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
:LE MODEL 89 CROWN VICTORIA
:E 5.0 L(305. CID) V-8
:MISSION A4

VEHICLE NO.95
DATE 10/13/92
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-1179-F
ODOMETER 121. KM(75. MILES)

:ETER 742.70 MM HG(29.24 IN HG)
:IVE 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

:ESULTS

:G NUMBER	1	2	3	4
:SCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
:OWER DIF P MM. H2O(IN. H2O)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
:OWER INLET P MM. H2O(IN. H2O)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)	965.2 (38.0)
:OWER INLET TEMP. DEG. C(DEG. F)	38.9 (102.0)	38.9 (102.0)	39.4 (103.0)	39.4 (103.0)
:OWER REVOLUTIONS	19168.	32842.	19157.	32818.
:T FLOW STD. CU. METRES(SCF)	134.2 (4740.)	230.0 (8121.)	134.0 (4730.)	229.4 (8101.)
:C SAMPLE METER/RANGE/PPM	15.0/ 2/ 15.	12.8/ 2/ 13.	13.6/ 2/ 14.	15.5/ 2/ 15.
:C BCKGRD METER/RANGE/PPM	11.7/ 2/ 12.	12.5/ 2/ 12.	13.1/ 2/ 13.	15.5/ 2/ 15.
) SAMPLE METER/RANGE/PPM	6.2/ 12/ 6.	1.8/ 12/ 2.	1.5/ 12/ 1.	1.3/ 12/ 1.
) BCKGRD METER/RANGE/PPM	1.9/ 12/ 2.	1.6/ 12/ 2.	1.2/ 12/ 1.	.8/ 12/ 1.
2 SAMPLE METER/RANGE/PCT	89.0/ 14/ .8434	72.6/ 14/ .5372	82.9/ 14/ .7133	70.8/ 14/ .5108
)2 BCKGRD METER/RANGE/PCT	14.1/ 14/ .0482	13.8/ 14/ .0470	13.7/ 14/ .0466	13.7/ 14/ .0466
)X SAMPLE METER/RANGE/PPM	64.6/ 1/ 16.1	24.6/ 1/ 6.2	46.5/ 1/ 11.6	23.6/ 1/ 5.9
)X BCKGRD METER/RANGE/PPM	.8/ 1/ .2	.7/ 1/ .2	.7/ 1/ .2	.7/ 1/ .2
LUTION FACTOR	14.08	22.11	16.66	23.23
:C CONCENTRATION PPM	4.	1.	1.	1.
CONCENTRATION PPM	4.	0.	0.	0.
)2 CONCENTRATION PCT	.7986	.4924	.6695	.4663
)X CONCENTRATION PPM	15.9	6.0	11.4	5.8
:C MASS GRAMS	.635	.228	.197	.175
MASS GRAMS	.632	.062	.050	.129
2 MASS GRAMS	1962.9	2073.3	1642.0	1958.6
)X MASS GRAMS	3.839	2.485	2.759	2.376
:C GRAMS/MI	.176	.059	.055	.045
GRAMS/MI	.175	.016	.014	.033
2 GRAMS/MI	544.9	536.3	457.2	504.2
:X GRAMS/MI	1.066	.643	.768	.612
EL ECONOMY IN MPG	8.718 8.793	8.86	10.396 9.869	9.43
N TIME SECONDS	506.	867.	506.	868.
ASURED DISTANCE MI	3.60 7.47	3.87	3.59 7.48	3.88
:F, DRY	.971 .974	.976	.973 .975	.977
DFC, WET (DRY)	.945(.932)		.951(.937)	
TOT VOL (SCM) / SAM BLR (SCM)	364.2/ .00		363.4/ .00	

ITE RESULTS

ST NUMBER		CVHC-CK
ROMETER	MM HG	742.7
MIDITY	G/KG	8.8
MPERATURE	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

EHC 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
BAG RESULTS

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

NOX HUMIDITY CORRECTION FACTOR .79

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)	42.8 (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 17.280	16.73
RUN TIME SECONDS	505.	869.	505.	869.
MEASURED DISTANCE MI	3.57 7.42	3.85	3.57 7.40	3.83
SCF, DRY	.987 .989	.990	.988 .990	.990
DFC, WET (DRY)	.949(.945)		.954(.950)	
TOT VOL (SCM) / SAM BLR (SCM)	362.1/ .00		362.4/ .00	

COMPOSITE 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-FET - 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

VEHICLE NO.95
DATE 11/12/92
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 4.8 GM/KG

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 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		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	SECONDS	766.
DFC, WET (DRY)		.926 (.918)
SCF, WET (DRY)		1.000 (.982)
VOL (SCM)		201.4
SAM BLR (SCM)		.00
MI (MEASURED)		10.12
TEST NUMBER,		F1HCOK-01
BAROMETER,	MM HG	745.5
HUMIDITY,	G/KG	4.8
TEMPERATURE,	DEG C	22.2
CARBON DIOXIDE,	G/MI	347.0
FUEL ECONOMY,	MPG	25.55
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. F1HCOK-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
TEST CYCLE

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

	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)	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 SECONDS	600.
DFC, WET (DRY)	.965 (.957)
SCF, WET (DRY)	1.000 (.988)
VOL (SCM)	157.8
SAM BLR (SCM)	.00
MI (MEASURED)	1.13

TEST NUMBER,		F1HCOK-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 NO.95	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 89 CROWN VICTORIA	DATE 11/13/92	ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
ENGINE 4.9 L(302. CID) V-8	BAG CART NO. 2 / CVS NO. 8	GASOLINE EM-1540-F
TRANSMISSION A4	DYNO NO. 2	ODOMETER 526. KM(327. MILES)

BAROMETER 750.57 MM HG(29.55 IN HG) DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
RELATIVE HUMIDITY 28. PCT 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	15.75	17.874 17.277	16.76
RUN TIME SECONDS	505.	868.	505.	868.
MEASURED DISTANCE MI	3.56 7.40	3.84	3.56 7.45	3.88
SCF, DRY	.983 .985	.986	.984 .985	.986
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

		3-BAG	(4-BAG)
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. F1HCOK-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 (SCM)	203.0
SAM BLR (SCM)	.00
MI (MEASURED)	10.16

TEST NUMBER,		F1HCOK-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. F1HCOK-02 RUN	VEHICLE NO.95	TEST WEIGHT 1928. KG(4250. LBS)
HICLE MODEL 89 CROWN VICTORIA	DATE 11/13/92	ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
GINE 4.9 L(302. CID) V-8	BAG CART NO. 1	GASOLINE EM-1540-F
ANSMISSION A4	DYNO NO. 2	ODOMETER 565. KM(351. MILES)
	CVS NO. 8	C = .866 H = .134 O = .000
ROMETER 750.06 MM HG(29.53 IN HG)	DRY BULB TEMP. 21.7 DEG C(71.0 DEG F)	FUEL DENSITY = 6.16
LATIVE HUMIDITY 34. PCT	ABS. HUMIDITY 5.6 GM/KG	NOX HUMIDITY CORRECTION FACTOR .85

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.
DFC, WET (DRY)	.957 (.946)
SCF, WET (DRY)	1.000 (.984)
VOL (SCM)	159.5
SAM BLR (SCM)	.00
MI (MEASURED)	1.10

TEST NUMBER,		F1HCOK-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. F2HCOK-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-P
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	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)	42.8 (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	10.286 9.986	9.72
RUN TIME SECONDS	505.	869.	506.	869.
MEASURED DISTANCE MI	3.59 7.44	3.85	3.58 7.44	3.86
SCF, DRY	.967 .970	.973	.969 .971	.973
DFC, WET (DRY)	.946(.928)		.951(.933)	
TOT VOL (SCM) / SAM BLR (SCM)	360.3/ .00		359.8/ .00	

OMPOSITE RESULTS

TEST NUMBER		F2HCOK-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-FET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

