MASS GRAMS	2483.6
NOX MASS GRAMS	.773
RUN TIME SECONDS	766.
DPC, WET (DRY)	.938 (.923)
SCF, WET (DRY)	1.000 (.971)
VOL (SCM)	199.2
SAM BLR (SCM)	.00
MI (MEASURED)	10.14

TEST NUMBER,	J2HCOK-02
BAROMETER, MM HG	737.9
HUMIDITY, G/KG	9.8
TEMPERATURE, DEG C	23.9
CARBON DIOXIDE, G/MI	245.0
FUEL ECONOMY, MPG	19.36

HYDROCARBONS, (THC) G/MI	.025
CARBON MONOXIDE, G/MI	.390
OXIDES OF NITROGEN, G/MI	.076

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

T NO. J2HCOK-02 RUN
ICLE MODEL 89 VW JETTA
INE 1.8 L(110. CID) L-4
MISSION A3

OMETER 737.87 MM HG(29.05 IN HG)
ATIVE HUMIDITY 54. PCT

RESULTS
TEST CYCLE

VEHICLE NO.M100
DATE 11/11/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
ABS. HUMIDITY 10.1 GM/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 31224. KM(19402. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .98

NYCC

BLOWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)
BLOWER REVOLUTIONS	22645.
TOT FLOW STD. CU. METRES(SCF)	156.1 (5512.)
THC SAMPLE METER/RANGE/PPM	13.1/ 2/ 13.
THC BCKGRD METER/RANGE/PPM	13.6/ 2/ 14.
CO SAMPLE METER/RANGE/PPM	1.7/ 12/ 2.
CO BCKGRD METER/RANGE/PPM	1.2/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	53.3/ 14/ .3037
CO2 BCKGRD METER/RANGE/PCT	15.1/ 14/ .0523
NOX SAMPLE METER/RANGE/PPM	1.3/ 1/ .3
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .2
DILUTION FACTOR	39.02
THC CONCENTRATION PPM	0.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.2528
NOX CONCENTRATION PPM	.1
THC MASS GRAMS	.000
CO MASS GRAMS	.088
CO2 MASS GRAMS	722.4
NOX MASS GRAMS	.031
RUN TIME SECONDS	599.
DPC, WET (DRY)	.974 (.957)
SCF, WET (DRY)	1.000 (.977)
VOL (SCM)	156.1
SAM BLR (SCM)	.00
MI (MEASURED)	1.09

TEST NUMBER,	J2HCOK-02
BAROMETER, MM HG	737.9
HUMIDITY, G/KG	10.1
TEMPERATURE, DEG C	23.3
CARBON DIOXIDE, G/MI	661.4
FUEL ECONOMY, MPG	7.19

HYDROCARBONS, (THC) G/MI	.000
CARBON MONOXIDE, G/MI	.080
OXIDES OF NITROGEN, G/MI	.028

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

4-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	M100	TEST	J2HC2K-01	METHANOL	M85	EM-1179-F	
VEHICLE MODEL	89 VW JETTA	DATE	4/16/93	RUN	1	FUEL DENSITY	6.568 LB/GAL
ENGINE	1.8 L (110 CID)-L-4	DYNO	2	BAG CART	2	H	.128 C .436 O .436 X .000
TRANSMISSION	A3	ACTUAL ROAD LOAD	7.00 HP (5.22 KW)				
ODOMETER	21545 MILES (34665 KM)	TEST WEIGHT	2750 LBS (1247 KG)				

BAROMETER	29.33 IN HG (745.0 MM HG)	DRY BULB TEMPERATURE	74.0°F (23.3°C)	NOX HUMIDITY C.F.	.868
RELATIVE HUMIDITY	33.5 PCT.				

BAG NUMBER	1	2	3	4
BAG DESCRIPTION	COLD TRANSIENT (0-505 SEC.)	STABILIZED (505-1372 SEC.)	HOT TRANSIENT (0- 505 SEC.)	HOT STABILIZED (505-1372 SEC.)
RUN TIME SECONDS	505.3	868.7	505.3	868.2
DRY/WET CORRECTION FACTOR, SAMP/BACK	.980/.990	.984/.990	.981/.990	.984/.990
MEASURED DISTANCE MILES (KM)	3.60 (5.79)	3.84 (6.18)	3.59 (5.78)	3.83 (6.17)
BLOWER FLOW RATE SCFM (SCMM)	558.5 (15.82)	559.6 (15.85)	559.5 (15.85)	560.0 (15.86)
GAS METER FLOW RATE SCFM (SCMM)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
TOTAL FLOW SCF (SCM)	4704. (133.2)	8102. (229.5)	4712. (133.4)	8102. (229.5)
HC SAMPLE METER/RANGE/PPM (BAG)	83.0/ 1/ 8.33	76.8/ 1/ 7.71	79.3/ 1/ 7.96	81.2/ 1/ 8.15
HC BCKGRD METER/RANGE/PPM	67.1/ 1/ 6.73	74.4/ 1/ 7.46	75.6/ 1/ 7.59	77.2/ 1/ 7.75
CO SAMPLE METER/RANGE/PPM	18.9/ 12/ 18.22	13.2/ 12/ 12.68	13.9/ 12/ 13.36	13.3/ 12/ 12.77
CO BCKGRD METER/RANGE/PPM	1.5/ 12/ 1.43	.5/ 12/ .47	.5/ 12/ .47	.6/ 12/ .57
CO2 SAMPLE METER/RANGE/PCT	76.8/ 14/ .6035	60.9/ 14/ .3839	72.3/ 14/ .5328	60.2/ 14/ .3759
CO2 BCKGRD METER/RANGE/PCT	14.5/ 14/ .0498	14.5/ 14/ .0498	14.6/ 14/ .0502	14.5/ 14/ .0498
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	11.0/ 1/ 2.75	.6/ 1/ .15	4.4/ 1/ 1.10	.6/ 1/ .15
NOX BCKGRD METER/RANGE/PPM	.7/ 1/ .18	.6/ 1/ .15	.5/ 1/ .13	.6/ 1/ .15
CH4 SAMPLE PPM (1.100)	3.95	3.51	3.61	3.23
CH4 BCKGRD PPM	3.43	3.34	3.23	3.37
DILUTION FACTOR	19.71	30.96	22.33	31.60
HC CONCENTRATION PPM	1.94	.48	.71	.65
CO CONCENTRATION PPM	16.38	11.95	12.57	11.96
CO2 CONCENTRATION PCT	.5562	.3357	.4848	.3277
NOX CONCENTRATION PPM	2.58	.00	.98	.00
CH4 CONCENTRATION PPM	.69	.28	.52	-.03
NMHC CONCENTRATION PPM	1.18	.17	.14	.68
FIDHC MASS GRAMS	.296	.127	.109	.170
CO MASS GRAMS	2.540	3.193	1.952	3.194
CO2 MASS GRAMS	1356.45	1410.08	1184.33	1376.60
NOX MASS GRAMS	.572	.002	.217	.002
CH4 MASS GRAMS	.061	.044	.046	.000
NMHC MASS GRAMS (FID)	.090	.022	.011	.090
FUEL MASS KG	.852	.886	.744	.865
FUEL ECONOMY MPG (L/100KM)	12.58 (18.70)	12.90 (18.23)	14.39 (16.35)	13.19 (17.83)

