

US EPA ARCHIVE DOCUMENT

H-116
TABLE 3.1A.1
NONTAMPERED EXHAUST EMISSION RATES FOR
LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

* BER = ZML + (DR1 * M), for mileage up to 50K miles (M ≤ 5)
= ZML + DR1*5.0 + DR2*(M - 5.0), for mileage greater than 50K miles (M > 5)

Pol	Model Years	Zero Mile Emission Level	Det. Rate 1	Det. Rate 2	50,000 Mile Emission Level	100,000 Mile Emission Level
HC	Pre-1970	9.570	0.180	0.180	10.470	11.370
	1970-1973	6.280	0.250	0.250	7.530	8.780
	1974-1978	6.280	0.170	0.170	7.130	7.980
	1979-1980	0.870	0.280	0.280	2.270	3.670
	1981-1983	0.820	0.150	0.150	1.570	2.320
	1984	0.700	0.150	0.150	1.450	2.200
	1985	0.408	0.077	0.284	0.793	2.213
	1986	0.392	0.071	0.282	0.747	2.157
	1987	0.377	0.070	0.271	0.727	2.082
	1988	0.361	0.070	0.265	0.711	2.036
	1989	0.358	0.073	0.277	0.723	2.108
	1990	0.355	0.075	0.280	0.730	2.130
	1991	0.354	0.075	0.281	0.729	2.134
	1992	0.354	0.076	0.283	0.734	2.149
	1993	0.354	0.076	0.283	0.734	2.149
	1994	0.354	0.074	0.279	0.724	2.119
	1995	0.354	0.073	0.275	0.719	2.094
	1996	0.324	0.072	0.273	0.684	2.049
	1997	0.294	0.072	0.273	0.654	2.019
	1998	0.268	0.072	0.273	0.628	1.993
	1999+	0.242	0.072	0.273	0.602	1.967
CO	Pre-1970	93.980	2.250	2.250	105.230	116.480
	1970-1973	60.080	2.550	2.550	72.830	85.580
	1974-1978	60.080	2.440	2.440	72.280	84.480
	1979-1980	12.280	2.430	2.430	24.430	36.580
	1981-1983	12.580	1.460	1.460	19.880	27.180
	1984	9.430	1.460	1.460	16.730	24.030
	1985	5.074	1.331	3.547	11.729	29.464
	1986	4.642	1.240	3.554	10.842	28.612
	1987	4.358	1.242	3.403	10.568	27.583
	1988	4.024	1.289	3.286	10.469	26.899
	1989	3.948	1.343	3.423	10.663	27.778
	1990	3.824	1.423	3.407	10.939	27.974
	1991	3.800	1.439	3.419	10.995	28.090
	1992	3.800	1.448	3.434	11.040	28.210
	1993	3.800	1.448	3.434	11.040	28.210
	1994	3.800	1.448	3.434	11.040	28.210
	1995	3.800	1.448	3.434	11.040	28.210
	1996	3.694	1.448	3.434	10.934	28.104
	1997	3.588	1.448	3.434	10.828	27.998
	1998	3.249	1.448	3.434	10.489	27.659
	1999+	2.911	1.448	3.434	10.151	27.321
NOx	Pre-1970	5.440	0.000	0.000	5.440	5.440
	1970-1973	6.450	0.000	0.000	6.450	6.450
	1974-1978	4.610	0.040	0.040	4.810	5.010
	1979-1980	1.770	0.060	0.060	2.070	2.370
	1981-1983	1.640	0.030	0.030	1.790	1.940
	1984	1.120	0.070	0.070	1.470	1.820
	1985	1.116	0.078	0.210	1.506	2.556
	1986	0.985	0.082	0.214	1.395	2.465
	1987	0.838	0.078	0.213	1.228	2.293
	1988	0.690	0.077	0.204	1.075	2.095
	1989	0.661	0.080	0.198	1.061	2.051
	1990	0.639	0.082	0.189	1.049	1.994
	1991	0.630	0.082	0.188	1.040	1.980
	1992	0.630	0.083	0.186	1.045	1.975
	1993	0.630	0.083	0.186	1.045	1.975
	1994	0.630	0.083	0.186	1.045	1.975
	1995	0.630	0.083	0.186	1.045	1.975
	1996	0.550	0.083	0.186	0.965	1.895
	1997	0.470	0.083	0.186	0.885	1.815
	1998	0.422	0.083	0.186	0.837	1.767
	1999+	0.374	0.083	0.186	0.789	1.719

* WHERE : BER = Nontampered basic exhaust emission rates in grams/mile,
ZML = Zero mile level in grams/mile,
DR1 = Deterioration rate for ≤ 50K miles, in grams/mile/10K miles,
DR2 = Deterioration rate for > 50K miles, in grams/mile/10K miles,
M = Cumulative mileage / 10,000 miles.

DATE : JUNE 30, 1995

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TABLE 3.1A.2
NONTAMPERED EXHAUST EMISSION RATES FOR
HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

* BER = ZML + (DR1 * M), for mileage up to 50K miles (M <= 5)
= ZML + DR1*5.0 + DR2*(M - 5.0), for mileage greater then 50K miles (M > 5)

Pol	Model Years	Zero Mile Emission Level	Det. Rate 1	Det. Rate 2	50,000 Mile Emission Level	100,000 Mile Emission Level
HC	Pre-1970	12.350	0.180	0.180	13.250	14.150
	1970-1973	8.560	0.250	0.250	9.810	11.060
	1974-1978	8.560	0.170	0.170	9.410	10.260
	1979-1980	1.660	0.280	0.280	3.060	4.460
	1981	1.660	0.280	0.150	3.060	3.810
	1982-1983	1.070	0.150	0.150	1.820	2.570
	1984	1.050	0.150	0.150	1.800	2.550
	1985	0.509	0.077	0.284	0.894	2.314
	1986	0.490	0.071	0.282	0.845	2.255
	1987	0.471	0.070	0.271	0.821	2.176
	1988	0.451	0.070	0.265	0.801	2.126
	1989	0.447	0.073	0.277	0.812	2.197
	1990	0.444	0.075	0.280	0.819	2.219
	1991	0.442	0.075	0.281	0.817	2.222
	1992-1993	0.442	0.076	0.283	0.822	2.237
	1994	0.354	0.074	0.279	0.724	2.119
	1995	0.354	0.073	0.275	0.719	2.094
	1996	0.324	0.072	0.273	0.684	2.049
	1997	0.294	0.072	0.273	0.654	2.019
	1998	0.268	0.072	0.273	0.628	1.993
	1999+	0.242	0.072	0.273	0.602	1.967
CO	Pre-1970	141.350	2.250	2.250	152.600	163.850
	1970-1973	107.720	2.550	2.550	120.470	133.220
	1974-1978	107.720	2.440	2.440	119.920	132.120
	1979-1980	44.249	2.430	2.430	56.399	68.549
	1981	44.250	2.430	1.460	56.400	63.700
	1982-1983	30.160	1.460	1.460	37.460	44.760
	1984	23.350	1.460	1.460	30.650	37.950
	1985	7.103	1.331	3.547	13.758	31.493
	1986	6.498	1.240	3.554	12.698	30.468
	1987	6.101	1.242	3.403	12.311	29.326
	1988	5.633	1.289	3.286	12.078	28.508
	1989	5.526	1.343	3.423	12.241	29.356
	1990	5.352	1.423	3.407	12.467	29.502
	1991	5.318	1.439	3.419	12.513	29.608
	1992-1993	5.318	1.448	3.434	12.558	29.728
	1994	3.800	1.448	3.434	11.040	28.210
	1995	3.800	1.448	3.434	11.040	28.210
	1996	3.694	1.448	3.434	10.934	28.104
	1997	3.588	1.448	3.434	10.828	27.998
	1998	3.249	1.448	3.434	10.489	27.659
	1999+	2.911	1.448	3.434	10.151	27.321
NOx	Pre-1970	3.100	0.000	0.000	3.100	3.100
	1970-1973	4.320	0.000	0.000	4.320	4.320
	1974-1978	3.070	0.040	0.040	3.270	3.470
	1979-1980	0.970	0.060	0.060	1.270	1.570
	1981	0.970	0.060	0.030	1.270	1.420
	1982-1983	1.460	0.030	0.030	1.610	1.760
	1984	1.220	0.070	0.070	1.570	1.920
	1985	1.116	0.078	0.210	1.506	2.556
	1986	0.985	0.082	0.214	1.395	2.465
	1987	0.838	0.078	0.213	1.228	2.293
	1988	0.690	0.077	0.204	1.075	2.095
	1989	0.661	0.080	0.198	1.061	2.051
	1990	0.639	0.082	0.189	1.049	1.994
	1991	0.630	0.082	0.188	1.040	1.980
	1992-1993	0.630	0.083	0.186	1.045	1.975
	1994	0.630	0.083	0.186	1.045	1.975
	1995	0.630	0.083	0.186	1.045	1.975
	1996	0.550	0.083	0.186	0.965	1.895
	1997	0.470	0.083	0.186	0.885	1.815
	1998	0.422	0.083	0.186	0.837	1.767
	1999+	0.374	0.083	0.186	0.789	1.719

* WHERE : BER = Nontampered basic exhaust emission rates in grams/mile,
ZML = Zero mile level in grams/mile,
DR1 = Deterioration rate for <= 50K miles, in grams/mile/10K miles,
DR2 = Deterioration rate for > 50K miles, in grams/mile/10K miles,
M = Cumulative mileage / 10,000 miles.