TEST NO. F2HCOK-01 RUN	VEHICLE NO.95	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 89 CROWN VICTORIA	DATE 11/10/92	ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
ENGINE 4.9 L(302. CID) V-8	BAG CART NO. 2	M85 EM-1179-F
TRANSMISSION A4	DYNO NO. 2	ODOMETER 373. KM(232. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
BAROMETER 741.93 MM HG(29.21 IN HG)	DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)	FUEL DENSITY = 6.57
RELATIVE HUMIDITY 55. PCT	ABS. HUMIDITY 10.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR .99

BAG 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)		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.
DFC, WET (DRY)		.920 (.904)
SCF, WET (DRY)		1.000 (.966)
VOL (SCM)		200.0
SAM BLR (SCM)		.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 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		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	SECONDS	599.
DFC, 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	741.7
HUMIDITY,	G/KG	11.2
TEMPERATURE,	DEG C	27.2
CARBON DIOXIDE,	G/MI	1005.5
FUEL ECONOMY,	MPG	4.73
HYDROCARBONS, (THC)	G/MI	.097
CARBON MONOXIDE,	G/MI	.015
OXIDES OF NITROGEN,	G/MI	1.470

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
BAG RESULTS

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

NOX HUMIDITY CORRECTION FACTOR 1.07

BAG NUMBER	1	2	3	4
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H20(IN. H20)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H20(IN. H20)	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 10.072	9.85
RUN TIME SECONDS	505.	867.	505.	868.
MEASURED DISTANCE MI	3.58 7.44	3.86	3.59 7.45	3.86
SCF, DRY	.964 .967	.970	.966 .968	.970
DFC, WET (DRY)	.946(.925)		.951(.931)	
TOT VOL (SCM) / SAM BLR (SCM)	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

		3-BAG	(4-BAG)
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

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

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 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		22691.
TOT FLOW STD. CU. METRES(SCF)		156.8 (5535.)
THC SAMPLE METER/RANGE/PPM		15.8/ 2/ 16.
THC BCKGRD METER/RANGE/PPM		14.6/ 2/ 15.
CO SAMPLE METER/RANGE/PPM		.8/ 12/ 1.
CO BCKGRD METER/RANGE/PPM		.8/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT		65.9/ 14/ .4444
CO2 BCKGRD METER/RANGE/PCT		14.7/ 14/ .0506
NOX SAMPLE METER/RANGE/PPM		19.7/ 1/ 4.9
NOX BCKGRD METER/RANGE/PPM		.1/ 1/ .0
DILUTION FACTOR		26.69
THC CONCENTRATION PPM		2.
CO CONCENTRATION PPM		0.
CO2 CONCENTRATION PCT		.3957
NOX CONCENTRATION PPM		4.9
THC MASS GRAMS		.314
CO MASS GRAMS		.003
CO2 MASS GRAMS		1135.6
NOX MASS GRAMS		1.423
RUN TIME	SECONDS	600.
DFC, WET (DRY)		.963 (.946)
SCF, WET (DRY)		1.000 (.975)
VOL (SCM)		156.8
SAM BLR (SCM)		.00
MI (MEASURED)		1.14
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 (SCM)		199.7
SAM BLR (SCM)		.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
HICLE MODEL 89 CROWN VICTORIA
GINE 4.9 L(302. CID) V-8
ANSMISSION 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)

ROMETER 738.12 MM HG(29.06 IN HG)
LATIVE 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 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)	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	9.58	10.678 10.295	9.96
RUN TIME SECONDS	505.	868.	505.	868.
MEASURED DISTANCE MI	3.57 7.42	3.85	3.56 7.41	3.84
SCF, DRY	.971 .974	.977	.973 .976	.977
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
HICLE MODEL 89 CROWN VICTORIA
GINE 4.9 L(302. CID) V-8
ANSMISSION A4

ROMETER 737.87 MM HG(29.05 IN HG)
LATIVE HUMIDITY 58. PCT
: RESULTS

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

TEST CYCLE		HFET
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)		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 (SCM)		199.5
SAM BLR (SCM)		.00
MI (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

EST NO. F2HC2K-01 RUN
EHICLE MODEL 89 CROWN VICTORIA
NGINE 4.9 L(302. CID) V-8
RANSMISSION A4

AROMETER 737.87 MM HG(29.05 IN HG)
ELATIVE 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 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)	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.
DFC, 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

ST NO. F2HCZK-02 RUN
HICLE MODEL 89 CROWN VICTORIA
GINE 4.9 L(302. CID) V-8
ANSMISSION 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 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 3861. KM(2399. MILES)

ROMETER 738.38 MM HG(29.07 IN HG)
LATIVE HUMIDITY 58. PCT
; RESULTS

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

NOX HUMIDITY CORRECTION FACTOR .99

BAG NUMBER / DESCRIPTION	1 COLD TRANSIENT	2 STABILIZED	3 HOT TRANSIENT	4 STABILIZED
BLOWER DIF 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	9.69	10.691 10.364	10.08
RUN TIME SECONDS	505.	867.	505.	868.
MEASURED DISTANCE MI	3.57 7.40	3.83	3.57 7.38	3.81
SCF, DRY	.967 .970	.973	.969 .972	.973
DFC, WET (DRY)	.948(.930)		.953(.935)	
TOT VOL (SCM) / SAM BLR (SCM)	358.2/ .00		358.3/ .00	

SITE RESULTS

TEST NUMBER		F2HCZK-02
BAROMETER	MM HG	738.4
HUMIDITY	G/KG	10.3
TEMPERATURE	DEG C	22.8

		3-BAG	(4-BAG)
CARBON DIOXIDE	G/MI	487.2	(481.7)
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. F2HC2K-02 RUN
HICLE MODEL 89 CROWN VICTORIA
GINE 4.9 L(302. CID) V-8
NSMISSION 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
NOX HUMIDITY CORRECTION FACTOR 1.00

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

	H-FET
BLOWER DIF 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.
DFC, WET (DRY)	.923 (.906)
SCF, WET (DRY)	1.000 (.965)
VOL (SCM)	199.5
SAM BLR (SCM)	.00
MI (MEASURED)	10.18

EST NUMBER,		F2HC2K-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

:T NO. F2HC2K-02 RUN
ICLE MODEL 89 CROWN VICTORIA
:INE 4.9 L(302. CID) V-8
MSMISSION A4

:OMETER 738.12 MM HG(29.06 IN HG)
ATIVE 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 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	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.
DFC, WET (DRY)	.964 (.947)
SCF, WET (DRY)	1.000 (.974)
VOL (SCM)	156.8
SAM BLR (SCM)	.00
MI (MEASURED)	1.13

EST NUMBER,		F2HC2K-02
ARONETER,	MM HG	738.1
UMIDITY,	G/KG	10.3
EMPERATURE,	DEG C	22.8
ARBON DIOXIDE,	G/MI	968.3
UEL ECONOMY,	MPG	4.91
YDROCARBONS, (THC)	G/MI	.237
ARBON MONOXIDE,	G/MI	.005
XIDES OF NITROGEN,	G/MI	1.208

SOUTHWEST RESEARCH INSTITUTE - DEPARMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R — 4-BAG CARB FTP VEHICLE EMISSION RESULTS — PROJECT NO. 08-5102-001

HICLE NUMBER 95
HICLE MODEL 89 CROWN VICTORIA
GINE 4.9 L (302 CID)-V-8
ANSMISSION 4
OMETER 4595 MILES (7393 KM)

TEST F2HC4K-01
DATE 5/10/93 RUN 1
DYNO 2 BAG CART 2
ACTUAL ROAD LOAD 12.60 HP (9.40 KW)
TEST WEIGHT 4250 LBS (1927 KG)

GASOLINE EM-1179-F
FUEL DENSITY 6.568 LB/GAL
H .128 C .436 O .436 X .000

ROMETER 29.41 IN HG (747.0 MM HG)
LATIVE HUMIDITY 36.7 PCT.