4-BAG COMPOSITE RESULTS

FIDHC	G/MI	.046	CH4	G/MI	.010
CO	G/MI	.727	NMHC	G/MI	.014
NOX	G/MI	.050			
FUEL ECONOMY MPG (L/100KM)	13.31 (17.67)				

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

1-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	M100	TEST	J2HC2K-01	METHANOL	M85	EM-1179-F
VEHICLE MODEL	89 VW JETTA	DATE	4/16/93	RUN	1	FUEL DENSITY
ENGINE	1.8 L (110 CID)-L-4	DYNO	2	BAG CART	2	H .128 C .436 O .436 X .000
TRANSMISSION	A3	ACTUAL ROAD LOAD	7.00 HP (5.22 KW)		H-FET	
ODOMETER	21561 MILES (34691 KM)	TEST WEIGHT	2750 LBS (1247 KG)			

BAROMETER	29.34 IN HG (745.2 MM HG)	DRY BULB TEMPERATURE	77.0° F (25.0°C)	NOX HUMIDITY C.F.	.851
RELATIVE HUMIDITY	26.8 PCT.				

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	765.5
DRY/WET CORRECTION FACTOR, SAMP/BACK	.979/.991
MEASURED DISTANCE MILES (KM)	10.20 (16.41)
BLOWER FLOW RATE SCFM (SCMM)	557.4 (15.79)
GAS METER FLOW RATE SCFM (SCMM)	.00 (.00)
TOTAL FLOW SCF (SCM)	7112. (201.4)

HC SAMPLE METER/RANGE/PPM (BAG)	83.9/ 1/ 8.42
HC BCKGRD METER/RANGE/PPM	71.0/ 1/ 7.12
CO SAMPLE METER/RANGE/PPM	28.5/ 12/ 27.60
CO BCKGRD METER/RANGE/PPM	.7/ 12/ .66
CO2 SAMPLE METER/RANGE/PCT	83.4/ 14/ .7231
CO2 BCKGRD METER/RANGE/PCT	14.2/ 14/ .0486
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	8.5/ 1/ 2.13
NOX BCKGRD METER/RANGE/PPM	1.2/ 1/ .30
CH4 SAMPLE PPM (1.100)	3.46
CH4 BCKGRD PPM	2.90

DILUTION FACTOR	16.44
HC CONCENTRATION PPM	1.73
CO CONCENTRATION PPM	26.19
CO2 CONCENTRATION PCT	.6775
NOX CONCENTRATION PPM	1.84
CH4 CONCENTRATION PPM	.73
NMHC CONCENTRATION PPM	.92

FIDHC MASS GRAMS	.399
CO MASS GRAMS	6.142
CO2 MASS GRAMS	2498.25
NOX MASS GRAMS	.604
CH4 MASS GRAMS	.099
NMHC MASS GRAMS (FID)	.107
FUEL MASS KG	1.571
FUEL ECONOMY MPG (L/100KM)	19.34 (12.17)

1-BAG COMPOSITE RESULTS

FIDHC	G/MI	.039	CH4	G/MI	.010
CO	G/MI	.602	NMHC	G/MI	.010
NOX	G/MI	.059			
FUEL ECONOMY MPG (L/100KM)	19.34 (12.17)				

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 COMPUTER PROGRAM LDT 1.0-R 1-BAG CARB FTP VEHICLE EMISSION RESULTS PROJECT NO. 08-5102-001

VEHICLE NUMBER M100	TEST J2HC2K-01	METHANOL M85	EM-1179-F
VEHICLE MODEL 89 VW JETTA	DATE 4/16/93 RUN 1	FUEL DENSITY 6.568 LB/GAL	
ENGINE 1.8 L (110 CID)-L-4	DYNO 2 BAG CART 2	H .128 C .436 O .436 X .000	
TRANSMISSION A3	ACTUAL ROAD LOAD 7.00 HP (5.22 KW)	NYCC	
ODOMETER 21572 MILES (34709 KM)	TEST WEIGHT 2750 LBS (1247 KG)		

BAROMETER 29.34 IN HG (745.2 MM HG)	DRY BULB TEMPERATURE 78.0°F (25.6°C)	NOX HUMIDITY C.F. .860
RELATIVE HUMIDITY 27.7 PCT.		