DATE : JUNE 30, 1995

TABLE 3.1B.1

DATE : JUNE 30, 1995

EXHAUST EMISSION RATES FOR
LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
AT VARIOUS MILEAGE LEVELS
(ADJUSTED FOR INDUSTRY AVERAGE FUEL. RATES INCLUDE TAMPERING)

Poll	Model Years	Emission Rate (Grams/Mile)						
		0K	25K	50K	75K	100K	125K	150K
HC	Pre-1970	9.570	10.020	10.470	10.920	11.370	11.820	12.270
	1970-1973	6.280	6.905	7.530	8.155	8.780	9.405	10.030
	1974-1978	6.280	6.705	7.130	7.555	7.980	8.405	8.830
	1979-1980	1.656	2.995	4.353	5.755	7.158	8.563	9.496
	1981	0.984	1.706	2.480	3.140	3.800	4.463	4.943
	1982	0.984	1.707	2.488	3.158	3.827	4.498	4.980
	1983	0.983	1.695	2.465	3.125	3.786	4.448	4.928
	1984	0.819	1.328	1.842	2.445	3.055	3.668	4.138
	1985	0.481	0.776	1.075	2.059	3.049	4.043	4.899
	1986	0.462	0.708	0.957	1.914	2.871	3.827	4.672
	1987	0.444	0.681	0.920	1.824	2.727	3.631	4.439
	1988	0.425	0.661	0.900	1.785	2.670	3.555	4.346
	1989	0.422	0.667	0.913	1.833	2.753	3.673	4.498
	1990	0.418	0.669	0.922	1.850	2.779	3.707	4.541
	1991	0.417	0.668	0.920	1.852	2.783	3.715	4.552
	1992-1993	0.417	0.671	0.926	1.863	2.801	3.738	4.581
	1994	0.417	0.665	0.915	1.840	2.766	3.692	4.523
	1995	0.417	0.662	0.909	1.823	2.737	3.651	4.471
	1996	0.382	0.624	0.868	1.777	2.685	3.593	4.407
	1997	0.348	0.590	0.834	1.742	2.650	3.559	4.372
	1998	0.317	0.560	0.803	1.712	2.620	3.529	4.342
	1999+	0.287	0.529	0.773	1.682	2.590	3.498	4.312
CO	Pre-1970	93.980	99.605	105.230	110.855	116.480	122.105	127.730
	1970-1973	60.080	66.455	72.830	79.205	85.580	91.955	98.330
	1974-1978	60.080	66.180	72.280	78.380	84.480	90.580	96.680
	1979-1980	17.885	30.006	42.591	53.373	64.157	74.998	82.556
	1981	13.852	20.265	27.468	33.923	40.377	46.841	51.310
	1982	13.852	20.295	27.654	34.321	40.986	47.658	52.168
	1983	13.843	20.160	27.351	33.886	40.418	46.958	51.442
	1984	10.320	14.981	19.722	25.306	30.962	36.627	40.934
	1985	5.581	9.852	14.198	25.359	36.588	47.825	57.784
	1986	5.110	8.959	12.869	23.886	34.904	45.922	55.851
	1987	4.786	8.532	12.326	22.618	32.910	43.202	52.658
	1988	4.423	8.279	12.179	22.122	32.066	42.009	51.142
	1989	4.340	8.343	12.390	22.706	33.021	43.337	52.842
	1990	4.205	8.425	12.690	22.962	33.234	43.507	52.968
	1991	4.179	8.443	12.751	23.056	33.360	43.665	53.159
	1992-1995	4.179	8.467	12.800	23.145	33.491	43.837	53.371
	1996	4.064	8.352	12.684	23.030	33.376	43.721	53.256
	1997	3.949	8.237	12.569	22.915	33.260	43.606	53.141
	1998	3.580	7.868	12.201	22.546	32.892	43.238	52.772
	1999+	3.213	7.501	11.833	22.179	32.525	42.870	52.405
NOx	Pre-1970	5.440	5.440	5.440	5.440	5.440	5.440	5.440
	1970-1972	6.450	6.450	6.450	6.450	6.450	6.450	6.450
	1973	6.450	6.466	6.549	6.550	6.551	6.551	6.551
	1974-1978	4.610	4.726	4.909	5.010	5.110	5.211	5.311
	1979-1980	1.770	2.062	2.969	3.125	3.280	3.435	3.587
	1981-1982	1.640	1.832	2.078	2.248	2.419	2.589	2.683
	1983	1.666	1.863	2.115	2.290	2.465	2.639	2.735
	1984	1.174	1.391	1.613	1.878	2.143	2.408	2.608
	1985	1.188	1.431	1.679	2.324	2.969	3.615	4.191
	1986	1.065	1.323	1.587	2.259	2.932	3.604	4.201
	1987	0.955	1.221	1.493	2.222	2.951	3.680	4.310
	1988	0.787	1.032	1.281	1.942	2.603	3.264	3.859
	1989	0.754	1.008	1.265	1.909	2.553	3.197	3.775
	1990	0.729	0.989	1.252	1.870	2.488	3.106	3.660
	1991	0.718	0.978	1.241	1.857	2.472	3.088	3.638
	1992-1995	0.718	0.981	1.247	1.857	2.467	3.076	3.621
	1996	0.628	0.890	1.156	1.766	2.376	2.985	3.530
	1997	0.537	0.800	1.065	1.675	2.285	2.895	3.439
	1998	0.482	0.745	1.011	1.621	2.230	2.840	3.385
	1999+	0.428	0.690	0.956	1.566	2.176	2.786	3.330

TABLE 3.1B.2

DATE : JUNE 30, 1995

EXHAUST EMISSION RATES FOR
HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
AT VARIOUS MILEAGE LEVELS
(ADJUSTED FOR INDUSTRY AVERAGE FUEL. RATES INCLUDE TAMPERING)

Pol	Model Years	0K	25K	50K	75K	100K	125K	150K
HC	Pre-1970	12.350	12.800	13.250	13.700	14.150	14.600	15.050
	1970-1973	8.560	9.185	9.810	10.435	11.060	11.685	12.310
	1974-1978	8.560	8.985	9.410	9.835	10.260	10.685	11.110
	1979-1980	2.570	3.909	5.267	6.670	8.072	9.477	10.410
	1981	1.956	3.054	4.205	4.865	5.525	6.187	6.667
	1982	1.273	1.996	2.778	3.447	4.116	4.787	5.269
	1983	1.272	1.985	2.754	3.414	4.075	4.738	5.218
	1984	1.224	1.734	2.247	2.850	3.460	4.073	4.543
	1985	0.598	0.893	1.192	2.175	3.166	4.160	5.016
	1986	0.576	0.822	1.071	2.027	2.984	3.941	4.785
	1987	0.552	0.789	1.029	1.932	2.836	3.740	4.548
	1988	0.529	0.766	1.004	1.889	2.774	3.659	4.450
	1989	0.525	0.770	1.016	1.936	2.856	3.776	4.601
	1990	0.521	0.772	1.025	1.953	2.882	3.810	4.644
	1991	0.519	0.770	1.022	1.954	2.885	3.817	4.653
	1992-1993	0.519	0.772	1.028	1.965	2.903	3.840	4.682
	1994	0.417	0.665	0.915	1.840	2.766	3.692	4.523
	1995	0.417	0.662	0.909	1.823	2.737	3.651	4.471
	1996	0.382	0.624	0.868	1.777	2.685	3.593	4.407
	1997	0.348	0.590	0.834	1.742	2.650	3.559	4.372
	1998	0.317	0.560	0.803	1.712	2.620	3.529	4.342
	1999+	0.287	0.529	0.773	1.682	2.590	3.498	4.312
CO	Pre-1970	141.350	146.975	152.600	158.225	163.850	169.475	175.100
	1970-1973	107.720	114.095	120.470	126.845	133.220	139.595	145.970
	1974-1978	107.720	113.820	119.920	126.020	132.120	138.220	144.320
	1979-1980	52.634	64.755	77.340	88.122	98.906	109.747	117.305
	1981	48.276	57.325	67.163	73.619	80.073	86.537	91.005
	1982	32.960	39.403	46.763	53.430	60.095	66.767	71.277
	1983	32.952	39.269	46.459	52.994	59.527	66.067	70.551
	1984	25.450	30.112	34.852	40.437	46.093	51.758	56.065
	1985	7.786	12.057	16.403	27.565	38.793	50.031	59.989
	1986	7.127	10.976	14.886	25.904	36.921	47.939	57.869
	1987	6.680	10.426	14.221	24.513	34.805	45.097	54.553
	1988	6.171	10.028	13.928	23.871	33.815	43.758	52.891
	1989	6.055	10.058	14.105	24.421	34.737	45.052	54.557
	1990	5.866	10.086	14.351	24.623	34.895	45.168	54.629
	1991	5.829	10.093	14.401	24.706	35.010	45.315	54.809
	1992-1993	5.829	10.117	14.450	24.795	35.141	45.487	55.021
	1994-1995	4.179	8.467	12.800	23.145	33.491	43.837	53.371
	1996	4.064	8.352	12.684	23.030	33.376	43.721	53.256
	1997	3.949	8.237	12.569	22.915	33.260	43.606	53.141
	1998	3.580	7.868	12.201	22.546	32.892	43.238	52.772
	1999+	3.213	7.501	11.833	22.179	32.525	42.870	52.405
NOx	Pre-1970	3.100	3.100	3.100	3.100	3.100	3.100	3.100
	1970-1972	4.320	4.320	4.320	4.320	4.320	4.320	4.320
	1973	4.320	4.336	4.419	4.420	4.421	4.421	4.421
	1974-1978	3.070	3.186	3.369	3.470	3.570	3.671	3.771
	1979-1980	0.970	1.262	2.169	2.325	2.480	2.635	2.787
	1981	0.970	1.237	1.558	1.728	1.899	2.069	2.163
	1982	1.460	1.652	1.898	2.068	2.239	2.409	2.503
	1983	1.483	1.680	1.932	2.107	2.282	2.456	2.552
	1984	1.279	1.496	1.718	1.983	2.248	2.513	2.713
	1985	1.188	1.431	1.679	2.324	2.969	3.615	4.191
	1986	1.065	1.323	1.587	2.259	2.932	3.604	4.201
	1987	0.955	1.221	1.493	2.222	2.951	3.680	4.310
	1988	0.787	1.032	1.281	1.942	2.603	3.264	3.859
	1989	0.754	1.008	1.265	1.909	2.553	3.197	3.775
	1990	0.729	0.989	1.252	1.870	2.488	3.106	3.660
	1991	0.718	0.978	1.241	1.857	2.472	3.088	3.638
	1992-1995	0.718	0.981	1.247	1.857	2.467	3.076	3.621
	1996	0.628	0.890	1.156	1.766	2.376	2.985	3.530
	1997	0.537	0.800	1.065	1.675	2.285	2.895	3.439
	1998	0.482	0.745	1.011	1.621	2.230	2.840	3.385
	1999+	0.428	0.690	0.956	1.566	2.176	2.786	3.330

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TABLE 3.2A.1

NONTAMPERED CRANKCASE EMISSIONS
FROM VEHICLES WITH OPERATING EVAPORATIVE SYSTEMS*
FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	Crankcase (Gm/Mile)
Pre-1968	5.70
1968+	0.00

* Vehicles with measurable purge capacity and no major vapor leaks
in their fuel systems.

DATE : JUNE 30, 1995

TABLE 3.2A.2

NONTAMPERED CRANKCASE EMISSIONS
FROM VEHICLES WITH OPERATING EVAPORATIVE SYSTEMS*
FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	Crankcase (Gm/Mile)
Pre-1968	7.35
1968+	0.00

* Vehicles with measurable purge capacity and no major vapor leaks
in their fuel systems.

DATE : JUNE 30, 1995

TABLE 3.2B.1

TAMPERING OFFSETS FOR TOTAL CRANKCASE EMISSIONS
FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
AT VARIOUS MILEAGE INTERVALS

Model Years	Tampering Offset (Grams/Mile)*						
	0K	25K	50K	75K	100K	125K	150K
Pre-1968	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1968-1977	0.000	0.023	0.047	0.070	0.093	0.117	0.121
1978-1979	0.000	0.023	0.046	0.070	0.093	0.116	0.121
1980	0.000	0.023	0.045	0.068	0.091	0.113	0.118
1981+	0.018	0.019	0.020	0.021	0.022	0.024	0.024

* Based on averages of 4.14 trips per day and 30.95 miles per day.