DRY BULB TEMPERATURE 78.0°F (25.6°C)

NOX HUMIDITY C.F. .908

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)
GAS METER 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
CH4 SAMPLE PPM (1.120)	4.38	3.09	3.18	3.04
CH4 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
CH4 CONCENTRATION PPM	1.99	.77	.94	.80
NMHC CONCENTRATION PPM	3.38	.03	.42	.06
FIDHC 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
CH4 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 - DEPARMENT 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)	HFET
METER	4571 MILES (7354 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	765.0
RY/WET CORRECTION FACTOR, SAMP/BACK	.966/.982
EASURED DISTANCE MILES (KM)	10.13 (16.30)
LOWER FLOW RATE SCFM (SCMM)	559.2 (15.84)
AS METER FLOW RATE SCFM (SCMM)	.00 (.00)
OTAL FLOW SCF (SCM)	7129. (201.9)
C SAMPLE METER/RANGE/PPM (BAG)	19.2/ 5/ 9.62
C BCKGRD METER/RANGE/PPM	18.6/ 5/ 9.32
O SAMPLE METER/RANGE/PPM	3.3/ 12/ 3.14
O BCKGRD METER/RANGE/PPM	.6/ 12/ .57
O2 SAMPLE METER/RANGE/PCT	90.8/ 14/ .8866
O2 BCKGRD METER/RANGE/PCT	14.8/ 14/ .0510
OX SAMPLE METER/RANGE/PPM (BAG) (D)	34.9/ 1/ 8.73
OX BCKGRD METER/RANGE/PPM	.5/ 1/ .13
H4 SAMPLE PPM (1.120)	3.49
H4 BCKGRD PPM	2.91
ILUTION FACTOR	13.45
C CONCENTRATION PPM	.99
O CONCENTRATION PPM	2.49
O2 CONCENTRATION PCT	.8393
OX CONCENTRATION PPM	8.61
H4 CONCENTRATION PPM	.80
HC CONCENTRATION PPM	.10
DHC MASS GRAMS	.230
O MASS GRAMS	.585
O2 MASS GRAMS	3102.57
OX MASS GRAMS	3.413
H4 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 - DEPARMENT OF EMISSIONS RESEARCH

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

ICLE NUMBER 95
ICLE MODEL 89 CROWN VICTORIA
INE 4.9 L (302 CID)-V-8
NSMISSION A4
METER 4581 MILES (7370 KM)

TEST F2HC4K-01
DATE 5/ 7/93 RUN 1
DYNO 2 BAG CART 2
ACTUAL ROAD LOAD 12.60 HP (9.40 KW)
TEST WEIGHT 4250 LBS (1927 KG)

GASOLINE EM-1179-F
FUEL DENSITY 6.568 LB/GAL
H .128 C .436 O .436 X .000
NYCC

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 (SCMM)	560.6 (15.88)
AS METER FLOW RATE SCFM (SCMM)	.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
DHC 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)

AG 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 - DEPARMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R — 4-BAG CARB FTP VEHICLE EMISSION RESULTS — PROJECT NO. 08-5102-001

VEHICLE NUMBER 95
VEHICLE MODEL 89 CROWN VICTORIA
ENGINE 4.9 L (302 CID)-V-8
TRANSMISSION A4
ODOMETER 4620 MILES (7433 KM)

TEST F2HC4K-02
DATE 5/11/93 RUN 1
DYNO 2 BAG CART 2
ACTUAL ROAD LOAD 12.60 HP (9.40 KW)
TEST WEIGHT 4250 LBS (1927 KG)

GASOLINE EM-1179-F
FUEL DENSITY 6.568 LB/GAL
H .128 C .436 O .436 X .000

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

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 (SCMM)	555.6 (15.74)	555.6 (15.74)	554.0 (15.69)	553.7 (15.68)
GAS METER FLOW RATE SCFM (SCMM)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
TOTAL FLOW SCF (SCM)	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
FIDHC 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

FIDHC	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 - DEPARMENT 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)	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 (SCMM)	553.3 (15.67)
GAS METER FLOW RATE SCFM (SCMM)	.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 - DEPARMENT 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 (SCMM)	555.7 (15.74)
GAS METER FLOW RATE SCFM (SCMM)	.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

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

NOX HUMIDITY CORRECTION FACTOR .9

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)	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	9.65	11.043 10.436	9.93
RUN TIME SECONDS	505.	867.	505.	868.
MEASURED DISTANCE MI	3.63 7.54	3.91	3.63 7.54	3.91
SCF, DRY	.973 .976	.978	.974 .977	.978
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

		3-BAG	(4-B
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

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

NOX HUMIDITY CORRECTION FACTOR .86

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)	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	9.78	11.058 10.533	10.09
RUN TIME SECONDS	505.	866.	505.	868.
MEASURED DISTANCE MI	3.61 7.50	3.89	3.59 7.45	3.86
SCF, DRY	.976 .979	.981	.978 .980	.981
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

		3-BAG	(4-BAG
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. V1DCOK-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	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)	41.1 (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	18.94	21.391 20.556	19.83
RUN TIME SECONDS	505.	868.	506.	867.
MEASURED DISTANCE MI	3.60 7.46	3.86	3.57 7.39	3.82
SCF, DRY	.982 .984	.985	.983 .984	.985
DFC, WET (DRY)	.951(.941)		.956(.946)	
TOT VOL (SCM) / SAM BLR (SCM)	362.2/ .00		362.3/ .00	

OMPOSITE RESULTS

TEST NUMBER		V1DCOK-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. V1DCOK-01 RUN
VEHICLE MODEL 89 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 SECONDS	765.
DFC, WET (DRY)	.930 (.920)
SCF, WET (DRY)	1.000 (.980)
VOL (SCM)	201.6
SAM BLR (SCM)	.00
MI (MEASURED)	10.10

TEST NUMBER,		V1DCOK-01
BAROMETER,	MM HG	745.5
HUMIDITY,	G/KG	5.6
TEMPERATURE,	DEG C	21.7
CARBON DIOXIDE,	G/MI	327.8
FUEL ECONOMY,	MPG	31.04
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. V1DCOK-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
BAG 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,		V1DCOK-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. V1DCOK-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	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)	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	18.80	21.663 20.606	19.71
RUN TIME SECONDS	505.	869.	505.	869.
MEASURED DISTANCE MI	3.60 7.45	3.85	3.56 7.38	3.83
SCF, DRY	.983 .985	.986	.985 .986	.987
DFC, WET (DRY)	.951(.943)		.956(.948)	
TOT VOL (SCM) / SAM BLR (SCM)	365.2/ .00		365.7/ .00	

OMPOSITE RESULTS

TEST NUMBER		V1DCOK-02
BAROMETER	HM 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. V1DCOK-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

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

BAG RESULTS

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 (SCM)		203.6
SAM BLR (SCM)		.00
MI (MEASURED)		10.09
TEST NUMBER,		V1DCOK-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. V1DCOK-02 RUN
EHICLE MODEL 89 CROWN VICTORIA
NGINE 5.0 L(305. CID) V-8
RANSMISSION L4

AROMETER 750.57 MM HG(29.55 IN HG)
ELATIVE HUMIDITY 32. PCT
AG 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 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/PPM	19.9/ 2/ 20.
THC BCKGRD METER/RANGE/PPM	17.6/ 2/ 18.
CO SAMPLE METER/RANGE/PPM	13.5/ 12/ 13.
CO BCKGRD METER/RANGE/PPM	.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/PPM	3.2/ 1/ .8
NOX BCKGRD METER/RANGE/PPM	.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.
DFC, WET (DRY)	.967 (.957)
SCF, WET (DRY)	1.000 (.986)
VOL (SCM)	159.4
SAM BLR (SCM)	.00
MI (MEASURED)	1.13