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	602.1
DRY/WET CORRECTION FACTOR, SAMP/BACK	.985/.991
MEASURED DISTANCE MILES (KM)	1.13 (1.82)
BLOWER FLOW RATE SCFM (SCMH)	559.9 (15.86)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)
TOTAL FLOW SCF (SCM)	5618. (159.1)

HC SAMPLE METER/RANGE/PPM (BAG)	76.9/	1/	7.72
HC BCKGRD METER/RANGE/PPM	76.7/	1/	7.70
CO SAMPLE METER/RANGE/PPM	2.5/	12/	2.38
CO BCKGRD METER/RANGE/PPM	.4/	12/	.38
CO2 SAMPLE METER/RANGE/PCT	54.4/	14/	.3145
CO2 BCKGRD METER/RANGE/PCT	14.3/	14/	.0490
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	1.0/	1/	.25
NOX BCKGRD METER/RANGE/PPM	.6/	1/	.15
CH4 SAMPLE PPM (1.100)			2.99
CH4 BCKGRD PPM			2.93

DILUTION FACTOR	37.86
HC CONCENTRATION PPM	.22
CO CONCENTRATION PPM	1.97
CO2 CONCENTRATION PCT	.2668
NOX CONCENTRATION PPM	.10
CH4 CONCENTRATION PPM	.13
NMHC CONCENTRATION PPM	.08

FIDHC MASS GRAMS	.041
CO MASS GRAMS	.365
CO2 MASS GRAMS	777.24
NOX MASS GRAMS	.027
CH4 MASS GRAMS	.014
NMHC MASS GRAMS (FID)	.007
FUEL MASS KG	.487
FUEL ECONOMY MPG (L/100KM)	6.90 (34.08)

1-BAG COMPOSITE RESULTS

FIDHC	G/MI	.036	CH4	G/MI	.013
CO	G/MI	.323	NMHC	G/MI	.006
NOX	G/MI	.024			
FUEL ECONOMY MPG (L/100KM)		6.90 (34.08)			

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

4-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	M100	TEST	J2HC2K-02	METHANOL	M85	EM-1179-F	
VEHICLE MODEL	89 VW JETTA	DATE	4/19/93	RUN	1	FUEL DENSITY	6.568 LB/GAL
ENGINE	1.8 L (110 CID)-L-4	DYNO	2	BAG CART	2	H	.128 C .436 O .436 X .000
TRANSMISSION	A3	ACTUAL ROAD LOAD	7.00 HP (5.22 KW)				
ODOMETER	21585 MILES (34730 KM)	TEST WEIGHT	2750 LBS (1247 KG)				

BAROMETER	28.97 IN HG (735.8 MM HG)	DRY BULB TEMPERATURE	75.0°F (23.9°C)	NOX HUMIDITY C.F.	.995
RELATIVE HUMIDITY	55.1 PCT.				

BAG NUMBER	1	2	3	4
BAG DESCRIPTION	COLD TRANSIENT (0-505 SEC.)	STABILIZED (505-1372 SEC.)	HOT TRANSIENT (0- 505 SEC.)	HOT STABILIZED (505-1372 SEC.)
RUN TIME SECONDS	504.9	867.4	505.1	867.7
DRY/WET CORRECTION FACTOR, SAMP/BACK	.973/.983	.977/.983	.974/.983	.977/.983
MEASURED DISTANCE MILES (KM)	3.58 (5.77)	3.83 (6.16)	3.58 (5.75)	3.82 (6.15)
BLOWER FLOW RATE SCFM (SCMH)	553.3 (15.67)	554.3 (15.70)	552.3 (15.64)	554.7 (15.71)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
TOTAL FLOW SCF (SCM)	4656. (131.9)	8013. (226.9)	4649. (131.7)	8022. (227.2)

HC SAMPLE METER/RANGE/PPM (BAG)	81.6/ 1/ 8.19	84.1/ 1/ 8.44	16.7/ 5/ 8.37	17.0/ 5/ 8.52
HC BCKGRD METER/RANGE/PPM	69.1/ 1/ 6.93	83.8/ 1/ 8.41	16.0/ 5/ 8.02	16.5/ 5/ 8.27
CO SAMPLE METER/RANGE/PPM	17.0/ 12/ 16.37	12.5/ 12/ 12.00	14.1/ 12/ 13.55	12.6/ 12/ 12.10
CO BCKGRD METER/RANGE/PPM	.9/ 12/ .85	.6/ 12/ .57	.8/ 12/ .76	.5/ 12/ .47
CO2 SAMPLE METER/RANGE/PCT	76.7/ 14/ .6018	60.4/ 14/ .3782	72.2/ 14/ .5313	59.7/ 14/ .3703
CO2 BCKGRD METER/RANGE/PCT	14.4/ 14/ .0494	14.6/ 14/ .0502	15.1/ 14/ .0523	14.8/ 14/ .0510
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	10.2/ 1/ 2.55	.4/ 1/ .10	3.6/ 1/ .90	.3/ 1/ .08
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .15	.5/ 1/ .13	.3/ 1/ .08	.2/ 1/ .05
CH4 SAMPLE PPM (1.100)	4.02	3.68	3.75	3.41
CH4 BCKGRD PPM	3.59	3.40	3.40	3.15