DATE : JUNE 30, 1995

TABLE 3.2B.2

TAMPERING OFFSETS FOR TOTAL CRANKCASE EMISSIONS
FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
AT VARIOUS MILEAGE INTERVALS

Model Years	Tampering Offset (Grams/Mile)*						
	0K	25K	50K	75K	100K	125K	150K
Pre-1968	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1968-1977	0.000	0.023	0.047	0.070	0.093	0.117	0.121
1978-1979	0.000	0.023	0.046	0.070	0.093	0.116	0.121
1980	0.000	0.023	0.045	0.068	0.091	0.113	0.118
1981+	0.018	0.019	0.020	0.021	0.022	0.024	0.024

* Based on averages of 4.14 trips per day and 30.95 miles per day.

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TABLE 3.2C
RUNNING LOSS EMISSIONS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	Fuel RVP (psi)	Emission Rate (Grams/Mile)									
		80.0F----		87.0F----		95.0F----		-----		105.0F----	
		7.1	19.6	47.9	7.1	19.6	47.9	7.1	19.6	47.9	7.1
		mph	mph	mph	mph	mph	mph	mph	mph	mph	mph
VEHICLES WITH OPERATING EVAPORATIVE SYSTEMS*											
Pre-1979	7.0	0.34	0.08	0.02	0.42	0.09	0.02	0.45	0.15	0.02	0.98
	9.0	0.92	0.11	0.02	0.73	0.10	0.02	0.63	0.10	0.02	2.36
	10.4	0.81	0.15	0.02	1.16	0.19	0.02	1.73	0.26	0.02	1.88
	11.7	1.07	0.11	0.02	2.27	0.52	0.03	3.45	0.60	0.04	6.62
1979-1980	7.0	0.34	0.08	0.02	0.42	0.09	0.02	0.45	0.15	0.02	0.98
	9.0	0.92	0.11	0.02	0.73	0.10	0.02	0.63	0.10	0.02	2.36
	10.4	0.81	0.15	0.02	1.16	0.19	0.02	1.73	0.26	0.02	1.88
	11.7	1.07	0.11	0.02	2.27	0.52	0.03	3.45	0.60	0.04	6.62
1981+	7.0	0.07	0.02	0.00	0.08	0.02	0.00	0.09	0.03	0.00	0.20
	9.0	0.18	0.02	0.00	0.15	0.02	0.00	0.13	0.02	0.00	0.47
	10.4	0.16	0.03	0.00	0.23	0.04	0.00	0.35	0.05	0.00	0.38
	11.7	0.22	0.02	0.00	0.45	0.10	0.01	0.69	0.12	0.01	1.32

VEHICLES FAILING EITHER PURGE OR PRESSURE TEST

Pre-1979	7.0	1.18	0.43	0.17	2.17	0.79	0.32	5.40	1.96	0.80	10.08
	9.0	4.77	1.73	0.71	7.87	2.85	1.17	12.79	4.63	1.90	25.81
	10.4	8.56	3.10	1.27	13.36	4.84	1.98	23.71	8.59	3.51	38.29
	11.7	13.62	4.93	2.02	22.65	8.20	3.36	34.05	12.34	5.05	50.07
1979-1980	7.0	1.18	0.43	0.17	2.17	0.79	0.32	5.40	1.96	0.80	10.08
	9.0	4.77	1.73	0.71	7.87	2.85	1.17	12.79	4.63	1.90	25.81
	10.4	8.56	3.10	1.27	13.36	4.84	1.98	23.71	8.59	3.51	38.29
	11.7	13.62	4.93	2.02	22.65	8.20	3.36	34.05	12.34	5.05	50.07
1981+	7.0	1.00	0.36	0.15	1.69	0.61	0.25	3.78	1.37	0.56	7.05
	9.0	4.05	1.47	0.60	6.14	2.22	0.91	8.96	3.24	1.33	18.07
	10.4	7.27	2.63	1.08	10.42	3.77	1.54	16.59	6.01	2.46	26.80
	11.7	11.58	4.19	1.72	17.67	6.40	2.62	23.84	8.63	3.53	35.05

* Vehicles with measurable purge capacity and no major vapor leaks in their fuel systems.

DATE : JUNE 30, 1995

TABLE 3.2D

REFUELING EMISSIONS* FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	Fuel Economy (miles/gal)	Uncontrolled (grams/mile)	With Onboard (grams/mile)
Pre-1973	10.65	0.362	0.362
1973-1974	10.46	0.368	0.368
1975	11.45	0.336	0.336
1976	12.06	0.319	0.319
1977	13.10	0.294	0.294
1978	12.78	0.301	0.301
1979	12.34	0.312	0.312
1980	15.30	0.252	0.252
1981	16.37	0.235	0.235
1982	16.63	0.232	0.232
1983	17.23	0.223	0.223
1984	16.98	0.227	0.227
1985	17.15	0.224	0.224
1986	17.84	0.216	0.216
1987	18.03	0.214	0.214
1988	17.54	0.219	0.219
1989	17.21	0.224	0.224
1990	17.20	0.224	0.224
1991	16.95	0.227	0.227
1992	16.86	0.228	0.228
1993	16.77	0.230	0.230
1994	16.68	0.231	0.231
1995-2003	16.58	0.232	0.232
2004	16.58	0.232	0.146
2005	16.58	0.232	0.060
2006+	16.58	0.232	0.017

* Refueling Emissions (g/mi) = [Displacement (g/gal)
+ Spillage (g/gal)] / Fuel Economy (mi/gal).

Fuel volatility of 9.0 RVP is assumed.

The algorithm for Onboard effects was taken from MOBILE5b
and reflects the phase-in included in the Final Rule.

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TABLE 3.4A

REGISTRATION MIX AND
MILEAGE ACCUMULATION RATES FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Year Index**	July 1 Registration Mix*	Mileage Accumulation Rate (per truck *)	Jan 1 Registration Mix	Jan 1 Mileage Accumulation Rate*** (fleet)	Jan 1 Mileage Accumulation (fleet)
1	0.054	14779.	0.019	14779.	1847.
2	0.072	14259.	0.074	14649.	11068.
3	0.072	13758.	0.074	14134.	25458.
4	0.072	13275.	0.075	13637.	39341.
5	0.072	12809.	0.075	13159.	52738.
6	0.052	12359.	0.054	12697.	65664.
7	0.050	11924.	0.052	12250.	78136.
8	0.034	11505.	0.035	11819.	90169.
9	0.054	11101.	0.056	11404.	101779.
10	0.031	10711.	0.032	11004.	112982.
11	0.028	10335.	0.029	10617.	123790.
12	0.080	9972.	0.083	10244.	134220.
13	0.084	9621.	0.087	9884.	144283.
14	0.049	9283.	0.051	9537.	153992.
15	0.039	8957.	0.040	9202.	163360.
16	0.030	8642.	0.031	8878.	172399.
17	0.018	8339.	0.018	8566.	181120.
18	0.023	8046.	0.023	8266.	189535.
19	0.018	7763.	0.017	7975.	197655.
20	0.015	7490.	0.015	7695.	205489.
21	0.009	7227.	0.009	7424.	213047.
22	0.008	6973.	0.008	7164.	220340.
23	0.009	6728.	0.009	6912.	227377.
24	0.006	6492.	0.006	6669.	234167.
25+	0.026	6264.	0.027	6435.	240718.

* Default information that may be altered by the MOBILE5a user with information about the local area.

** The indices refer to the most recent model year vehicles in any given calendar year. Index 1 references the newest model year vehicles and index 25+ references the oldest model year vehicles.

*** Sales weighted fleet mileage accumulation adjusted to January 1, where: $JANMAR(1) = MAR(1)$ and,
 $JANMAR(MYI) = .25 * MAR(MYI) + .75 * MAR(MYI-1)$, $MYI = 2, \dots, 25+$.

DATE : JUNE 30, 1995

TABLE 3.4C

TRIPS PER DAY AND MILES PER DAY FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Year Index*	Trips per Day	Miles per Day
1	4.66	40.49
2	4.60	40.13
3	4.54	38.72
4	4.48	37.36
5	4.43	36.05
6	4.37	34.78
7	4.31	33.56
8	4.25	32.38
9	4.19	31.24
10	4.13	30.15
11	4.08	29.09
12	4.02	28.07
13	3.96	27.08
14	3.90	26.13
15	3.84	25.21
16	3.78	24.32
17	3.72	23.47
18	3.67	22.65
19	3.61	21.85
20	3.55	21.08
21	3.49	20.34
22	3.43	19.63
23	3.37	18.94
24	3.31	18.27
25+	3.26	17.63

* The indices refer to the most recent model year vehicles in any given calendar year. Index 1 references the newest model year vehicles and index 25+ references the oldest model year vehicles.

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TABLE 3.5

EXAMPLE TRAVEL WEIGHTING FRACTION CALCULATION FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II
JANUARY 1, 1995

Model Years	(A) LDT2 Fleet Registration	(B) Sales Fraction	(C=A*B/DAF) LDGT2 Registration	(D) Annual Mileage Accrual Rate	(C*D/TFNORM) Travel (C*D) Fractions
1995	0.054	0.998	0.054	0.019	14779. 274.2 0.024
1994	0.072	0.998	0.072	0.074	14649. 1090.6 0.097
1993	0.072	0.998	0.072	0.074	14134. 1052.3 0.093
1992	0.072	0.998	0.072	0.075	13637. 1017.3 0.090
1991	0.072	0.998	0.072	0.075	13159. 981.6 0.087
1990	0.052	0.998	0.052	0.054	12697. 685.4 0.061
1989	0.050	0.998	0.050	0.052	12250. 635.9 0.056
1988	0.034	0.998	0.034	0.035	11819. 417.2 0.037
1987	0.054	0.997	0.054	0.056	11404. 639.3 0.057
1986	0.031	0.993	0.031	0.032	11004. 354.1 0.031
1985	0.028	0.989	0.028	0.029	10617. 308.6 0.027
1984	0.080	0.977	0.078	0.083	10244. 850.8 0.075
1983	0.084	0.953	0.080	0.087	9884. 862.0 0.076
1982	0.049	0.907	0.044	0.051	9537. 484.7 0.043
1981	0.039	0.944	0.037	0.040	9202. 370.7 0.033
1980	0.030	0.965	0.029	0.031	8878. 274.0 0.024
1979	0.018	0.982	0.018	0.018	8566. 156.7 0.014
1978	0.023	0.992	0.023	0.023	8266. 188.5 0.017
1977	0.018	1.000	0.018	0.017	7975. 135.4 0.012
1976	0.015	1.000	0.015	0.015	7695. 113.3 0.010
1975	0.009	1.000	0.009	0.009	7424. 67.1 0.006
1974	0.008	1.000	0.008	0.008	7164. 58.5 0.005
1973	0.009	1.000	0.009	0.009	6912. 64.2 0.006
1972	0.006	1.000	0.006	0.006	6669. 41.6 0.004
1971-	0.026	1.000	0.026	0.027	6435. 174.0 0.015

DAF: 0.989

TFNORM: 11298.5

WHERE :

- A = July 1 registration mix from Table 3.4A,
 B = Gasoline fleet sales fractions,
 D = Sales weighted fleet mileage accumulation rate from Table 3.4A.

NOTE : In general, the travel weighting fractions will change for every calendar year since the sales fraction (column B) changes for almost every model year.