TEST NUMBER,		V1DCOK-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. V2DCOK-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
BAG RESULTS

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

NOX HUMIDITY CORRECTION FACTOR .98

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)	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)	41.1 (106.0)	43.3 (110.0)	41.7 (107.0)
BLOWER REVOLUTIONS	19119.	32793.	19110.	32847.
TOT FLOW STD. CU. METRES(SCF)	132.5 (4678.)	228.2 (8058.)	132.2 (4667.)	228.2 (8059.)
THC SAMPLE METER/RANGE/PPM	33.5/ 2/ 33.	12.6/ 2/ 13.	12.0/ 2/ 12.	12.7/ 2/ 13.
THC BCKGRD METER/RANGE/PPM	11.5/ 2/ 11.	12.6/ 2/ 13.	12.5/ 2/ 12.	12.7/ 2/ 13.
CO SAMPLE METER/RANGE/PPM	49.7/ 13/ 116.	2.5/ 12/ 2.	3.1/ 12/ 3.	1.5/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	.3/ 13/ 1.	1.3/ 12/ 1.	.5/ 12/ 0.	1.0/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	87.3/ 14/ .8048	70.0/ 14/ .4995	81.5/ 14/ .6865	68.6/ 14/ .4801
CO2 BCKGRD METER/RANGE/PCT	14.4/ 14/ .0494	14.6/ 14/ .0502	14.5/ 14/ .0498	14.6/ 14/ .0502
NOX SAMPLE METER/RANGE/PPM	38.4/ 1/ 9.6	11.2/ 1/ 2.8	31.3/ 1/ 7.8	12.0/ 1/ 3.0
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2	.6/ 1/ .2	.0/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR	14.54	23.78	17.31	24.74
THC CONCENTRATION PPM	23.	1.	0.	1.
CO CONCENTRATION PPM	111.	1.	2.	0.
CO2 CONCENTRATION PCT	.7588	.4514	.6396	.4319
NOX CONCENTRATION PPM	9.5	2.7	7.8	3.0
THC MASS GRAMS	3.458	.139	.034	.134
CO MASS GRAMS	17.097	.303	.369	.129
CO2 MASS GRAMS	1840.2	1885.8	1547.7	1804.6
NOX MASS GRAMS	2.359	1.147	1.950	1.295
THC GRAMS/MI	.956	.036	.009	.035
CO GRAMS/MI	4.727	.078	.103	.034
CO2 GRAMS/MI	508.7	485.1	432.2	469.8
NOX GRAMS/MI	.652	.295	.545	.337
FUEL ECONOMY IN MPG	9.184 9.492	9.80	10.996 10.524	10.12
RUN TIME SECONDS	505.	867.	506.	869.
MEASURED DISTANCE MI	3.62 7.50	3.89	3.58 7.42	3.84
SCF, DRY	.967 .971	.973	.969 .972	.973
DFC, WET (DRY)	.948(.930)		.953(.935)	
TOT VOL (SCM) / SAM BLR (SCM)	360.7/ .00		360.4/ .00	

MPOSITE RESULTS

TEST NUMBER		V2DCOK-01
BAROMETER	MM HG	742.7
HUMIDITY	G/KG	10.2
TEMPERATURE	DEG C	22.8

		3-BAG	(4-BAG)
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. V2DCOK-01 RUN	VEHICLE NO.38463	TEST WEIGHT 1928. KG(4250. LBS)
EHICLE MODEL 89 CROWN VICTORIA	DATE 11/10/92	ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
NGINE 5.0 L(305. CID) V-8	BAG CART NO. 2	METHANOL EM-1179-F
RANSMISSION L4	DYNO NO. 2	ODOMETER 38550. KM(23954. MILES)
	CVS NO. 8	C = .436 H = .128 O = .437
AROMETER 742.44 MM HG(29.23 IN HG)	DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)	FUEL DENSITY = 6.57
ELATIVE HUMIDITY 54. PCT	ABS. HUMIDITY 10.0 GM/KG	NOX HUMIDITY CORRECTION FACTOR .98

AG 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)	42.8 (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.
DFC, WET (DRY)	.924 (.908)
SCF, WET (DRY)	1.000 (.967)
VOL (SCM)	200.4
SAM BLR (SCM)	.00
MI (MEASURED)	10.13

TEST NUMBER,		V2DCOK-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. V2DCOK-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 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	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 SECONDS	599.
DFC, WET (DRY)	.964 (.946)
SCF, WET (DRY)	1.000 (.974)
VOL (SCM)	157.1
SAM BLR (SCM)	.00
MI (MEASURED)	1.13

TEST NUMBER,		V2DCOK-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. V2DCOK-02 RUN
HICLE MODEL 89 CROWN VICTORIA
GINE 5.0 L(305. CID) V-8
ANSMISSION 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)

ROMETER 740.66 MM HG(29.16 IN HG)
LATIVE HUMIDITY 66. PCT

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

NOX HUMIDITY CORRECTION FACTOR 1.05

G 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)	42.8 (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 10.626	10.15
RUN TIME SECONDS	505.	868.	505.	867.
MEASURED DISTANCE MI	3.60 7.47	3.87	3.58 7.41	3.83
SCF, DRY	.965 .968	.970	.967 .969	.970
DPC, WET (DRY)	.949(.929)		.954(.934)	
TOT VOL (SCM) / SAM BLR (SCM)	359.3/ .00		358.9/ .00	

POSITE RESULTS

TEST NUMBER		V2DCOK-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

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

BAG RESULTS

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	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 SECONDS	765.
DFC, WET (DRY)	.926 (.909)
SCF, WET (DRY)	1.000 (.966)
VOL (SCM)	200.0
SAM BLR (SCM)	.00
MI (MEASURED)	10.11
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

EST NO. V2DCOK-02 RUN	VEHICLE NO.38463	TEST WEIGHT 1928. KG(4250. LBS)
EHICLE MODEL 89 CROWN VICTORIA	DATE 11/11/92	ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
NGINE 5.0 L(305. CID) V-8	BAG CART NO. 2	M85 EM-1179-F
RANSMISSION L4	DYNO NO. 2	ODOMETER 38611. KM(23992. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
AROMETER 740.41 MM HG(29.15 IN HG)	DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)	FUEL DENSITY = 6.57
ELATIVE HUMIDITY 65. PCT	ABS. HUMIDITY 11.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.02

AG 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 SECONDS	599.
DFC, WET (DRY)	.965 (.945)
SCF, WET (DRY)	1.000 (.972)
VOL (SCM)	156.6
SAM BLR (SCM)	.00
MI (MEASURED)	1.15

TEST NUMBER,		V2DCOK-02
BAROMETER,	MM HG	740.4
HUMIDITY,	G/KG	11.2
TEMPERATURE,	DEG C	22.2
CARBON DIOXIDE,	G/MI	926.9
FUEL ECONOMY,	MPG	5.13
HYDROCARBONS, (THC)	G/MI	.101
CARBON MONOXIDE,	G/MI	.251
OXIDES OF NITROGEN,	G/MI	.806

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

BAG NUMBER	1	2	3	4
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	10.06	11.251 10.760	10.34
RUN TIME SECONDS	505.	868.	505.	868.
MEASURED DISTANCE MI	3.55 7.40	3.85	3.55 7.39	3.84
SCF, DRY	.971 .974	.976	.973 .975	.976
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

T NO. V2DC2K-01 RUN	VEHICLE NO.38463	TEST WEIGHT 1928. KG(4250. LBS)
ICLE MODEL 89 CROWN VICTORIA	DATE 2/ 9/93	ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
INE 5.0 L(305. CID) V-8	BAG CART NO. 2	METHANOL EM-1179-P
ISMISSION L4	DYNO NO. 2	ODOMETER 42051. KM(26129. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
OMETER 738.63 MM HG(29.08 IN HG)	DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)	FUEL DENSITY = 6.57
ATIVE HUMIDITY 53. PCT	ABS. HUMIDITY 10.7 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.00