DILUTION FACTOR	19.77	31.42	22.39	32.08
HC CONCENTRATION PPM	1.60	.30	.71	.51
CO CONCENTRATION PPM	15.01	11.12	12.40	11.31
CO2 CONCENTRATION PCT	.5549	.3295	.4813	.3209
NOX CONCENTRATION PPM	2.41	-.02	.83	.03
CH4 CONCENTRATION PPM	.61	.39	.50	.36
NMHC CONCENTRATION PPM	.93	-.13	.16	.11

FIDHC MASS GRAMS	.242	.077	.107	.132
CO MASS GRAMS	2.304	2.937	1.901	2.990
CO2 MASS GRAMS	1339.51	1369.14	1160.31	1334.53
NOX MASS GRAMS	.604	.000	.208	.011
CH4 MASS GRAMS	.054	.059	.044	.055
NMHC MASS GRAMS (FID)	.071	.000	.012	.014
FUEL MASS KG	.841	.860	.729	.839
FUEL ECONOMY MPG (L/100KM)	12.69 (18.54)	13.25 (17.76)	14.62 (16.09)	13.57 (17.33)

4-BAG COMPOSITE RESULTS

FIDHC	G/MI	.037	CH4	G/MI	.014
CO	G/MI	.681	NMHC	G/MI	.006
NOX	G/MI	.052			
FUEL ECONOMY MPG (L/100KM)	13.59 (17.31)				

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

1-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	M100	TEST	J2HC2K-02	METHANOL	M85	EM-1179-F	
VEHICLE MODEL	89 VW JETTA	DATE	4/19/93	RUN	1	FUEL DENSITY	6.568 LB/GAL
ENGINE	1.8 L (110 CID)-L-4	DYNO	2	BAG CART	2	H	.128 C .436 O .436 X .000
TRANSMISSION	A3	ACTUAL ROAD LOAD	7.00 HP (5.22 KW)	HFET			
ODOMETER	21600 MILES (34754 KM)	TEST WEIGHT	2750 LBS (1247 KG)				

BAROMETER	28.97 IN HG (735.8 MM HG)	DRY BULB TEMPERATURE	76.0°F (24.4°C)	NOX HUMIDITY C.F.	.987
RELATIVE HUMIDITY	52.1 PCT.				

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	765.3
DRY/WET CORRECTION FACTOR, SAMP/BACK	.971/.984
MEASURED DISTANCE MILES (KM)	10.16 (16.35)
BLOWER FLOW RATE SCFM (SCMM)	550.9 (15.60)
GAS METER FLOW RATE SCFM (SCMM)	.00 (.00)
TOTAL FLOW SCF (SCM)	7027. (199.0)

HC SAMPLE METER/RANGE/PPM (BAG)	18.2/ 5/ 9.12
HC BCKGRD METER/RANGE/PPM	16.1/ 5/ 8.07
CO SAMPLE METER/RANGE/PPM	26.9/ 12/ 26.03
CO BCKGRD METER/RANGE/PPM	.5/ 12/ .47
CO2 SAMPLE METER/RANGE/PCT	83.2/ 14/ .7192
CO2 BCKGRD METER/RANGE/PCT	14.6/ 14/ .0502
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	7.6/ 1/ 1.90
NOX BCKGRD METER/RANGE/PPM	.3/ 1/ .08
CH4 SAMPLE PPM (1.100)	3.72
CH4 BCKGRD PPM	3.12

DILUTION FACTOR	16.53
HC CONCENTRATION PPM	1.54
CO CONCENTRATION PPM	24.64
CO2 CONCENTRATION PCT	.6720
NOX CONCENTRATION PPM	1.83
CH4 CONCENTRATION PPM	.78
NMHC CONCENTRATION PPM	.68

FIDHC MASS GRAMS	.351
CO MASS GRAMS	5.710
CO2 MASS GRAMS	2448.54
NOX MASS GRAMS	.688
CH4 MASS GRAMS	.104
NMHC MASS GRAMS (FID)	.078
FUEL MASS KG	1.539
FUEL ECONOMY MPG (L/100KM)	19.66 (11.96)

1-BAG COMPOSITE RESULTS

FIDHC	G/MI	.035	CH4	G/MI	.010
CO	G/MI	.562	NMHC	G/MI	.008
NOX	G/MI	.068			
FUEL ECONOMY MPG (L/100KM)		19.66 (11.96)			

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

1-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	M100	TEST	J2HC2K-02	METHANOL	M85	EM-1179-F	
VEHICLE MODEL	89 VW JETTA	DATE	4/19/93	RUN	1	FUEL DENSITY	6.568 LB/GAL
ENGINE	1.8 L (110 CID)-L-4	DYNO	2	BAG CART	2	H	.128 C .436 O .436 X .000
TRANSMISSION	A3	ACTUAL ROAD LOAD	7.00 HP (5.22 KW)	NYCC			
ODOMETER	21611 MILES (34772 KM)	TEST WEIGHT	2750 LBS (1247 KG)				

BAROMETER	28.97 IN HG (735.8 MM HG)	DRY BULB TEMPERATURE	76.0°F (24.4°C)	NOX HUMIDITY C.F.	.987
RELATIVE HUMIDITY	52.1 PCT.				