For the first model year (A*B) must be divided by 3 in order to properly adjust registration from July 1 to January 1.

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TABLE 3.6A.1

SPEED CORRECTION FACTOR COEFFICIENTS FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

$$\text{SF}(s) = \text{SCF}(s, \text{sadj}) = \text{SF}(s)/\text{SF}(\text{sadj})$$

$$= \text{EXP}(A + B^*s + C^*s^{**2} + D^*s^{**3} + E^*s^{**4} + F^*s^{**5}), \text{ HC \& CO}$$

$$= A + B^*s + C^*s^{**2} + D^*s^{**3} + E^*s^{**4} + F^*s^{**5}, \text{ NOX}$$

Pollutant and Model Years	A	B	C	D	E	F
HC						
Pre-1970	0.231026E+01	-0.289572E+00	0.152990E-01	-0.446689E-03	0.648183E-05	-0.363456E-07
1970-1973	0.240873E+01	-0.308187E+00	0.168168E-01	-0.506843E-03	0.753855E-05	-0.431596E-07
1974-1978	0.268382E+01	-0.344633E+00	0.195417E-01	-0.625720E-03	0.978442E-05	-0.583369E-07
CO						
Pre-1970	0.233989E+01	-0.296978E+00	0.160071E-01	-0.477396E-03	0.706752E-05	-0.403978E-07
1970-1973	0.277804E+01	-0.319130E+00	0.153183E-01	-0.422327E-03	0.584948E-05	-0.314969E-07
1974-1978	0.283929E+01	-0.368756E+00	0.210782E-01	-0.676438E-03	0.106267E-04	-0.636405E-07
NOX						
Pre-1970	0.168635E+01	-0.118303E+00	0.654975E-02	-0.137139E-03	0.100849E-05	0.000000E+00
1970-1973	0.101743E+01	-0.118958E-01	0.914365E-03	-0.215740E-04	0.182300E-06	0.000000E+00
1974-1978	0.783838E+00	0.328549E-03	0.106029E-02	-0.319350E-04	0.290389E-06	0.000000E+00

* WHERE : s = average speed (mph),
sadj = basic test procedure speed; adjusted for fraction of cold start operation x
and fraction of hot start operation w, $[1/\text{sadj} = (w+x)/26 + (1-w-x)/16]$.

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TABLE 3.6A.2

SPEED CORRECTION FACTOR COEFFICIENTS FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

$$\text{SF}(s) = \text{SCF}(s, \text{sadj}) = \text{SF}(s)/\text{SF}(\text{sadj})$$

$$= \text{EXP}(A + B^*s + C^*s^{**2} + D^*s^{**3} + E^*s^{**4} + F^*s^{**5}), \text{ HC \& CO}$$

$$= A + B^*s + C^*s^{**2} + D^*s^{**3} + E^*s^{**4} + F^*s^{**5}, \text{ NOX}$$

Pollutant and Model Years	A	B	C	D	E	F
HC						
Pre-1970	0.224612E+01	-0.290973E+00	0.158890E-01	-0.472494E-03	0.694077E-05	-0.392798E-07
1970-1973	0.215361E+01	-0.283451E+00	0.156948E-01	-0.469759E-03	0.693832E-05	-0.394707E-07
1974-1978	0.211340E+01	-0.285676E+00	0.163180E-01	-0.500793E-03	0.755067E-05	-0.437187E-07
CO						
Pre-1970	0.181978E+01	-0.254663E+00	0.152347E-01	-0.487397E-03	0.758207E-05	-0.449514E-07
1970-1973	0.231868E+01	-0.341147E+00	0.209446E-01	-0.665891E-03	0.102225E-04	-0.598265E-07
1974-1978	0.215487E+01	-0.329116E+00	0.210112E-01	-0.689057E-03	0.108390E-04	-0.647125E-07
NOX						
Pre-1970	0.244424E+01	-0.250107E+00	0.138293E-01	-0.287025E-03	0.207585E-05	0.000000E+00
1970-1973	0.144825E+01	-0.122444E+00	0.795024E-02	-0.171078E-03	0.125777E-05	0.000000E+00
1974-1978	0.153447E+01	-0.125671E+00	0.785919E-02	-0.169428E-03	0.125494E-05	0.000000E+00

* WHERE : s = average speed (mph),
sadj = basic test procedure speed; adjusted for fraction of cold start operation x
and fraction of hot start operation w, $[1/\text{sadj} = (w+x)/26 + (1-w-x)/16]$.

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TABLE 3.6B

SPEED CORRECTION FACTOR COEFFICIENTS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II* $SCF(s, s_{adj}) = SF(s)/SF(s_{adj})$, for $s \leq 48.0$ mph $SF(s) = A/s + b$, for 1979+ HC/CO and 1980+ NOx $= EXP((A + B * s) + (C * s^2))$, for 1979 NOx

Speed Range (in MPH)	Model Years	Coefficient								
		----- A	----- HC B	----- A	----- CO B	----- A	----- NOx B	----- C		
2.5-19.6	1979	19.6000	0.0000	22.2641	-0.1359	0.3467	-0.0261	0.0004		
	1980	14.7994	0.2146	21.3338	-0.1188	1.4560	0.9260			
	1981	14.7994	0.2146	21.3338	-0.1188	1.4560	0.9260			
	1982	15.1994	0.2245	21.7353	-0.1089	1.4560	0.9260			
	1983	12.7233	0.3248	20.6103	-0.0776	1.4560	0.9260			
	1984	13.2408	0.3244	20.2174	-0.0315	1.4560	0.9260			
	1985	13.2709	0.3229	18.6383	0.0491	1.4560	0.9260			
	1986	13.9384	0.2889	18.0020	0.0815	1.4560	0.9260			
	1987	11.6913	0.4035	12.4300	0.3658	1.4560	0.9260			
	1988	11.2210	0.4176	9.0279	0.5295	1.4560	0.9260			
	1989	10.8250	0.4477	8.7889	0.5516	1.4560	0.9260			
	1990	10.5927	0.4585	8.7478	0.5526	1.4560	0.9260			
	1991+	10.7262	0.4528	8.6797	0.5572	1.4560	0.9260			
19.6-48.0	1979	19.6000	0.0000	19.6000	0.0000	0.3467	-0.0261	0.0004		
	1980	13.4800	0.3100	9.4700	0.5200	-7.5500	1.3900			
	1981	13.4800	0.3100	9.4700	0.5200	-7.5500	1.3900			
	1982	13.4900	0.3100	9.6100	0.5100	-7.4000	1.3800			
	1983	13.4500	0.3100	9.2200	0.5300	-7.3100	1.3700			
	1984	13.3900	0.3200	8.7700	0.5600	-7.1000	1.3600			
	1985	13.9500	0.2900	9.9900	0.4900	-6.3100	1.3200			
	1986	14.3200	0.2700	10.8000	0.4500	-5.1400	1.2600			
	1987	15.4400	0.2100	16.4300	0.1600	-2.4000	1.1200			
	1988	15.9400	0.1900	19.8400	-0.0100	-0.4500	1.0200			
	1989	16.6700	0.1500	19.8500	-0.0100	-0.3300	1.0200			
	1990	17.0700	0.1300	21.0700	-0.0700	-0.4600	1.0200			
	1991+	16.9500	0.1300	21.7100	-0.1100	-0.4800	1.0200			

* WHERE: s = average speed (mph)
 s_{adj} = basic test procedure speed at 19.6 mph

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TABLE 3.6C

HIGH-SPEED SPEED CORRECTION FACTOR COEFFICIENTS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

$$* \text{HSCF}(s) = \text{SCF48} * (1.0 + (\text{SCF65} - \text{SCF48}) * (s - S1) / (65.0 - S1))$$

SCF65 coefficients for various pollutants at high speeds.

Model year	HC (s > 55.0)	CO (s > 55.0)	NOx (s > 48.0)
pre-1982	1.320000	2.960000	1.980000
1982	1.320000	2.960000	1.980000
1983	1.320000	2.960000	1.980000
1984	1.310000	2.930000	1.970000
1985	1.260000	2.750000	1.940000
1986	1.110000	2.280000	1.850000
1987	0.970000	1.830000	1.780000
1988	0.810000	1.340000	1.720000
1989	0.800000	1.290000	1.670000
1990	0.770000	1.190000	1.640000
1991+	0.760000	1.150000	1.640000

- * WHERE: s = average speed (mph)
 SCF48 = the speed correction factor at 48.0 mph calculated using the coefficients listed in Table 3.6A for model years through 1978 or Table 3.6B for model year 1979 and later
 SCF65 = the coefficient listed in the table above
 S1 = 55.0 mph for HC and CO or 48.0 mph for NOx.

NOTE: The maximum speed allowed in Mobile5a is 65.0 mph.

NOTE: The speed correction factors for HC and CO do not change between 48.0 and 55.0 mph. HC and CO at speeds between 48.0 and 55.0 mph use the 48.0 mph speed correction factor calculated using the coefficients listed in Table 3.6A for model years through 1978 or in Table 3.6B for model year 1979 and later.

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TABLE 3.7A

LOW (< 75F) TEMPERATURE CORRECTION FACTOR COEFFICIENTS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

* $TCF(1) = TC(1) \cdot (T - 75.0)$, 1981+ CO,
 $TCF(b) = \exp [TC(b) \cdot (T - 75.0)]$, all others

Pol	Model Years	Test Segment 1	Test Segment 2	Test Segment 3
HC	Pre-1970	-0.20623E-01	-0.24032E-02	-0.10081E-02
	1970-1973	-0.24462E-01	-0.32017E-02	-0.86884E-03
	1974-1978	-0.21255E-01	-0.52755E-03	0.93659E-03
	1979-1980	-0.23517E-01	-0.88057E-02	-0.16222E-02
	1981-1983	-0.26820E-01	-0.75815E-02	-0.51660E-02
	1984	-0.32775E-01	-0.83176E-02	-0.90264E-02
	1985	-0.32082E-01	-0.85130E-02	-0.90264E-02
	1986	-0.34093E-01	-0.72340E-02	-0.58272E-02
	1987	-0.31654E-01	-0.83518E-02	-0.67952E-02
	1988	-0.29049E-01	-0.96698E-02	-0.79348E-02
	1989	-0.27328E-01	-0.91996E-02	-0.75463E-02
	1990	-0.26252E-01	-0.92459E-02	-0.75930E-02
	1991	-0.26443E-01	-0.95080E-02	-0.78148E-02
	1992+	-0.26443E-01	-0.95080E-02	-0.78148E-02
CO	Pre-1970	-0.13487E-01	0.15784E-02	0.11097E-02
	1970-1973	-0.21126E-01	-0.15289E-02	0.15749E-02
	1974-1978	-0.20843E-01	-0.59951E-02	0.18253E-02
	1979-1980	-0.24835E-01	-0.88336E-02	-0.11553E-02
	1981-1983	-0.12448E+01	-0.12478E-01	-0.74106E-02
	1984	-0.13095E+01	-0.14584E-01	-0.11371E-01
	1985	-0.12840E+01	-0.14584E-01	-0.11371E-01
	1986	-0.10908E+01	-0.13364E-01	-0.90777E-02
	1987	-0.10402E+01	-0.15096E-01	-0.90777E-02
	1988	-0.98953E+00	-0.17129E-01	-0.90777E-02
	1989	-0.91898E+00	-0.16501E-01	-0.90777E-02
	1990	-0.88427E+00	-0.16609E-01	-0.90777E-02
	1991	-0.89793E+00	-0.16987E-01	-0.90777E-02
	1992+	-0.89793E+00	-0.16987E-01	-0.90777E-02
NOx	Pre-1970	-0.16897E-03	-0.89245E-02	-0.72580E-02
	1970-1973	-0.25074E-03	-0.59791E-02	-0.62690E-02
	1974-1978	0.38855E-02	-0.24156E-02	-0.21188E-02
	1979-1980	-0.76044E-02	-0.68045E-02	-0.54198E-02
	1981-1983	-0.19000E-02	-0.61656E-02	-0.49643E-02
	1984	-0.45479E-02	-0.74823E-02	-0.90882E-02
	1985	-0.47657E-02	-0.69890E-02	-0.90882E-02
	1986	-0.43258E-02	-0.90635E-02	-0.94796E-02
	1987	-0.43258E-02	-0.82415E-02	-0.90924E-02
	1988	-0.43258E-02	-0.73524E-02	-0.87052E-02
	1989	-0.43258E-02	-0.68876E-02	-0.81657E-02
	1990	-0.43258E-02	-0.65658E-02	-0.79003E-02
	1991	-0.43258E-02	-0.65983E-02	-0.80047E-02
	1992+	-0.43258E-02	-0.65983E-02	-0.80047E-02