RESULTS

TEST CYCLE	H-FET
BLOWER DIF 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.
OT 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.
O SAMPLE METER/RANGE/PPM	1.0/ 12/ 1.
O 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
OX SAMPLE METER/RANGE/PPM	60.5/ 1/ 15.1
OX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
ILUTION FACTOR	13.64
HC CONCENTRATION PPM	0.
O CONCENTRATION PPM	0.
O2 CONCENTRATION PCT	.8324
OX CONCENTRATION PPM	15.0
HC MASS GRAMS	.113
O MASS GRAMS	.011
O2 MASS GRAMS	3042.4
OX MASS GRAMS	5.745
IN TIME SECONDS	765.
DFC, WET (DRY)	.927 (.911)
SCF, WET (DRY)	1.000 (.968)
VOL (SCM)	199.6
SAM BLR (SCM)	.00
MI (MEASURED)	10.11
EST NUMBER,	V2DC2K-01
AROMETER, MM HG	738.6
MIDITY, G/KG	10.7
MPERATURE, DEG C	25.0
RBON DIOXIDE, G/MI	300.8
EL ECONOMY, MPG	15.81
DROCARBONS, (THC) G/MI	.011
RBON MONOXIDE, G/MI	.001
IDES OF NITROGEN, G/MI	.568

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

:T NO. V2DC2K-01 RUN
ICLE MODEL 89 CROWN VICTORIA
INE 5.0 L(305. CID) V-8
NSMISSION L4

OMETER 738.63 MM HG(29.08 IN HG)
ATIVE HUMIDITY 50. PCT
RESULTS
TEST CYCLE

VEHICLE NO.38463
DATE 2/ 9/93
BAG CART NO. 2
DYNO 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 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	22655.
TOT FLOW STD. CU. METRES(SCF)	156.6 (5531.)
THC SAMPLE METER/RANGE/PPM	11.4/ 2/ 11.
THC BCKGRD METER/RANGE/PPM	8.8/ 2/ 9.
CO SAMPLE METER/RANGE/PPM	1.4/ 12/ 1.
CO BCKGRD METER/RANGE/PPM	1.0/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	62.0/ 14/ .3966
CO2 BCKGRD METER/RANGE/PCT	13.0/ 14/ .0438
NOX SAMPLE METER/RANGE/PPM	14.3/ 1/ 3.6
NOX BCKGRD METER/RANGE/PPM	.0/ 1/ .0
DILUTION FACTOR	29.93
THC CONCENTRATION PPM	3.
CO CONCENTRATION PPM	0.
CO2 CONCENTRATION PCT	.3543
NOX CONCENTRATION PPM	3.6
THC MASS GRAMS	.519
CO MASS GRAMS	.071
CO2 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
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	1	2	3	4
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)	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	11.276 10.790	10.37
RUN TIME SECONDS	505.	868.	504.	868.
MEASURED DISTANCE MI	3.60 7.47	3.87	3.57 7.40	3.83
SCF, DRY	.970 .973	.975	.972 .974	.976
DFC, WET (DRY)	.950(.935)		.954(.939)	
TOT VOL (SCM) / SAM BLR (SCM)	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
EHICLE MODEL 89 CROWN VICTORIA
NGINE 5.0 L(305. CID) V-8
RANSMISSION L4

ARROMETER 738.38 MM HG(29.07 IN HG)
ELATIVE HUMIDITY 48. PCT
AG RESULTS

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

TEST CYCLE	HFET
BLOWER DIF 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	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

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

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

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 SECONDS	600.
DFC, WET (DRY)	.966 (.951)
SCF, WET (DRY)	1.000 (.977)
VOL (SCM)	157.0
SAM BLR (SCM)	.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. V2DC4K-01 RUN
EHICLE MODEL 89 CROWN VICTORIA
NGINE 5.0 L(305. CID) V-8
RANSMISSION 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 KW(12.6 HP)
METHANOL EM-1179-F
ODOMETER 45419. KM(28222. MILES)

ROMETER 739.90 MM HG(29.13 IN HG)
ELATIVE HUMIDITY 53. PCT
AG RESULTS

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

NOX HUMIDITY CORRECTION FACTOR .94

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)	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	9.82	11.098 10.646	10.26
RUN TIME SECONDS	505.	868.	505.	867.
MEASURED DISTANCE MI	3.61 7.49	3.87	3.58 7.43	3.85
SCF, DRY	.969 .972	.974	.971 .973	.975
DFC, WET (DRY)	.947(.931)		.953(.937)	
TOT VOL (SCM) / SAM BLR (SCM)	358.6/ .00		358.1/ .00	

OSITE RESULTS

TEST NUMBER		V2DC4K-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
EHICLE MODEL 89 CROWN VICTORIA
NGINE 5.0 L(305. CID) V-8
RANSMISSION L4

AROMETER 739.90 MM HG(29.13 IN HG)
ELATIVE HUMIDITY 51. PCT
AG RESULTS

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 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.
DFC, WET (DRY)	.925 (.909)
SCF, WET (DRY)	1.000 (.968)
VOL (SCM)	199.6
SAM BLR (SCM)	.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	VEHICLE NO.38463	TEST WEIGHT 1928. KG(4250. LBS)
CLE MODEL 89 CROWN VICTORIA	DATE 3/ 1/93	ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
NE 5.0 L(305. CID) V-8	BAG CART NO. 2	METHANOL EM-1179-F
SMISSION L4	DYNO NO. 2	ODOMETER 45458. KM(28246. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
METER 739.90 MM HG(29.13 IN HG)	DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)	FUEL DENSITY = 6.57
TIVE HUMIDITY 51. PCT	ABS. HUMIDITY 9.4 GM/KG	NOX HUMIDITY CORRECTION FACTOR .96

RESULTS

EST CYCLE	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.
O SAMPLE METER/RANGE/PPM	8.4/ 12/ 8.
O BCKGRD METER/RANGE/PPM	1.0/ 12/ 1.
O2 SAMPLE METER/RANGE/PCT	62.9/ 14/ .4073
O2 BCKGRD METER/RANGE/PCT	13.9/ 14/ .0474
OX SAMPLE METER/RANGE/PPM	15.0/ 1/ 3.8
OX BCKGRD METER/RANGE/PPM	.1/ 1/ .0
ILUTION FACTOR	29.10
HC CONCENTRATION PPM	2.
O CONCENTRATION PPM	7.
O2 CONCENTRATION PCT	.3615
OX CONCENTRATION PPM	3.7
HC MASS GRAMS	.356
O MASS GRAMS	1.259
O2 MASS GRAMS	1035.7
OX MASS GRAMS	1.072
RUN TIME SECONDS	600.
DFC, WET (DRY)	.966 (.950)
SCF, WET (DRY)	1.000 (.976)
VOL (SCM)	156.5
SAM BLR (SCM)	.00
MI (MEASURED)	1.19
EST 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

: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 / 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)

:ROMETER 738.38 MM HG(29.07 IN HG)
:LATIVE HUMIDITY 36. PCT
:G RESULTS

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

NOX HUMIDITY CORRECTION FACTOR .88

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)	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	9.89	11.216 10.750	10.35
RUN TIME SECONDS	505.	867.	505.	867.
MEASURED DISTANCE MI	3.60 7.48	3.88	3.57 7.39	3.81
SCF, DRY	.974 .978	.980	.977 .979	.980
DFC, WET (DRY)	.948(.937)		.954(.943)	
TOT VOL (SCM) / SAM BLR (SCM)	357.2/ .00		357.0/ .00	

:OSITE 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
HFET - 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

ROMETER 738.12 MM HG(29.06 IN HG)
LATIVE HUMIDITY 42. PCT
G RESULTS
TEST CYCLE

VEHICLE NO.38463
DATE 3/ 2/93
BAG CART NO. 2
DYNO NO. 2
CVS NO. 8
DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)
ABS. HUMIDITY 7.3 GM/KG