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	600.2
DRY/WET CORRECTION FACTOR, SAMP/BACK	.978/.984
MEASURED DISTANCE MILES (KM)	1.13 (1.83)
BLOWER FLOW RATE SCFM (SCMM)	552.4 (15.64)
GAS METER FLOW RATE SCFM (SCMM)	.00 (.00)
TOTAL FLOW SCF (SCM)	5526. (156.5)

HC SAMPLE METER/RANGE/PPM (BAG)	19.0/ 5/ 9.52
HC BCKGRD METER/RANGE/PPM	19.0/ 5/ 9.52
CO SAMPLE METER/RANGE/PPM	2.4/ 12/ 2.28
CO BCKGRD METER/RANGE/PPM	.4/ 12/ .38
CO2 SAMPLE METER/RANGE/PCT	54.4/ 14/ .3145
CO2 BCKGRD METER/RANGE/PCT	14.8/ 14/ .0510
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	.6/ 1/ .15
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .10
CH4 SAMPLE PPM (1.100)	3.26
CH4 BCKGRD PPM	3.15

DILUTION FACTOR	37.84
HC CONCENTRATION PPM	.25
CO CONCENTRATION PPM	1.86
CO2 CONCENTRATION PCT	.2648
NOX CONCENTRATION PPM	.05
CH4 CONCENTRATION PPM	.19
NMHC CONCENTRATION PPM	.04

FIDHC MASS GRAMS	.045
CO MASS GRAMS	.339
CO2 MASS GRAMS	758.73
NOX MASS GRAMS	.016
CH4 MASS GRAMS	.020
NMHC MASS GRAMS (FID)	.004
FUEL MASS KG	.476
FUEL ECONOMY MPG (L/100KM)	7.11 (33.08)

1-BAG COMPOSITE RESULTS

FIDHC	G/MI	.040	CH4	G/MI	.017
CO	G/MI	.299	NMHC	G/MI	.003
NOX	G/MI	.014			
FUEL ECONOMY MPG (L/100KM)	7.11 (33.08)				

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 COMPUTER PROGRAM LDT 1.0-R 4-BAG CARB FTP VEHICLE EMISSION RESULTS PROJECT NO. 08-5102-001

VEHICLE NUMBER M100	TEST J2HC4K-01	METHANOL M85 EM-1179-F
VEHICLE MODEL 89 VW JETTA	DATE 5/ 7/93 RUN 1	FUEL DENSITY 6.568 LB/GAL
ENGINE 1.8 L (110 CID)-L-4	DYNO 2 BAG CART 2	H .128 C .436 O .436 X .000
TRANSMISSION A3	ACTUAL ROAD LOAD 7.00 HP (5.22 KW)	
ODOMETER 21585 MILES (34730 KM)	TEST WEIGHT 2750 LBS (1247 KG)	

BAROMETER 29.05 IN HG (737.9 MM HG)	DRY BULB TEMPERATURE 79.0°F (26.1°C)	NOX HUMIDITY C.F. 1.093
RELATIVE HUMIDITY 60.6 PCT.		

BAG NUMBER	1	2	3	4
BAG DESCRIPTION	COLD TRANSIENT (0-505 SEC.)	STABILIZED (505-1372 SEC.)	HOT TRANSIENT (0- 505 SEC.)	HOT STABILIZED (505-1372 SEC.)
RUN TIME SECONDS	505.2	867.9	505.3	867.7
DRY/WET CORRECTION FACTOR, SAMP/BACK	.968/.979	.972/.979	.970/.979	.972/.979
MEASURED DISTANCE MILES (KM)	3.56 (5.72)	3.83 (6.16)	3.56 (5.73)	3.82 (6.15)
BLOWER FLOW RATE SCFM (SCMH)	550.4 (15.59)	551.5 (15.62)	550.7 (15.60)	551.6 (15.62)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
TOTAL FLOW SCF (SCM)	4634. (131.2)	7977. (225.9)	4638. (131.3)	7977. (225.9)

HC SAMPLE METER/RANGE/PPM (BAG)	23.0/ 5/ 11.53	18.9/ 5/ 9.47	20.0/ 5/ 10.02	19.9/ 5/ 9.97
HC BCKGRD METER/RANGE/PPM	19.6/ 5/ 9.82	18.8/ 5/ 9.42	18.2/ 5/ 9.12	19.9/ 5/ 9.97
CO SAMPLE METER/RANGE/PPM	35.0/ 12/ 33.97	15.1/ 12/ 14.52	18.1/ 12/ 17.44	15.9/ 12/ 15.30
CO BCKGRD METER/RANGE/PPM	.6/ 12/ .57	.7/ 12/ .66	1.3/ 12/ 1.23	.7/ 12/ .66
CO2 SAMPLE METER/RANGE/PCT	76.5/ 14/ .5985	60.4/ 14/ .3782	71.8/ 14/ .5254	59.7/ 14/ .3703
CO2 BCKGRD METER/RANGE/PCT	14.5/ 14/ .0498	14.3/ 14/ .0490	13.9/ 14/ .0474	13.8/ 14/ .0470
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	11.3/ 1/ 2.83	.4/ 1/ .10	3.4/ 1/ .85	.6/ 1/ .15
NOX BCKGRD METER/RANGE/PPM	.5/ 1/ .13	.4/ 1/ .10	.3/ 1/ .08	.6/ 1/ .15
CH4 SAMPLE PPM (1.120)	3.44	2.90	3.15	2.98
CH4 BCKGRD PPM	2.71	2.67	2.59	2.64

DILUTION FACTOR	19.81	31.39	22.62	32.04
HC CONCENTRATION PPM	2.20	.35	1.31	.31
CO CONCENTRATION PPM	32.22	13.45	15.69	14.21
CO2 CONCENTRATION PCT	.5512	.3307	.4801	.3248
NOX CONCENTRATION PPM	2.71	.00	.78	.00
CH4 CONCENTRATION PPM	.86	.31	.68	.43
NMHC CONCENTRATION PPM	1.23	.00	.54	-.17

FIDHC MASS GRAMS	.331	.091	.196	.081
CO MASS GRAMS	4.923	3.539	2.399	3.738
CO2 MASS GRAMS	1324.48	1368.00	1154.42	1343.34
NOX MASS GRAMS	.743	.002	.214	.002
CH4 MASS GRAMS	.076	.047	.060	.064
NMHC MASS GRAMS (FID)	.093	.000	.041	.000
FUEL MASS KG	.835	.860	.726	.845
FUEL ECONOMY MPG (L/100KM)	12.70 (18.53)	13.25 (17.75)	14.63 (16.08)	13.48 (17.45)