* WHERE :

$TCF(b)$ = Low temperature correction factor for appropriate pollutant,
ambient temperature (< 75F), and model year, for test segment b,
T = Ambient temperature (Fahrenheit),
 $TC(b)$ = Low temperature correction factor coefficient for appropriate
pollutant, reference temperature, and model year, for test segment b.

NOTE : The low temperature correction factor is used in conjunction with
the correction factor given in Table 3.7C.

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TABLE 3.7B

HIGH (> 75F) TEMPERATURE CORRECTION FACTOR COEFFICIENTS
AND FUEL RVP CORRECTION FACTORS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

$$\begin{aligned} * \text{TCF}(b) &= \text{EXP} [\text{TC}(b) * (T - 75.0)], \text{ Pre-1981} \\ \text{TRCF}(b) &= \text{EXP} [\text{RC}(b) * (\text{RVP} - 9.0) + \text{TC}(b) * (T - 75.0) \\ &\quad + \text{TRC}(b) * (\text{RVP} - 9.0) * (T - 75.0)], \text{ 1981+} \end{aligned}$$

PoI	Model Years	Parameter	Test Segment 1	Test Segment 2	Test Segment 3
HC	Pre-1970	TC	-0.14381E-01	0.13219E-02	0.34799E-02
	1970-1973		-0.12552E-01	0.42667E-02	0.75843E-02
	1974-1978		-0.10888E-01	-0.47925E-03	0.76666E-02
	1979-1980		-0.14095E-01	0.26179E-01	0.24297E-01
	1981-1985		0.91402E-01	0.42060E-01	0.93179E-01
	1986+	RC	0.44270E-02	0.48358E-02	0.74688E-02
		TRC	0.29466E-02	0.00000E+00	0.47276E-02
		RC	0.23202E-01	0.15373E+00	0.13263E+00
		TC	0.00000E+00	0.86550E-02	0.83730E-02
		TRC	0.00000E+00	0.00000E+00	0.56009E-02
CO	Pre-1970	TC	-0.14691E-01	0.37462E-02	0.11014E-01
	1970-1973		-0.38767E-01	0.84685E-02	0.25179E-01
	1974-1978		-0.21165E-01	0.23603E-01	0.28483E-01
	1979-1980		-0.19612E-01	0.48537E-01	0.31439E-01
	1981-1985		0.91345E-01	0.13968E+00	0.16322E+00
	1986+	RC	0.62182E-02	0.14943E-01	0.14923E-01
		TRC	0.00000E+00	0.00000E+00	0.00000E+00
		RC	0.40748E-01	0.26214E+00	0.23218E+00
		TC	0.35170E-02	0.14966E-01	0.20695E-01
		TRC	0.00000E+00	0.56416E-02	0.82344E-02
NOx	Pre-1970	TC	0.38841E-02	-0.87325E-02	-0.10839E-01
	1970-1973		-0.10389E-02	-0.92466E-02	-0.10108E-01
	1974-1978		-0.18301E-01	-0.10925E-01	-0.18042E-01
	1979-1980		-0.26153E-01	-0.18603E-01	-0.20878E-01
	1981-1985		0.00000E+00	-0.40024E-01	0.00000E+00
	1986+	RC	0.00000E+00	0.00000E+00	0.00000E+00
		TRC	0.00000E+00	0.00000E+00	0.00000E+00
		RC	0.14219E-01	0.27491E-01	0.00000E+00
		TC	0.00000E+00	0.37789E-02	0.00000E+00
		TRC	0.00000E+00	0.00000E+00	0.00000E+00

* WHERE :

TCF(b) = High temperature correction factor for appropriate pollutant,
ambient temperature, and model year, for test segment b,
T = Ambient temperature (Fahrenheit),
TC(b) = High temperature correction factor coefficient for appropriate
pollutant, temperature, and model year, for test segment b,
TRCF(b) = High temperature and fuel RVP correction factor
for appropriate pollutant, ambient temperature, fuel RVP,
and model year, for test segment b,
RC(b) = Fuel RVP correction factor coefficient for appropriate
pollutant, fuel RVP, and model year, for test segment b,
RVP = Fuel volatility in psi,
TRC(b) = Combined temperature and fuel RVP correction factor coefficient
for appropriate pollutant, fuel RVP, ambient temperature,
and model year, for test segment b.

NOTE : The temperature correction factor is used in conjunction with
the correction factor given in Table 3.7C.

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TABLE 3.7C

NORMALIZED BAG FRACTIONS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

Poll	Model Years	Normalized Fractions							
		Test Segment 1	Test Segment 1	Test Segment 2	Test Segment 2	Test Segment 3	Test Segment 3	Total	Test
		B1	D1	B2	D2	B3	D3	B0	D0
HC	Pre-1970	1.2820	0.0250	0.9730	0.0280	0.8390	0.0190	1.0000	0.0249
	1970-1973	1.3450	0.0740	0.9460	0.0540	0.8420	0.0480	1.0000	0.0565
	1974-1978	1.3980	0.0600	0.8850	0.0550	0.9190	0.0360	1.0000	0.0508
	1979-1980	2.0914	0.4073	0.6714	0.2752	0.8035	0.2972	1.0000	0.3082
	1981-1983	2.7957	0.1898	0.4428	0.2024	0.7084	0.1645	1.0000	0.1898
	1984	2.8662	0.2721	0.6530	0.2902	0.2540	0.2358	1.0000	0.2721
	1985	3.2436	0.2100	0.2334	0.1867	0.7701	0.1633	1.0000	0.1867
	1986	3.2304	0.2289	0.2289	0.2035	0.7885	0.1781	1.0000	0.2035
	1987	2.9623	0.2846	0.3834	0.2579	0.6961	0.2768	1.0000	0.2686
	1988	3.0028	0.2580	0.3765	0.2521	0.6786	0.2658	1.0000	0.2571
	1989	3.0026	0.2584	0.3775	0.2423	0.6768	0.2556	1.0000	0.2493
	1990	3.0346	0.2414	0.3723	0.2335	0.6626	0.2429	1.0000	0.2377
	1991	3.0392	0.2382	0.3717	0.2312	0.6603	0.2399	1.0000	0.2350
	1992+	3.0406	0.2373	0.3716	0.2297	0.6595	0.2382	1.0000	0.2336
CO	Pre-1970	1.2770	0.0330	1.0170	0.0290	0.7580	0.0250	1.0000	0.0287
	1970-1973	1.4420	0.0710	0.9960	0.0420	0.6740	0.0330	1.0000	0.0455
	1974-1978	1.5730	0.0540	0.9020	0.0790	0.7550	0.0290	1.0000	0.0602
	1979-1980	2.0939	0.3129	0.6895	0.1805	0.7671	0.1479	1.0000	0.1985
	1981-1983	2.6454	0.1633	0.4526	0.1020	0.8032	0.1076	1.0000	0.1163
	1984	2.5738	0.2181	0.3799	0.1362	0.9959	0.1436	1.0000	0.1553
	1985	3.4554	0.1471	0.2186	0.0914	0.6385	0.0971	1.0000	0.1043
	1986	3.2307	0.1795	0.3032	0.1115	0.6465	0.1185	1.0000	0.1272
	1987	2.0401	0.2575	0.5978	0.1862	0.9827	0.2203	1.0000	0.2102
	1988	2.0076	0.2418	0.6309	0.2013	0.9440	0.2183	1.0000	0.2143
	1989	2.0803	0.2616	0.6070	0.2181	0.9349	0.2386	1.0000	0.2327
	1990	2.1101	0.2665	0.6170	0.2452	0.8934	0.2545	1.0000	0.2521
	1991	2.1189	0.2678	0.6173	0.2505	0.8861	0.2579	1.0000	0.2561
	1992+	2.1287	0.2701	0.6152	0.2539	0.8826	0.2611	1.0000	0.2592
NOx	Pre-1970	1.1210	0.0090	0.7850	0.0010	1.3190	0.0090	1.0000	0.0001
	1970-1973	1.1990	0.0040	0.7930	0.0020	1.2450	0.0060	1.0000	0.0002
	1974-1978	1.2620	0.0220	0.7700	0.0040	1.2420	0.0270	1.0000	0.0140
	1979-1980	1.3666	0.0444	0.7444	0.0278	1.2111	0.0333	1.0000	0.0333
	1981-1983	1.3033	0.0061	0.8077	0.0184	1.1381	0.0245	1.0000	0.0184
	1984	1.0029	0.1343	0.9223	0.0358	1.1461	0.0537	1.0000	0.0627
	1985	1.1665	0.0724	0.8849	0.0161	1.0941	0.0322	1.0000	0.0322
	1986	1.2408	0.0833	0.8611	0.0185	1.0834	0.0370	1.0000	0.0370
	1987	1.7773	0.1936	0.6404	0.1822	1.0997	0.2003	1.0000	0.1895
	1988	1.7890	0.1592	0.6362	0.1645	1.0989	0.1731	1.0000	0.1658
	1989	1.8221	0.1661	0.6184	0.1715	1.1079	0.1807	1.0000	0.1729
	1990	1.8429	0.1464	0.6089	0.1650	1.1104	0.1673	1.0000	0.1618
	1991	1.8476	0.1437	0.6068	0.1642	1.1109	0.1655	1.0000	0.1603
	1992+	1.8506	0.1428	0.6051	0.1640	1.1118	0.1649	1.0000	0.1599

NOTE : The fractions given in this table are used in the calculation of the operating-mode/temperature correction factor (OMTCF).