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

		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		28960.
TOT FLOW STD. CU. METRES(SCF)		198.9 (7023.)
THC SAMPLE METER/RANGE/PPM		14.6/ 5/ 7.
THC BCKGRD METER/RANGE/PPM		14.5/ 5/ 7.
CO SAMPLE METER/RANGE/PPM		1.1/ 12/ 1.
CO BCKGRD METER/RANGE/PPM		1.1/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT		90.6/ 14/ .8817
CO2 BCKGRD METER/RANGE/PCT		12.6/ 14/ .0422
NOX SAMPLE METER/RANGE/PPM		66.7/ 1/ 16.6
NOX BCKGRD METER/RANGE/PPM		.0/ 1/ .0
DILUTION FACTOR		13.49
THC CONCENTRATION PPM		1.
CO CONCENTRATION PPM		0.
CO2 CONCENTRATION PCT		.8425
NOX CONCENTRATION PPM		16.6
THC MASS GRAMS		.134
CO MASS GRAMS		.012
CO2 MASS GRAMS		3067.9
NOX MASS GRAMS		5.667
RUN TIME	SECONDS	765.
DFC, WET (DRY)		.926 (.913)
SCF, WET (DRY)		1.000 (.971)
VOL (SCM)		198.9
SAM BLR (SCM)		.00
MI (MEASURED)		10.17
TEST NUMBER,		V2DC4K-02
BAROMETER,	MM HG	738.1
HUMIDITY,	G/KG	7.3
TEMPERATURE,	DEG C	22.2
CARBON DIOXIDE,	G/MI	301.6
FUEL ECONOMY,	MPG	15.76
HYDROCARBONS, (THC)	G/MI	.013
CARBON MONOXIDE,	G/MI	.001
OXIDES OF NITROGEN,	G/MI	.557

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

ST NO. V2DC4K-02 RUN	VEHICLE NO.38463	TEST WEIGHT 1928. KG(4250. LBS)
HICLE MODEL 89 CROWN VICTORIA	DATE 3/ 2/93	ACTUAL ROAD LOAD 9.4 KW(12.6 HP)
GINE 5.0 L(305. CID) V-8	BAG CART NO. 2	METHANOL EM-1179-F
ANSMISSION L4	DYNO NO. 2	ODOMETER 45499. KM(28272. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
ROMETER 737.87 MM HG(29.05 IN HG)	DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)	FUEL DENSITY = 6.57
LATIVE HUMIDITY 27. PCT	ABS. HUMIDITY 5.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR .85
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)	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.
DFC, WET (DRY)	.966 (.958)
SCF, WET (DRY)	1.000 (.984)
VOL (SCM)	156.1
SAM BLR (SCM)	.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 08-5102-001

ACTIME1 = 65
AWTIME1 = 0

NO. JETTA-CK RUN 1	VEHICLE NO.M100	TEST WEIGHT 1247. KG(2750. LBS)
CLE MODEL 89 VW JETTA	DATE 10/23/92	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
NE 1.8 L(110. CID) L-4	BAG CART NO. 2 / CVS NO. 8	M85 EM-1179-F
SMISSION A3	DYNO NO. 2	ODOMETER 30814. KM(19147. MILES)

METER 750.57 MM HG(29.55 IN HG) DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)
TIVE HUMIDITY 52. PCT ABS. HUMIDITY 10.1 GM/KG NOX HUMIDITY CORRECTION FACTOR .98

RESULTS

AG NUMBER	1	2	3	4
ESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	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.
O SAMPLE METER/RANGE/PPM	42.3/ 12/ 41.	19.2/ 12/ 19.	26.0/ 12/ 25.	14.4/ 12/ 14.
O BCKGRD METER/RANGE/PPM	.6/ 12/ 1.	.5/ 12/ 0.	.6/ 12/ 1.	.6/ 12/ 1.
O2 SAMPLE METER/RANGE/PCT	78.1/ 14/ .6254	61.5/ 14/ .3908	72.7/ 14/ .5387	60.6/ 14/ .3804
O2 BCKGRD METER/RANGE/PCT	13.8/ 14/ .0470	13.7/ 14/ .0466	13.8/ 14/ .0470	14.0/ 14/ .0478
OX SAMPLE METER/RANGE/PPM	6.5/ 1/ 1.6	.9/ 1/ .2	1.7/ 1/ .4	.4/ 1/ .1
OX BCKGRD METER/RANGE/PPM	.9/ 1/ .2	.8/ 1/ .2	.8/ 1/ .2	.4/ 1/ .1
ILUTION FACTOR	18.89	30.26	21.96	31.12
HC CONCENTRATION PPM	4.	1.	2.	1.
O CONCENTRATION PPM	39.	18.	24.	13.
O2 CONCENTRATION PCT	.5809	.3457	.4939	.3342
OX CONCENTRATION PPM	1.4	.0	.2	.0
HC MASS GRAMS	.580	.283	.304	.176
O MASS GRAMS	6.148	4.735	3.726	3.475
O2 MASS GRAMS	1431.8	1467.0	1214.7	1413.2
OX MASS GRAMS	.358	.014	.059	.001
HC GRAMS/MI	.159	.072	.085	.046
O GRAMS/MI	1.686	1.210	1.040	.901
O2 GRAMS/MI	392.7	374.9	339.0	366.3
OX GRAMS/MI	.098	.004	.017	.000
UEL ECONOMY IN MPG	12.019 12.320	12.61	13.954 13.401	12.93
UN TIME SECONDS	505.	870.	505.	868.
EASURED DISTANCE MI	3.65 7.56	3.91	3.58 7.44	3.86
CF, DRY	.972 .975	.976	.974 .976	.977
DFC, WET (DRY)	.960(.944)		.963(.947)	
TOT VOL (SCM) / SAM BLR (SCM)	366.4/ .00		365.3/ .00	

SITE RESULTS

EST NUMBER		JETTA-CK
AROMETER	MM HG	750.6
UMIDITY	G KG	10.1
EMPERATURE	DEG C	24.4

		3-BAG	(4-BAG)
CARBON DIOXIDE	G MI	368.8	(366.2)
FUEL ECONOMY	MPG	12.818	(12.91)
HYDROCARBONS (THC)	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 NO.M100	TEST WEIGHT 1247. KG(2750. LBS)
CLE MODEL 89 VW JETTA	DATE 10/28/92	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
NE 1.8 L(110. CID) L-4	BAG CART NO. 2	M85 EM-1179-F
SMISSION A3	DYNO NO. 2	ODOMETER 30845. KM(19166. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
METER 737.87 MM HG(29.05 IN HG)	DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)	FUEL DENSITY = 6.57
TIVE HUMIDITY 48. PCT	ABS. HUMIDITY 9.1 GM/KG	NOX HUMIDITY CORRECTION FACTOR .95

RESULTS

AG NUMBER	1	2
ESCRIPTION	COLD TRANSIENT	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.
OT 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
OX SAMPLE METER/RANGE/PPM	7.4/ 1/ 1.9	.6/ 1/ .2
OX BCKGRD METER/RANGE/PPM	1.2/ 1/ .3	.6/ 1/ .2
ILUTION FACTOR	19.24	30.70
HC CONCENTRATION PPM	3.	1.
O CONCENTRATION PPM	27.	9.
O2 CONCENTRATION PCT	.5676	.3380
OX CONCENTRATION PPM	1.6	.0
HC MASS GRAMS	.432	.186
O MASS GRAMS	4.179	2.435
O2 MASS GRAMS	1369.8	1370.3
OX MASS GRAMS	.377	.002
HC GRAMS/MI	.120	.048
O GRAMS/MI	1.161	.630
O2 GRAMS/MI	380.4	354.7
OX GRAMS/MI	.105	.001
UEL ECONOMY IN MPG	12.433	13.364
UN TIME SECONDS	505.	368.
EASURED DISTANCE MI	3.60	3.86
CF, DRY	.974	.978