4-BAG COMPOSITE RESULTS

FIDHC G/MI	.046	CH4 G/MI	.017
CO G/MI	.966	NMHC G/MI	.009
NOX G/MI	.060		
FUEL ECONOMY MPG (L/100KM)	13.57 (17.34)		

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

1-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	M100	TEST	J2HC4K-01	METHANOL	M85	EM-1179-F
VEHICLE MODEL	89 VW JETTA	DATE	5/10/93	RUN	1	FUEL DENSITY
ENGINE	1.8 L (110 CID)-L-4	DYNO	2	BAG CART	2	H .128 C .436 O .436 X .000
TRANSMISSION	A3	ACTUAL ROAD LOAD	7.00 HP (5.22 KW)		HFET	
ODOMETER	23709 MILES (38147 KM)	TEST WEIGHT	2750 LBS (1247 KG)			

BAROMETER	29.41 IN HG (747.0 MM HG)	DRY BULB TEMPERATURE	78.0°F (25.6°C)	NOX HUMIDITY C.F.	.926
RELATIVE HUMIDITY	39.8 PCT.				

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	765.4
DRY/WET CORRECTION FACTOR, SAMP/BACK	.974/.987
MEASURED DISTANCE MILES (KM)	10.12 (16.29)
BLOWER FLOW RATE SCFM (SCMH)	559.5 (15.85)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)
TOTAL FLOW SCF (SCM)	7137. (202.1)

HC SAMPLE METER/RANGE/PPM (BAG)	18.5/ 5/ 9.27
HC BCKGRD METER/RANGE/PPM	15.4/ 5/ 7.72
CO SAMPLE METER/RANGE/PPM	25.3/ 12/ 24.47
CO BCKGRD METER/RANGE/PPM	.4/ 12/ .38
CO2 SAMPLE METER/RANGE/PCT	83.1/ 14/ .7172
CO2 BCKGRD METER/RANGE/PCT	13.4/ 14/ .0454
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	8.7/ 1/ 2.18
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .03
CH4 SAMPLE PPM (1.120)	3.19
CH4 BCKGRD PPM	2.59

DILUTION FACTOR	16.58
HC CONCENTRATION PPM	2.02
CO CONCENTRATION PPM	23.32
CO2 CONCENTRATION PCT	.6746
NOX CONCENTRATION PPM	2.15
CH4 CONCENTRATION PPM	.75
NMHC CONCENTRATION PPM	1.18

FIDHC MASS GRAMS	.468
CO MASS GRAMS	5.487
CO2 MASS GRAMS	2496.36
NOX MASS GRAMS	.770
CH4 MASS GRAMS	.102
NMHC MASS GRAMS (FID)	.137
FUEL MASS KG	1.569
FUEL ECONOMY MPG (L/100KM)	19.22 (12.24)

1-BAG COMPOSITE RESULTS

FIDHC	G/MI	.046	CH4	G/MI	.010
CO	G/MI	.542	NMHC	G/MI	.014
NOX	G/MI	.076			
FUEL ECONOMY MPG (L/100KM)	19.22 (12.24)				

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R 1-BAG CARB FTP VEHICLE EMISSION RESULTS PROJECT NO. 08-5102-001

VEHICLE NUMBER M100	TEST J2HC4K-01	METHANOL M85 EM-1179-F
VEHICLE MODEL 89 VW JETTA	DATE 5/ 7/93 RUN 1	FUEL DENSITY 6.568 LB/GAL
ENGINE 1.8 L (110 CID)-L-4	DYNO 2 BAG CART 2	H .128 C .436 O .436 X .000
TRANSMISSION 13	ACTUAL ROAD LOAD 7.00 HP (5.22 KW)	NYCC
ODOMETER 21585 MILES (34730 KM)	TEST WEIGHT 2750 LBS (1247 KG)	

BAROMETER 29.03 IN HG (737.4 MM HG) DRY BULB TEMPERATURE 79.0°F (26.1°C) NOX HUMIDITY C.F. 1.010

RELATIVE HUMIDITY 50.4 PCT.

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	600.9
DRY/WET CORRECTION FACTOR, SAMP/BACK	.977/.982
MEASURED DISTANCE MILES (KM)	1.19 (1.92)
BLOWER FLOW RATE SCFM (SCMH)	562.8 (15.94)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)
TOTAL FLOW SCF (SCM)	5636. (159.6)

HC SAMPLE METER/RANGE/PPM (BAG)	18.3/ 5/ 9.17
HC BCKGRD METER/RANGE/PPM	18.2/ 5/ 9.12
CO SAMPLE METER/RANGE/PPM	2.9/ 12/ 2.76
CO BCKGRD METER/RANGE/PPM	.3/ 12/ .28
CO2 SAMPLE METER/RANGE/PCT	53.3/ 14/ .3037
CO2 BCKGRD METER/RANGE/PCT	13.6/ 14/ .0462
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	.6/ 1/ .15
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .10
CH4 SAMPLE PPM (1.120)	2.68
CH4 BCKGRD PPM	2.62

DILUTION FACTOR	39.18
HC CONCENTRATION PPM	.28
CO CONCENTRATION PPM	2.42
CO2 CONCENTRATION PCT	.2587
NOX CONCENTRATION PPM	.05
CH4 CONCENTRATION PPM	.12
NMHC CONCENTRATION PPM	.14