WHERE : $OMTCF = [(TERM1 + TERM2 + TERM3)/DENOM]$,
 $TERM1 = W * TCF(1) * (B1 + D1 * M)$,
 $TERM2 = (1 - W - X) * TCF(2) * (B2 + D2 * M)$,
 $TERM3 = X * TCF(3) * (B3 + D3 * M)$,
 $DENOM = B0 + D0 * M$,
 W = Fraction of VMT in the cold start mode,
 X = Fraction of VMT in the hot start mode,
 $TCF(b)$ = Temperature correction factor for pollutant, model year, for test segment b from Table 3.7A,
 M = Cumulative mileage / 10,000 miles.

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TABLE 3.8A

AIR CONDITIONING CORRECTION FACTOR COEFFICIENTS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

$$* \text{ACCF} = U * V * (A + B * (T - 75) - 1) + 1$$

Model Years	HC		CO		NOx	
	A	B	A	B	A	B
Pre-1979	0.1023E+01	0.3344E-02	0.1202E+01	0.1808E-02	0.1299E+01	0.5643E-04
1979+	0.1000E+01	0.3512E-02	0.1130E+01	0.1528E-02	0.1221E+01	0.4262E-03

* WHERE :

ACCF = Air Conditioning Correction Factor,
V = Fraction of vehicles equipped with AC given in Table 1.3.8B,
U = Fraction of vehicles with AC that are using it = (DI-DILO)/(DIHI-DILO),
0 ≤ U ≤ 1,
DI = Discomfort index = (DB+WB)*.4+15,
DILO = The highest discomfort index where no AC is used,
DIHI = The lowest discomfort index where all vehicles with AC use it,
DB = Dry bulb temperature (Fahrenheit),
WB = Wet bulb temperature (Fahrenheit),
T = Ambient temperature (Fahrenheit).

TABLE 3.8B

ESTIMATED FRACTION OF
LIGHT DUTY GASOLINE POWERED TRUCKS II
EQUIPPED WITH AIR CONDITIONING

Model Years	Fraction Equipped With Air Conditioning
Pre-1977	0.32
1977	0.52
1978+	0.39

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TABLE 3.8C

EXTRA LOAD CORRECTION FACTOR COEFFICIENTS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

$$* \text{XLCF} = (\text{XLC}-1)*\text{U} + 1$$

Model Years	Coefficients (XLC)		
	HC	CO	NO _x
Pre-1970	1.0786	1.2765	0.9535
1970-1973	1.0495	1.1384	1.0313
1974-1978	1.0556	1.1347	1.0753
1979+	1.0455	1.3058	1.0719

* WHERE :

XLCF = Extra load correction factor,
 U = Fraction of VMT with an extra load,
 XLC = Correction factor coefficient.

TABLE 3.8D

TRAILER TOWING CORRECTION FACTOR COEFFICIENTS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

$$* \text{TTCF} = (\text{TTC}-1)*\text{U} + 1$$

Model Years	Coefficients (TTC)		
	HC	CO	NO _x
Pre-1970	1.2614	1.9327	1.1184
1970-1973	1.2762	1.8940	1.1384
1974-1978	1.7288	2.1414	1.2170
1979+	1.5909	3.9722	1.3875

* WHERE :

TTCF = Trailer towing correction factor,
 U = Fraction of VMT towing a trailer,
 TTC = Correction factor coefficient.

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TABLE 3.9ATAMPERING AND MISFUELING RATES FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	System	Zero Mile Level	Det. Rate 1	Det. Rate 2	50,000 Mile Level	100,000 Mile Level
NON-I/M AREA						
Pre-1981	Air Pump Disablement	0.0320	0.07670	0.01693	0.416	0.500
	Catalyst Removal	0.0785	0.04440	0.04356	0.301	0.518
	EGR System Disabled	-0.2435	0.11980	0.00085	0.356	0.360
	Filler Neck Damaged	0.1519	0.02970	0.04966	0.300	0.549
	Fuel Tank Misfueled	0.0000	0.00000	0.00000	0.000	0.000
	Total Misfueled	0.1519	0.02970	0.04966	0.300	0.549
	PCV System Disabled	0.0000	0.00730	0.00730	0.036	0.073
	Cannister Disconnect	-0.0195	0.04380	0.01678	0.199	0.283
	Both Cannister & Cap	-0.1849	0.08390	0.01515	0.235	0.310
1981-1983	Air Pump Disablement	-0.0389	0.02990	0.03280	0.111	0.275
	Catalyst Removal	-0.0018	0.02580	0.01488	0.127	0.202
	EGR System Disabled	-0.0204	0.02580	0.01444	0.109	0.181
	Filler Neck Damaged	0.0017	0.01880	0.01096	0.096	0.151
	Fuel Tank Misfueled	0.0097	0.00150	0.00387	0.017	0.037
	Total Misfueled	0.0113	0.02030	0.01486	0.113	0.187
	PCV System Disabled	0.0145	0.00030	0.00043	0.016	0.018
	Cannister Disconnect	0.0009	0.00570	0.02223	0.029	0.141
	Both Cannister & Cap	-0.0590	0.02700	0.01591	0.076	0.156
1984+	Air Pump Disablement	-0.0039	0.00880	0.01331	0.040	0.107
	Catalyst Removal	0.0024	0.00350	0.01400	0.020	0.090
	EGR System Disabled	-0.0019	0.00530	0.01100	0.025	0.080
	Filler Neck Damaged	0.0075	0.00060	0.00060	0.010	0.014
	Fuel Tank Misfueled	-0.0075	0.00510	0.00510	0.018	0.044
	Total Misfueled	0.0000	0.00570	0.00570	0.029	0.057
	PCV System Disabled	0.0011	0.00090	0.00090	0.006	0.010
	Cannister Disconnect	0.0100	0.00110	0.01143	0.015	0.073
	Both Cannister & Cap	0.0092	0.00470	0.01515	0.033	0.108
WITH I/M AREA						
Pre-1981	Air Pump Disablement	0.0615	0.03040	0.02931	0.214	0.360
	Catalyst Removal	0.1037	0.02030	0.02030	0.205	0.307
	EGR System Disabled	0.0808	0.01140	0.01140	0.138	0.195
	Filler Neck Damaged	0.1376	0.02100	0.02100	0.243	0.348
	Fuel Tank Misfueled	-0.0885	0.01780	0.01780	0.000	0.089
	Total Misfueled	0.0491	0.03880	0.03880	0.243	0.437
	PCV System Disabled	-0.0156	0.00400	0.01243	0.004	0.067
	Cannister Disconnect	0.0695	0.00930	0.00930	0.116	0.162
	Both Cannister & Cap	0.0471	0.01500	0.01500	0.122	0.197
1981-1983	Air Pump Disablement	-0.0318	0.01480	0.01480	0.042	0.116
	Catalyst Removal	-0.0062	0.01090	0.01090	0.048	0.103
	EGR System Disabled	0.0538	0.00000	0.00000	0.054	0.054
	Filler Neck Damaged	0.0201	0.00310	0.00310	0.036	0.051
	Fuel Tank Misfueled	-0.0580	0.01980	0.01479	0.041	0.115
	Total Misfueled	-0.0379	0.02290	0.01789	0.077	0.166
	PCV System Disabled	-0.0261	0.00790	0.00790	0.013	0.053
	Cannister Disconnect	-0.0126	0.01280	0.00015	0.051	0.052
	Both Cannister & Cap	-0.0314	0.01840	0.00063	0.061	0.064
1984+	Air Pump Disablement	-0.0262	0.01640	0.01640	0.056	0.138
	Catalyst Removal	0.0006	0.00430	0.02301	0.022	0.137
	EGR System Disabled	-0.0021	0.00270	0.00561	0.011	0.039
	Filler Neck Damaged	-0.0122	0.00810	0.00810	0.028	0.069
	Fuel Tank Misfueled	0.0197	0.00050	0.00050	0.022	0.025
	Total Misfueled	0.0075	0.00860	0.00860	0.051	0.094
	PCV System Disabled	0.0000	0.00000	0.00000	0.000	0.000
	Cannister Disconnect	0.0100	0.00110	0.01143	0.015	0.073
	Both Cannister & Cap	0.0092	0.00470	0.01515	0.033	0.108

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TABLE 3.9B

EXCESS EMISSIONS
DUE TO TAMPERING AND/OR MISFUELING FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

Type of Tampering	Emission Control System	Pollutant	Excess Emissions (g/mi)			
			FTP	Bag 1	Bag 2	Bag 3
Air Pump Disablement	Oxidation	HC	1.37	1.80	1.37	1.04
		CO	30.61	34.67	33.90	21.28
	3way/Oxidation 3way	HC	0.85	1.36	0.76	0.61
		CO	21.02	31.80	18.21	18.25
Catalyst Removal	Oxidation	HC	3.05	2.31	3.40	2.95
		CO	28.01	41.40	28.97	16.06
	3way/Oxidation 3way	HC	2.04	1.80	2.25	1.81
		CO	13.74	16.32	14.11	11.07
NOx		1.52	1.49	1.36	1.83	
Total Misfueled	Oxidation	HC	2.47	2.30	2.57	2.40
		CO	20.96	46.50	13.13	16.62
	3way/Oxidation 3way	HC	1.44	1.42	1.56	1.21
		CO	6.57	8.08	6.60	5.37
NOx		0.57	0.64	0.45	0.74	
EGR System Disabled		NOx				
		Pre-1979	1.21	1.40	0.96	1.54
		1979-1978	3.31	3.82	2.63	4.21
		1979-1987	3.48	4.11	2.68	4.53
		1988+	1.23	1.36	1.19	1.21
EGR System Disabled	and Catalyst Removal	NOx	3.39	3.02	3.46	3.55
EGR System Disabled	and Total Misfueled	NOx	1.99	2.12	1.85	2.16

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TABLE 3.9C

EXCESS CRANKCASE EMISSIONS FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	Excess Crankcase (Gm/Mile)
PCV System Disabled	
1964-1977	1.28
1978-1979	1.27
1980	1.24
1981+	1.23

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TABLE 3.9D

RUNNING LOSS EMISSION RATE FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