SITE RESULTS

EST NUMBER		JETTA-CK
AROMETER	MM HG	737.9
UMIDITY	G/KG	9.1
EMPERATURE	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	.886	(.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	VEHICLE NO.M100	TEST WEIGHT 1247. KG(2750. LBS)
CLE MODEL 89 VW JETTA	DATE 10/29/92	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
NE 1.8 L(110. CID) L-4	BAG CART NO. 2	M85 EM-1179-F
SMISSION A3	DYNO NO. 2	ODOMETER 30870. KM(19182. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
METER 736.60 MM HG(29.00 IN HG)	DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)	FUEL DENSITY = 6.57
TIVE HUMIDITY 62. PCT	ABS. HUMIDITY 11.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.03

RESULTS

AG NUMBER	3	4
ESCRIPTION	HOT TRANSIENT	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
UEL ECONOMY IN MPG	13.723	13.164
UN TIME SECONDS	505.	867.
EASURED DISTANCE MI	3.61	3.91
CF, DRY	.970	.973

SITE RESULTS

EST NUMBER		JETTA-CK
AROMETER	MM HG	736.6
UMIDITY	G/KG	11.5
EMPERATURE	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 A3

VEHICLE NO.M100
DATE 10/30/92
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 30803. KM(19140. MILES)

OMETER 738.63 MM HG(29.08 IN HG)
ATIVE HUMIDITY 60. PCT

DRY BULB TEMP. 21.7 DEG C(71.0 DEG F)
ABS. HUMIDITY 10.1 GM/KG

NOX HUMIDITY CORRECTION FACTOR .98

RESULTS

BAG NUMBER	1	2	3	4
DESCRIPTION	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)	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 14.124	13.64
RUN TIME SECONDS	506.	868.	505.	867.
MEASURED DISTANCE MI	3.58 7.41	3.83	3.55 7.37	3.82
SCF, DRY	.970 .972	.974	.971 .973	.974
DFC, WET (DRY)	.961(.942)		.964(.945)	
TOT VOL (SCM) / SAM BLR (SCM)	358.0/ .00		358.3/ .00	

SITE 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

METER 736.60 MM HG(29.00 IN HG)
TIVE HUMIDITY 57. PCT

VEHICLE NO.M100
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

RESULTS

AG NUMBER	1	2
ESCRIPTION	HOT TRANSIENT	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/ 8.	7.6/ 2/ 8.
HC BCKGRD METER/RANGE/PPM	7.4/ 2/ 7.	7.5/ 2/ 7.
O SAMPLE METER/RANGE/PPM	18.4/ 12/ 18.	11.8/ 12/ 11.
O BCKGRD METER/RANGE/PPM	2.3/ 12/ 2.	1.3/ 12/ 1.
O2 SAMPLE METER/RANGE/PCT	71.6/ 14/ .5224	59.3/ 14/ .3659
O2 BCKGRD METER/RANGE/PCT	14.0/ 14/ .0478	13.8/ 14/ .0470
OX SAMPLE METER/RANGE/PPM	5.1/ 1/ 1.3	.6/ 1/ .2
OX BCKGRD METER/RANGE/PPM	.7/ 1/ .2	.6/ 1/ .2
ILUTION FACTOR	22.68	32.38
HC CONCENTRATION PPM	1.	0.
O CONCENTRATION PPM	15.	10.
O2 CONCENTRATION PCT	.4767	.3203
OX CONCENTRATION PPM	1.1	.0
HC MASS GRAMS	.169	.086
O MASS GRAMS	2.304	2.575
O2 MASS GRAMS	1144.0	1320.3
OX 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	MPG	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
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-5102-001

ACTIME1 = 80
AWTIME1 = 30

T NO. JETTA-CK RUN 6	VEHICLE NO.M100	TEST WEIGHT 1247. KG(2750. LBS)
ICLE MODEL 89 VW JETTA	DATE 11/ 2/92	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
INE 1.8 L(110. CID) L-4	BAG CART NO. 2 / CVS NO. 8	M85 EM-1179-F
ISMISSION A3	DYNO NO. 2	ODOMETER 30932. KM(19220. MILES)

OMETER 739.65 MM HG(29.12 IN HG)	DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)	
ATIVE HUMIDITY 39. PCT	ABS. HUMIDITY 6.6 GM/KG	NOX HUMIDITY CORRECTION FACTOR .88

RESULTS

BAG NUMBER	1	2	3	4
DESCRIPTION	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 13.990	13.51
RUN TIME SECONDS	506.	868.	505.	868.
MEASURED DISTANCE MI	3.57 7.40	3.83	3.60 7.47	3.87
SCF, DRY	.977 .980	.981	.978 .980	.981
DFC, WET (DRY)	.962(.950)		.964(.952)	
TOT VOL (SCM) / SAM BLR (SCM)	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
EHICLE MODEL 89 VW JETTA
NGINE 1.8 L(110. CID) L-4
RANSMISSION 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)

AROMETER 749.55 MM HG(29.51 IN HG)
ELATIVE HUMIDITY 29. PCT
AG RESULTS

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

NOX HUMIDITY CORRECTION FACTOR .84

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)	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 24.253	23.53
RUN TIME SECONDS	505.	868.	505.	867.
MEASURED DISTANCE MI	3.57 7.38	3.81	3.57 7.39	3.83
SCF, DRY	.985 .986	.987	.985 .986	.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-FET - 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-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		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.
DFC, WET (DRY)		.942 (.933)
SCF, WET (DRY)		1.000 (.983)
VOL (SCM)		203.0
SAM BLR (SCM)		.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

ST NO. J1HCOK-02 RUN	VEHICLE NO.M100	TEST WEIGHT 1247. KG(2750. LBS)
HICLE MODEL 89 VW JETTA	DATE 11/13/92	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
GINE 1.8 L(110. CID) L-4	BAG CART NO. 2	GASOLINE EM-1540-F
ANSMISSION A3	DYNO NO. 2	ODOMETER 31356. KM(19484. MILES)
	CVS NO. 8	C = .866 H = .134 O = .000
ROMETER 748.03 MM HG(29.45 IN HG)	DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)	FUEL DENSITY = 6.16
LATIVE HUMIDITY 29. PCT	ABS. HUMIDITY 5.1 GM/KG	NOX HUMIDITY CORRECTION FACTOR .84
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)	41.7 (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.
DFC, WET (DRY)	.975 (.966)
SCF, WET (DRY)	1.000 (.988)
VOL (SCM)	158.7
SAM BLR (SCM)	.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

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

NOX HUMIDITY CORRECTION FACTOR .92

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)	42.8 (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	23.14	25.274 24.458	23.74
RUN TIME SECONDS	505.	868.	505.	868.
MEASURED DISTANCE MI	3.58 7.42	3.84	3.57 7.40	3.83
SCF, DRY	.979 .980	.981	.980 .981	.981
DFC, WET (DRY)	.963(.949)		.966(.952)	
TOT VOL (SCM) / SAM BLR (SCM)	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	SECONDS	765.
DFC, 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
EHICLE MODEL 89 VW JETTA
NGINE 1.8 L(110. CID) L-4
RANSMISSION A3

AROMETER 743.71 MM HG(29.28 IN HG)
ELATIVE HUMIDITY 46. PCT
AG 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 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	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 SECONDS	599.
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 1.8 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)
M85 EM-1179-F
ODOMETER 31141. KM(19350. MILES)

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

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

NOX HUMIDITY CORRECTION FACTOR 1.02

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)	42.8 (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	13.93	15.414 14.815	14.30
RUN TIME SECONDS	505.	868.	505.	869.
MEASURED DISTANCE MI	3.59 7.44	3.85	3.56 7.42	3.86
SCF, DRY	.971 .973	.975	.972 .974	.975
DFC, WET (DRY)	.962(.944)		.965(.947)	
TOT VOL (SCM) / SAM BLR (SCM)	358.3/ .00		359.9/ .00	