FIDHC MASS GRAMS	.052
CO MASS GRAMS	.449
CO2 MASS GRAMS	756.05
NOX MASS GRAMS	.016
CH4 MASS GRAMS	.013
NMHC MASS GRAMS (FID)	.013
FUEL MASS KG	.474
FUEL ECONOMY MPG (L/100KM)	7.50 (31.36)

1-BAG COMPOSITE RESULTS

FIDHC G/MI	.043	CH4 G/MI	.011
CO G/MI	.377	NMHC G/MI	.011
NOX G/MI	.014		
FUEL ECONOMY MPG (L/100KM)	7.50 (31.36)		

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

4-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	M100	TEST	J2HC4K-02	METHANOL	M85	EM-1179-F	
VEHICLE MODEL	89 VW JETTA	DATE	5/10/93	RUN	1	FUEL DENSITY	6.568 LB/GAL
ENGINE	1.8 L (110 CID)-L-4	DYNO	2	BAG CART	2	H	.128 C .436 O .436 X .000
TRANSMISSION	33	ACTUAL ROAD LOAD	7.00 HP (5.22 KW)				
ODOMETER	21585 MILES (34730 KM)	TEST WEIGHT	2750 LBS (1247 KG)				

BAROMETER	29.38 IN HG (746.3 MM HG)	DRY BULB TEMPERATURE	74.0°F (23.3°C)	NOX HUMIDITY C.F.	.935
RELATIVE HUMIDITY	47.1 PCT.				

BAG NUMBER	1	2	3	4
BAG DESCRIPTION	COLD TRANSIENT (0-505 SEC.)	STABILIZED (505-1372 SEC.)	HOT TRANSIENT (0- 505 SEC.)	HOT STABILIZED (505-1372 SEC.)
RUN TIME SECONDS	505.3	867.9	505.1	868.1
DRY/WET CORRECTION FACTOR, SAMP/BACK	.976/.986	.980/.986	.977/.986	.980/.986
MEASURED DISTANCE MILES (KM)	3.59 (5.78)	3.85 (6.20)	3.57 (5.75)	3.85 (6.20)
BLOWER FLOW RATE SCFM (SCMM)	559.5 (15.84)	560.8 (15.88)	559.0 (15.83)	559.3 (15.84)
GAS METER FLOW RATE SCFM (SCMM)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
TOTAL FLOW SCF (SCM)	4712. (133.4)	8112. (229.7)	4706. (133.3)	8093. (229.2)
HC SAMPLE METER/RANGE/PPM (BAG)	19.5/ 5/ 9.77	92.5/ 1/ 9.28	21.4/ 5/ 10.72	21.0/ 5/ 10.52
HC BCKGRD METER/RANGE/PPM	16.5/ 5/ 8.27	91.1/ 1/ 9.14	19.9/ 5/ 9.97	19.8/ 5/ 9.92
CO SAMPLE METER/RANGE/PPM	25.0/ 12/ 24.17	14.8/ 12/ 14.23	16.4/ 12/ 15.78	14.1/ 12/ 13.55
CO BCKGRD METER/RANGE/PPM	.1/ 12/ .09	.1/ 12/ .09	.4/ 12/ .38	.2/ 12/ .19
CO2 SAMPLE METER/RANGE/PCT	75.9/ 14/ .5887	60.1/ 14/ .3748	71.4/ 14/ .5195	59.8/ 14/ .3714
CO2 BCKGRD METER/RANGE/PCT	13.2/ 14/ .0446	13.3/ 14/ .0450	13.4/ 14/ .0454	13.3/ 14/ .0450
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	11.8/ 1/ 2.95	.8/ 1/ .20	4.0/ 1/ 1.00	.5/ 1/ .13
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .23	.8/ 1/ .20	.4/ 1/ .10	.4/ 1/ .10
CH4 SAMPLE PPM (1.120)	3.48	2.99	3.15	2.97
CH4 BCKGRD PPM	2.86	2.72	2.75	2.66
DILUTION FACTOR	20.18	31.68	22.88	31.96
HC CONCENTRATION PPM	1.91	.43	1.19	.91
CO CONCENTRATION PPM	23.33	13.78	14.96	13.02
CO2 CONCENTRATION PCT	.5463	.3312	.4761	.3278
NOX CONCENTRATION PPM	2.74	.01	.90	.03
CH4 CONCENTRATION PPM	.76	.36	.52	.39
NMHC CONCENTRATION PPM	1.06	.02	.60	.48
FIDHC MASS GRAMS	.293	.113	.181	.239
CO MASS GRAMS	3.624	3.685	2.321	3.475
CO2 MASS GRAMS	1334.68	1393.20	1161.63	1375.67
NOX MASS GRAMS	.653	.003	.215	.012
CH4 MASS GRAMS	.068	.055	.046	.059
NMHC MASS GRAMS (FID)	.082	.003	.046	.063
FUEL MASS KG	.840	.876	.730	.865
FUEL ECONOMY MPG (L/100KM)	12.75 (18.45)	13.09 (17.96)	14.59 (16.13)	13.26 (17.74)

4-BAG COMPOSITE RESULTS

FIDHC	G/MI	.056	CH4	G/MI	.015
CO	G/MI	.867	NMHC	G/MI	.013
NOX	G/MI	.055			
FUEL ECONOMY MPG (L/100KM)	13.46 (17.47)				

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R

1-BAG CARB FTP VEHICLE EMISSION RESULTS

PROJECT NO. 08-5102-001

VEHICLE NUMBER	M100	TEST	J2HC4K-02	METHANOL	M85	EM-1179-F	
VEHICLE MODEL	89 VW JETTA	DATE	5/10/93	RUN	1	FUEL DENSITY	6.568 LB/GAL
ENGINE	1.8 L (110 CID)-L-4	DYNO	2	BAG CART	2	H	.128 C .436 O .436 X .000
TRANSMISSION	A3	ACTUAL ROAD LOAD	7.00 HP (5.22 KW)	HFET			
ODOMETER	23697 MILES (38128 KM)	TEST WEIGHT	2750 LBS (1247 KG)				

BAROMETER	29.41 IN HG (747.0 MM HG)	DRY BULB TEMPERATURE	76.0°F (24.4°C)	NOX HUMIDITY C.F.	.903
RELATIVE HUMIDITY	38.3 PCT.				