MODEL YEARS 1979-1980

Fuel RVP psi	Ambient Temp F	Trip Length (duration)					
		> 0 & ≤10min	> 10 & ≤20min	> 20 & ≤30min	> 30 & ≤40min	> 40 & ≤50min	>50min
SPEED 7.1 MPH							
7.0	80.0	0.45	0.41	0.34	0.29	0.29	0.32
	87.0	0.49	0.45	0.41	0.37	0.39	0.44
	95.0	0.55	0.50	0.48	0.45	0.43	0.42
	105.0	0.63	0.55	0.62	0.79	1.09	1.48
9.0	80.0	0.61	0.61	0.77	0.85	0.99	1.21
	87.0	0.60	0.54	0.62	0.67	0.78	0.93
	95.0	0.56	0.46	0.53	0.61	0.71	0.78
	105.0	1.10	0.88	1.76	2.31	2.98	3.51
10.4	80.0	0.62	0.56	0.66	0.74	0.88	1.05
	87.0	0.71	0.63	0.86	1.07	1.34	1.66
	95.0	0.80	0.71	1.14	1.57	2.08	2.67
	105.0	0.83	0.73	1.20	1.70	2.29	2.96
11.7	80.0	0.66	0.57	0.72	0.82	1.11	1.66
	87.0	0.77	0.74	1.23	1.96	2.78	3.80
	95.0	0.89	0.90	1.74	3.09	4.40	5.93
	105.0	1.23	1.07	2.73	5.32	8.55	12.24
SPEED 19.6 MPH							
7.0	80.0	0.12	0.14	0.11	0.07	0.06	0.05
	87.0	0.13	0.14	0.11	0.08	0.07	0.07
	95.0	0.14	0.18	0.16	0.15	0.14	0.13
	105.0	0.23	0.25	0.22	0.23	0.26	0.32
9.0	80.0	0.12	0.12	0.11	0.12	0.11	0.11
	87.0	0.10	0.10	0.09	0.09	0.09	0.11
	95.0	0.10	0.10	0.09	0.09	0.09	0.11
	105.0	0.25	0.18	0.15	0.28	0.35	0.51
10.4	80.0	0.15	0.15	0.13	0.14	0.14	0.16
	87.0	0.16	0.15	0.14	0.18	0.20	0.24
	95.0	0.18	0.16	0.16	0.24	0.28	0.39
	105.0	0.18	0.16	0.16	0.26	0.31	0.43
11.7	80.0	0.17	0.12	0.10	0.09	0.08	0.11
	87.0	0.16	0.16	0.19	0.41	0.57	0.95
	95.0	0.16	0.16	0.23	0.53	0.74	1.07
	105.0	0.23	0.16	0.21	0.58	0.91	1.72
SPEED 47.9 MPH							
7.0	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.02	0.02	0.02	0.02	0.02	0.02
	105.0	0.06	0.02	0.02	0.02	0.02	0.02
9.0	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.02	0.02	0.02	0.02	0.02	0.02
	105.0	0.09	0.02	0.02	0.02	0.02	0.02
10.4	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.08	0.02	0.02	0.02	0.02	0.02
	105.0	0.09	0.03	0.03	0.03	0.03	0.03
11.7	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.05	0.03	0.03	0.03	0.03	0.03
	95.0	0.09	0.05	0.04	0.03	0.03	0.03
	105.0	0.09	0.05	0.04	0.03	0.03	0.03

Continued on the next page.

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TABLE 3.9D (continued)

MODEL YEARS 1981-2020

Fuel RVP psi	Ambient Temp F	Trip Length (duration)					
		> 0 & ≤10min	> 10 & ≤20min	> 20 & ≤30min	> 30 & ≤40min	> 40 & ≤50min	>50min
SPEED 7.1 MPH							
7.0	80.0	0.45	0.41	0.34	0.29	0.29	0.32
	87.0	0.49	0.45	0.41	0.37	0.39	0.44
	95.0	0.55	0.50	0.48	0.45	0.43	0.42
	105.0	0.63	0.55	0.62	0.79	1.09	1.48
9.0	80.0	0.61	0.61	0.77	0.85	0.99	1.21
	87.0	0.60	0.54	0.62	0.67	0.78	0.93
	95.0	0.56	0.46	0.53	0.61	0.71	0.78
	105.0	1.10	0.88	1.76	2.31	2.98	3.51
10.4	80.0	0.62	0.56	0.66	0.74	0.88	1.05
	87.0	0.71	0.63	0.86	1.07	1.34	1.66
	95.0	0.80	0.71	1.14	1.57	2.08	2.67
	105.0	0.83	0.73	1.20	1.70	2.29	2.96
11.7	80.0	0.66	0.57	0.72	0.82	1.11	1.66
	87.0	0.77	0.74	1.23	1.96	2.78	3.80
	95.0	0.89	0.90	1.74	3.09	4.40	5.93
	105.0	1.23	1.07	2.73	5.32	8.55	12.24
SPEED 19.6 MPH							
7.0	80.0	0.12	0.14	0.11	0.07	0.06	0.05
	87.0	0.13	0.14	0.11	0.08	0.07	0.07
	95.0	0.14	0.18	0.16	0.15	0.14	0.13
	105.0	0.23	0.25	0.22	0.23	0.26	0.32
9.0	80.0	0.12	0.12	0.11	0.12	0.11	0.11
	87.0	0.10	0.10	0.09	0.09	0.09	0.11
	95.0	0.10	0.10	0.09	0.09	0.09	0.11
	105.0	0.25	0.18	0.15	0.28	0.35	0.51
10.4	80.0	0.15	0.15	0.13	0.14	0.14	0.16
	87.0	0.16	0.15	0.14	0.18	0.20	0.24
	95.0	0.18	0.16	0.16	0.24	0.28	0.39
	105.0	0.18	0.16	0.16	0.26	0.31	0.43
11.7	80.0	0.17	0.12	0.10	0.09	0.08	0.11
	87.0	0.16	0.16	0.19	0.41	0.57	0.95
	95.0	0.16	0.16	0.23	0.53	0.74	1.07
	105.0	0.23	0.16	0.21	0.58	0.91	1.72
SPEED 47.9 MPH							
7.0	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.02	0.02	0.02	0.02	0.02	0.02
	105.0	0.06	0.02	0.02	0.02	0.02	0.02
9.0	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.02	0.02	0.02	0.02	0.02	0.02
	105.0	0.09	0.02	0.02	0.02	0.02	0.02
10.4	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.02	0.02	0.02	0.02	0.02	0.02
	95.0	0.08	0.02	0.02	0.02	0.02	0.02
	105.0	0.09	0.03	0.03	0.03	0.03	0.03
11.7	80.0	0.02	0.02	0.02	0.02	0.02	0.02
	87.0	0.05	0.03	0.03	0.03	0.03	0.03
	95.0	0.09	0.05	0.04	0.03	0.03	0.03
	105.0	0.09	0.05	0.04	0.03	0.03	0.03

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TABLE 3.9E

RUNNING LOSS EMISSION RATE FOR
PRESSURE/PURGE TEST FAILED VEHICLES

Fuel RVP psi	Ambient Temp F	Trip Length (duration)					
		> 0 & ≤10min	> 10 & ≤20min	> 20 & ≤30min	> 30 & ≤40min	> 40 & ≤50min	>50min
7.0	80.0	1.08	4.91	5.20	5.20	5.20	5.20
	87.0	1.63	6.85	10.47	10.47	13.18	11.14
	95.0	2.34	9.35	17.20	27.99	36.95	47.17
	105.0	3.36	15.55	30.37	51.83	70.03	93.51
9.0	80.0	2.20	8.85	15.88	24.45	32.34	40.21
	87.0	2.88	11.24	22.32	41.86	55.05	74.61
	95.0	3.88	19.21	38.05	65.68	89.90	120.26
	105.0	6.48	34.29	72.58	134.85	188.43	251.53
10.4	80.0	3.03	11.76	23.74	45.69	60.06	82.22
	87.0	3.99	19.84	39.52	68.66	94.18	126.01
	95.0	6.05	31.82	66.96	123.65	172.52	230.39
	105.0	8.99	48.78	105.72	201.18	282.84	377.19
11.7	80.0	4.04	20.13	40.19	70.04	96.17	128.70
	87.0	5.84	30.58	64.14	118.01	164.53	219.78
	95.0	8.13	43.83	94.44	178.65	250.83	334.66
	105.0	11.38	62.53	137.11	263.89	372.01	495.78

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TABLE 3.9F

TECHNOLOGY GROUP FRACTIONS
FOR RESTING LOSS HC BY MODEL YEAR FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II

MODEL YEAR -----	OPEN BOTTOM CANISTER -----	CLOSED BOTTOM CANISTER -----
Pre-1981	0.309	0.691
1981	0.309	0.691
1982	0.349	0.651
1983	0.320	0.680
1984	0.291	0.709
1985	0.323	0.677
1986	0.255	0.745
1987	0.163	0.837
1988	0.136	0.864
1989	0.048	0.952
1990	0.057	0.943
1991	0.069	0.931
1992+	0.000	1.000

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TABLE 3.9G.1

HOT SOAK EMISSION RATES FOR
LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

AMBIENT TEMPERATURE 82F

MODEL YEAR	AT 9.0 RVP			AT 11.5 RVP		
	PASS	FAILED PURGE	FAILED PRESSURE	PASS	FAILED PURGE	FAILED PRESSURE
Pre -1979	18.08	18.08	18.08	27.97	27.97	27.97
1979-1980	2.20	5.83	5.89	4.17	17.69	17.90

HOT SOAK EMISSION RATES FOR 1981+ PASS
LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
AMBIENT TEMPERATURE 82F

FUEL DELIVERY SYSTEM	FOR RVP LESS THAN 9.0 EMISSION RATE = A+B*RVP		FOR RVP 9.0 OR GREATER EMISSION RATE = C+D*RVP+E*RVP**2		
	A	B	C	D	E
CARB	-0.164070	0.138230	-5.196600	0.697400	0.000000
TBI	0.078327	0.041297	-4.789710	0.582190	0.000000
PFI	0.078327	0.041297	-4.789710	0.582190	0.000000

DIURNAL EMISSION RATES FOR
LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

MINIMUM TEMPERATURE 60F, MAXIMUM 84F

MODEL YEAR	AT 9.0 RVP			AT 11.5 RVP		
	PASS	FAILED PURGE	FAILED PRESSURE	PASS	FAILED PURGE	FAILED PRESSURE
Pre -1979	50.52	50.52	50.52	86.08	86.08	86.08
1979-1980	15.20	16.11	23.61	26.08	29.22	33.80

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TABLE 3.9G.2

HOT SOAK EMISSION RATES FOR
HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

AMBIENT TEMPERATURE 82F

MODEL YEAR	AT 9.0 RVP			AT 11.5 RVP		
	PASS	FAILED PURGE	FAILED PRESSURE	PASS	FAILED PURGE	FAILED PRESSURE
Pre -1979	23.50	23.50	23.50	36.36	36.36	36.36
1979-1980	2.86	7.58	7.66	5.42	23.00	23.27

HOT SOAK EMISSION RATES FOR 1981+ PASS
HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
AMBIENT TEMPERATURE 82F

FUEL DELIVERY SYSTEM	FOR RVP LESS THAN 9.0 EMISSION RATE = A+B*RVP		FOR RVP 9.0 OR GREATER EMISSION RATE = C+D*RVP+E*RVP**2		
	A	B	C	D	E
CARB	-0.164070	0.138230	-5.196600	0.697400	0.000000
TBI	0.078327	0.041297	-4.789710	0.582190	0.000000
PFI	0.078327	0.041297	-4.789710	0.582190	0.000000

DIURNAL EMISSION RATES FOR
HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

MINIMUM TEMPERATURE 60F, MAXIMUM 84F

MODEL YEAR	AT 9.0 RVP			AT 11.5 RVP		
	PASS	FAILED PURGE	FAILED PRESSURE	PASS	FAILED PURGE	FAILED PRESSURE
Pre -1979	65.68	65.68	65.68	111.90	111.90	111.90
1979-1980	19.76	20.94	30.69	33.90	37.99	43.94

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TABLE 3.10A.1

METHANE OFFSETS*
FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	FTP	Methane Offsets (g/mi)		Bag 3
		Bag 1	Bag 2	
Pre-1979	0.279	0.366	0.282	0.207
1979-1980	0.140	0.206	0.132	0.107
1981-1982	0.125	0.194	0.113	0.095
1983+	0.119	0.161	0.113	0.099

* Methane offsets are used to estimate nonmethane hydrocarbon emissions (NMHC), i.e., NMHC = Total HC - Methane Offset.