COMPOSITE RESULTS

TEST NUMBER		J2HCOK-01
BAROMETER	MM HG	741.2
HUMIDITY	G/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

EST NO. J2HCOK-01 RUN	VEHICLE NO.M100	TEST WEIGHT 1247. KG(2750. LBS)
EHICLE MODEL 89 VW JETTA	DATE 11/10/92	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
NGINE 1.8 L(110. CID) L-4	BAG CART NO. 2	M85 EM-1179-F
RANSMISSION A3	DYNO NO. 2	ODOMETER 31165. KM(19365. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
AROMETER 740.66 MM HG(29.16 IN HG)	DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)	FUEL DENSITY = 6.57
ELATIVE HUMIDITY 55. PCT	ABS. HUMIDITY 10.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR .99

AG 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	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.
DFC, WET (DRY)	.941 (.924)
SCF, WET (DRY)	1.000 (.970)
VOL (SCM)	200.1
SAM BLR (SCM)	.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

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

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 GH/KG

TEST WEIGHT 1247. KG(2750. LBS)
ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
M85 EM-1179-F
ODOMETER 31183. KM(19376. MILES)
C = .436 H = .128 O = .436
FUEL DENSITY = 6.57
NOX HUMIDITY CORRECTION FACTOR .90

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 (SCM)	156.4
SAM BLR (SCM)	.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	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	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/PPM	13.6/ 2/ 14.	12.5/ 2/ 12.	12.8/ 2/ 13.	12.6/ 2/ 13.
THC BCKGRD METER/RANGE/PPM	12.9/ 2/ 13.	12.9/ 2/ 13.	12.9/ 2/ 13.	13.2/ 2/ 13.
CO SAMPLE METER/RANGE/PPM	13.0/ 12/ 12.	5.0/ 12/ 5.	7.5/ 12/ 7.	5.2/ 12/ 5.
CO BCKGRD METER/RANGE/PPM	.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/PPM	11.0/ 1/ 2.8	.2/ 1/ .1	3.9/ 1/ 1.0	.6/ 1/ .2
NOX BCKGRD METER/RANGE/PPM	.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	13.28	14.585 14.076	13.64
RUN TIME SECONDS	505.	868.	505.	867.
MEASURED DISTANCE MI	3.57 7.43	3.85	3.57 7.42	3.85
SCF, DRY	.975 .977	.979	.976 .978	.979
DFC, 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

		3-BAG	(4-BAG)
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

:ST NO. J2HCOK-02 RUN
:HICLE MODEL 89 VW JETTA
GINE 1.8 L(110. CID) L-4
:ANSMISSION A3

:ROMETER 737.87 MM HG(29.05 IN HG)
:LATIVE HUMIDITY 51. PCT
.G RESULTS

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

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.
DFC, 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	VEHICLE NO.M100	TEST WEIGHT 1247. KG(2750. LBS)
ICLE MODEL 89 VW JETTA	DATE 11/11/92	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
INE 1.8 L(110. CID) L-4	BAG CART NO. 2	M85 EM-1179-F
NSMISSION A3	DYNO NO. 2	ODOMETER 31224. KM(19402. MILES)
	CVS NO. 8	C = .436 H = .128 O = .436
OMETER 737.87 MM HG(29.05 IN HG)	DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)	FUEL DENSITY = 6.57
ATIVE HUMIDITY 54. PCT	ABS. HUMIDITY 10.1 GM/KG	NOX HUMIDITY CORRECTION FACTOR .98

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)	41.7 (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.
DFC, 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 - DEPARMENT 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 - DEPARMENT 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)	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 - DEPARMENT 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 (SCMM)	559.9 (15.86)
GAS METER FLOW RATE SCFM (SCMM)	.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 - DEPARMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R 4-BAG CARB FTP VEHICLE EMISSION RESULTS PROJECT NO. 08-5102-001

VEHICLE NUMBER M100
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L (110 CID)-L-4
TRANSMISSION A3
ODOMETER 21585 MILES (34730 KM)

TEST J2HC2K-02
DATE 4/19/93 RUN 1
DYNO 2 BAG CART 2
ACTUAL ROAD LOAD 7.00 HP (5.22 KW)
TEST WEIGHT 2750 LBS (1247 KG)

METHANOL M85 EM-1179-F
FUEL DENSITY 6.568 LB/GAL
H .128 C .436 O .436 X .000

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 (SCMM)	553.3 (15.67)	554.3 (15.70)	552.3 (15.64)	554.7 (15.71)
GAS METER FLOW RATE SCFM (SCMM)	.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 - DEPARMENT 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 - DEPARMENT 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 - DEPARMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R — 4-BAG CARB FTP VEHICLE EMISSION RESULTS — PROJECT NO. 08-5102-001

VEHICLE NUMBER M100
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L (110 CID)-L-4
TRANSMISSION A3
ODOMETER 21585 MILES (34730 KM)

TEST J2HC4K-01
DATE 5/ 7/93 RUN 1
DYNO 2 BAG CART 2
ACTUAL ROAD LOAD 7.00 HP (5.22 KW)
TEST WEIGHT 2750 LBS (1247 KG)

METHANOL M85 EM-1179-F
FUEL DENSITY 6.568 LB/GAL
H .128 C .436 O .436 X .000

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 (SCMM)	550.4 (15.59)	551.5 (15.62)	550.7 (15.60)	551.6 (15.62)
GAS METER FLOW RATE SCFM (SCMM)	.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 - DEPARMENT 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	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	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 (SCMM)	559.5 (15.85)
GAS METER FLOW RATE SCFM (SCMM)	.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 - DEPARMENT 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 (SCMM)	562.8 (15.94)
GAS METER FLOW RATE SCFM (SCMM)	.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 - DEPARMENT OF EMISSIONS RESEARCH

COMPUTER PROGRAM LDT 1.0-R — 4-BAG CARB FTP VEHICLE EMISSION RESULTS — PROJECT NO. 08-5102-001

VEHICLE NUMBER M100
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L (110 CID)-L-4
TRANSMISSION A3
ODOMETER 21585 MILES (34730 KM)

TEST J2HC4K-02
DATE 5/10/93 RUN 1
DYNO 2 BAG CART 2
ACTUAL ROAD LOAD 7.00 HP (5.22 KW)
TEST WEIGHT 2750 LBS (1247 KG)

METHANOL M85 EM-1179-F
FUEL DENSITY 6.568 LB/GAL
H .128 C .436 O .436 X .000

BAROMETER 29.38 IN HG (746.3 MM HG)
RELATIVE HUMIDITY 47.1 PCT.

DRY BULB TEMPERATURE 74.0°F (23.3°C)

NOX HUMIDITY C.F. .935

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 - DEPARMENT 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 (SCMM)	558.7 (15.82)
GAS METER FLOW RATE SCFM (SCMM)	.00 (.00)
TOTAL FLOW SCF (SCM)	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 - DEPARMENT OF EMISSIONS RESEARCH

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

VEHICLE NUMBER M100
VEHICLE MODEL 89 VW JETTA
ENGINE 1.8 L (110 CID)-L-4
TRANSMISSION A3
ODOMETER 23708 MILES (38146 KM)

TEST J2HC4K-02
DATE 5/10/93 RUN 1
DYNO 2 BAG CART 2
ACTUAL ROAD LOAD 7.00 HP (5.22 KW)
TEST WEIGHT 2750 LBS (1247 KG)

METHANOL M85 EM-1179-F
FUEL DENSITY 6.568 LB/GAL
H .128 C .436 O .436 X .000
NYCC

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 (SCMM)	560.4 (15.87)
GAS METER FLOW RATE SCFM (SCMM)	.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)			

CARB LIBRARY
05227