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	765.1
DRY/WET CORRECTION FACTOR, SAMP/BACK	.975/.988
MEASURED DISTANCE MILES (KM)	10.17 (16.36)
BLOWER FLOW RATE SCFM (SCMH)	558.7 (15.82)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)
TOTAL FLOW SCF (SCH)	7125. (201.8)

HC SAMPLE METER/RANGE/PPM (BAG)	19.8/ 5/ 9.92
HC BCKGRD METER/RANGE/PPM	17.1/ 5/ 8.57
CO SAMPLE METER/RANGE/PPM	25.1/ 12/ 24.27
CO BCKGRD METER/RANGE/PPM	.2/ 12/ .19
CO2 SAMPLE METER/RANGE/PCT	83.4/ 14/ .7231
CO2 BCKGRD METER/RANGE/PCT	13.3/ 14/ .0450
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	8.0/ 1/ 2.00
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .03
CH4 SAMPLE PPM (1.120)	3.20
CH4 BCKGRD PPM	2.56

DILUTION FACTOR	16.44
HC CONCENTRATION PPM	1.87
CO CONCENTRATION PPM	23.31
CO2 CONCENTRATION PCT	.6809
NOX CONCENTRATION PPM	1.98
CH4 CONCENTRATION PPM	.80
NMHC CONCENTRATION PPM	.98

FIDHC MASS GRAMS	.433
CO MASS GRAMS	5.477
CO2 MASS GRAMS	2515.28
NOX MASS GRAMS	.689
CH4 MASS GRAMS	.107
NMHC MASS GRAMS (FID)	.114
FUEL MASS KG	1.581
FUEL ECONOMY MPG (L/100KM)	19.16 (12.28)

1-BAG COMPOSITE RESULTS

FIDHC	G/MI	.043	CH4	G/MI	.011
CO	G/MI	.539	NMHC	G/MI	.011
NOX	G/MI	.068			
FUEL ECONOMY MPG (L/100KM)	19.16 (12.28)				

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R 1-BAG CARB FTP VEHICLE EMISSION RESULTS PROJECT NO. 08-5102-001

VEHICLE NUMBER M100	TEST J2HC4K-02	METHANOL M85 EM-1179-F
VEHICLE MODEL 89 VW JETTA	DATE 5/10/93 RUN 1	FUEL DENSITY 6.568 LB/GAL
ENGINE 1.8 L (110 CID)-L-4	DYNO 2 BAG CART 2	H .128 C .436 O .436 X .000
TRANSMISSION A3	ACTUAL ROAD LOAD 7.00 HP (5.22 KW)	NYCC
ODOMETER 23708 MILES (38146 KM)	TEST WEIGHT 2750 LBS (1247 KG)	

BAROMETER 29.41 IN HG (747.0 MM HG) DRY BULB TEMPERATURE 78.0°F (25.6°C) NOX HUMIDITY C.F. .908

RELATIVE HUMIDITY 36.7 PCT.

BAG NUMBER	1
BAG DESCRIPTION	
RUN TIME SECONDS	600.8
DRY/WET CORRECTION FACTOR, SAMP/BACK	.983/.988
MEASURED DISTANCE MILES (KM)	1.12 (1.80)
BLOWER FLOW RATE SCFM (SCMH)	560.4 (15.87)
GAS METER FLOW RATE SCFM (SCMH)	.00 (.00)
TOTAL FLOW SCF (SCM)	5612. (158.9)

HC SAMPLE METER/RANGE/PPM (BAG)	16.8/	5/	8.42
HC BCKGRD METER/RANGE/PPM	17.2/	5/	8.62
CO SAMPLE METER/RANGE/PPM	2.4/	12/	2.28
CO BCKGRD METER/RANGE/PPM	.1/	12/	.09
CO2 SAMPLE METER/RANGE/PCT	53.5/	14/	.3057
CO2 BCKGRD METER/RANGE/PCT	13.3/	14/	.0450
NOX SAMPLE METER/RANGE/PPM (BAG) (D)	.4/	1/	.10
NOX BCKGRD METER/RANGE/PPM	.1/	1/	.03
CH4 SAMPLE PPM (1.120)			2.70
CH4 BCKGRD PPM			2.62

DILUTION FACTOR	38.95
HC CONCENTRATION PPM	.02
CO CONCENTRATION PPM	2.14
CO2 CONCENTRATION PCT	.2618
NOX CONCENTRATION PPM	.08
CH4 CONCENTRATION PPM	.15
NMHC CONCENTRATION PPM	-.15

FIDHC MASS GRAMS	.004
CO MASS GRAMS	.397
CO2 MASS GRAMS	761.85
NOX MASS GRAMS	.021
CH4 MASS GRAMS	.016
NMHC MASS GRAMS (FID)	.000
FUEL MASS KG	.478
FUEL ECONOMY MPG (L/100KM)	6.98 (33.72)

1-BAG COMPOSITE RESULTS

FIDHC G/MI	.003	CH4 G/MI	.014
CO G/MI	.355	NMHC G/MI	.000
NOX G/MI	.019		
FUEL ECONOMY MPG (L/100KM)	6.98 (33.72)		