VOC/TOG CORRECTION FACTOR FOR
LIGHT DUTY GASOLINE POWERED VEHICLES

VOC/TOG = (Total HC - Methane offset)*FID + Methane offset.

$$* FID = \text{SHRMKT}(1) * CF + \text{SHRMKT}(2) * (CF + 0.074 * \text{OXYCNT}(1) * 100) + \text{SHRMKT}(3) * (CF + 0.062 * \text{OXYCNT}(2) * 100)$$

Model Years	TOG	VOG
-----	-----	-----
Pre-1983	1.0478	1.0312
1983-1986	1.0465	1.0281
1987	1.0399	1.0126
1988-1989	1.0372	1.0064
1990+	1.0332	0.9971

The correction factor is the same for Gasoline, Ether blend and Alcohol blend fueled vehicles in MOBILE5a

* WHERE:

FID -FID correction factor (TOG or VOC)

SHRMKT(i)-Market share for i=1-Gasoline, i=2-Ether blend, i=3-Alcohol blend.

CF -Coefficients from the table above (TOG or VOC)

OXYCNT(j)-Oxygen content adjustment for j=1-Ether blend, j=2-Alcohol blend.

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TABLE 3.10A.2

METHANE OFFSETS*
FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	FTP	Methane Offsets (g/mi)		Bag 3
		Bag 1	Bag 2	
Pre-1974	0.378	0.497	0.382	0.279
1974-1978	0.378	0.497	0.382	0.279
1979-1980	0.289	0.427	0.272	0.219
1981-1983	0.179	0.292	0.155	0.139
1984	0.150	0.205	0.140	0.127
1985	0.113	0.153	0.105	0.097
1986+	0.119	0.161	0.113	0.099

* Methane offsets are used to estimate nonmethane hydrocarbon emissions (NMHC), i.e., NMHC = Total HC - Methane Offset.

VOC/TOG CORRECTION FACTOR FOR
LIGHT DUTY GASOLINE POWERED VEHICLES

VOC/TOG = (Total HC - Methane offset)*FID + Methane offset.

$$* FID = \text{SHRMKT}(1) * CF + \text{SHRMKT}(2) * (CF + 0.074 * \text{OXYCNT}(1) * 100) + \text{SHRMKT}(3) * (CF + 0.062 * \text{OXYCNT}(2) * 100)$$

Model Years	TOG	VOG
Pre-1983	1.0478	1.0312
1983-1986	1.0465	1.0281
1987	1.0399	1.0126
1988-1989	1.0372	1.0064
1990+	1.0332	0.9971

The correction factor is the same for Gasoline, Ether blend and Alcohol blend fueled vehicles in MOBILE5a

* WHERE:

FID -FID correction factor (TOG or VOC)

SHRMKT(i)-Market share for i=1-Gasoline,i=2-Ether blend,
i=3-Alcohol blend.

CF -Coefficients from the table above (TOG or VOC)

OXYCNT(j)-Oxygen content adjustment for j=1-Ether blend,
j=2-Alcohol blend.

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TABLE 3.10C

PERCENT TECHNOLOGY DISTRIBUTIONS
(EXHAUST AND EVAPORATIVE EMISSION SYSTEMS)
FOR LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	Air Pump Only	Oxidation Catalyst	3Way Catalyst	EGR System	Air Pump & Oxidation or 3Way Catalyst	EGR System & 3Way Catalyst
Pre-1973	0.0	0.0	0.0	0.0	0.0	0.0
1973-1978	0.0	0.0	0.0	30.0	0.0	0.0
1979-1981	0.0	100.0	0.0	100.0	50.0	0.0
1982	0.0	100.0	0.0	100.0	60.0	0.0
1983	0.0	90.0	10.0	100.0	60.0	10.0
1984	0.0	70.0	30.0	100.0	75.0	30.0
1985	0.0	60.0	40.0	100.0	75.0	40.0
1986	0.0	50.0	50.0	100.0	55.0	50.0
1987	0.0	15.0	85.0	100.0	55.0	85.0
1988+	0.0	15.0	85.0	100.0	50.0	85.0

Model Years	Evaporative Canister	PCV System
Pre-1968	0.0	0.0
1968-1970	0.0	100.0
1971-1978	5.0	100.0
1979+	100.0	100.0

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TABLE 3.10D

PERCENT TECHNOLOGY DISTRIBUTIONS
(FUEL DELIVERY SYSTEMS)
FOR LIGHT DUTY GASOLINE POWERED TRUCKS II

Model Years	Carbureted	Ported Fuel-Injected	Throttle-Body Fuel-Injected
1981	100.0	0.0	0.0
1982	100.0	0.0	0.0
1983	99.8	0.2	0.0
1984	97.8	2.2	0.0
1985	88.7	6.6	4.7
1986	62.6	23.8	13.6
1987	39.3	32.7	28.0
1988	13.2	41.6	45.2
1989	9.1	54.0	36.9
1990	3.2	60.1	36.7
1991	1.6	57.7	40.7
1992+	1.6	57.7	40.7

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TABLE 3.10E

EVAPORATIVE TEST PROCEDURE
PHASE-IN PERCENTAGE

MODEL YEAR	% MEETING NEW TP REQUIREMENT
-----	-----
1996	20.0
1997	40.0
1998	90.0
1999	100.0

EVAPORATIVE TEST PROCEDURE
EMISSION REDUCTION PERCENTAGE

EMISSION SOURCE	PROBLEM FREE	PURGE FAILURE	PRESSURE FAILURE
-----	-----	-----	-----
Hot soak	50.0	30.0	30.0
Diurnal			
Full	50.0	0.0	0.0
Multiple 2-3	75.0	0.0	0.0
Multiple 4	40.0	0.0	0.0
Partial	50.0	0.0	0.0
Running Loss	80.0	30.0	30.0
Resting Loss	75.0	75.0	75.0

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TABLE 3.11A.1 (continued)
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
TOTAL NONMETHANE HC

		January 1 of Calendar Year																																																																																													
		1997			1998			1999			2000			2003			2005			2008			2010			2012			2015			2018			2020																																																												
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**																																																														
1973	16.8	1974	14.7	1975	14.9	1976	14.9	1977	14.7	1978	14.7	1979	14.9	1980	14.9	1981	14.9	1982	14.9	1983	14.9	1984	14.9	1985	14.9	1986	14.9	1987	14.9	1988	14.9	1989	14.9	1990	14.9	1991	14.9	1992	14.9	1993	14.9	1994	14.9	1995	14.9	1996	14.9	1997	14.9	1998	14.9	1999	14.9	2000	14.9	2001	14.9	2002	14.9	2003	14.9	2004	14.9	2005	14.9	2006	14.9	2007	14.9	2008	14.9	2009	14.9	2010	14.9	2011	14.9	2012	14.9	2013	14.9	2014	14.9	2015	14.9	2016	14.9	2017	14.9	2018	14.9	2019	14.9	2020	14.9
1974	14.7	1975	14.5	1976	14.5	1977	14.5	1978	14.5	1979	14.5	1980	14.5	1981	14.5	1982	14.5	1983	14.5	1984	14.5	1985	14.5	1986	14.5	1987	14.5	1988	14.5	1989	14.5	1990	14.5	1991	14.5	1992	14.5	1993	14.5	1994	14.5	1995	14.5	1996	14.5	1997	14.5	1998	14.5	1999	14.5	2000	14.5	2001	14.5	2002	14.5	2003	14.5	2004	14.5	2005	14.5	2006	14.5	2007	14.5	2008	14.5	2009	14.5	2010	14.5	2011	14.5	2012	14.5	2013	14.5	2014	14.5	2015	14.5	2016	14.5	2017	14.5	2018	14.5	2019	14.5	2020	14.5		
1975	14.5	1976	14.3	1977	14.3	1978	14.3	1979	14.3	1980	14.3	1981	14.3	1982	14.3	1983	14.3	1984	14.3	1985	14.3	1986	14.3	1987	14.3	1988	14.3	1989	14.3	1990	14.3	1991	14.3	1992	14.3	1993	14.3	1994	14.3	1995	14.3	1996	14.3	1997	14.3	1998	14.3	1999	14.3	2000	14.3	2001	14.3	2002	14.3	2003	14.3	2004	14.3	2005	14.3	2006	14.3	2007	14.3	2008	14.3	2009	14.3	2010	14.3	2011	14.3	2012	14.3	2013	14.3	2014	14.3	2015	14.3	2016	14.3	2017	14.3	2018	14.3	2019	14.3	2020	14.3				
1976	14.3	1977	14.1	1978	14.1	1979	14.1	1980	14.1	1981	14.1	1982	14.1	1983	14.1	1984	14.1	1985	14.1	1986	14.1	1987	14.1	1988	14.1	1989	14.1	1990	14.1	1991	14.1	1992	14.1	1993	14.1	1994	14.1	1995	14.1	1996	14.1	1997	14.1	1998	14.1	1999	14.1	2000	14.1	2001	14.1	2002	14.1	2003	14.1	2004	14.1	2005	14.1	2006	14.1	2007	14.1	2008	14.1	2009	14.1	2010	14.1	2011	14.1	2012	14.1	2013	14.1	2014	14.1	2015	14.1	2016	14.1	2017	14.1	2018	14.1	2019	14.1	2020	14.1						
1977	14.1	1978	13.9	1979	13.9	1980	13.9	1981	13.9	1982	13.9	1983	13.9	1984	13.9	1985	13.9	1986	13.9	1987	13.9	1988	13.9	1989	13.9	1990	13.9	1991	13.9	1992	13.9	1993	13.9	1994	13.9	1995	13.9	1996	13.9	1997	13.9	1998	13.9	1999	13.9	2000	13.9	2001	13.9	2002	13.9	2003	13.9	2004	13.9	2005	13.9	2006	13.9	2007	13.9	2008	13.9	2009	13.9	2010	13.9	2011	13.9	2012	13.9	2013	13.9	2014	13.9	2015	13.9	2016	13.9	2017	13.9	2018	13.9	2019	13.9	2020	13.9								
1978	13.9	1979	9.0	1980	9.0	1981	9.0	1982	9.0	1983	9.0	1984	9.0	1985	9.0	1986	9.0	1987	9.0	1988	9.0	1989	9.0	1990	9.0	1991	9.0	1992	9.0	1993	9.0	1994	9.0	1995	9.0	1996	9.0	1997	9.0	1998	9.0	1999	9.0	2000	9.0	2001	9.0	2002	9.0	2003	9.0	2004	9.0	2005	9.0	2006	9.0	2007	9.0	2008	9.0	2009	9.0	2010	9.0	2011	9.0	2012	9.0	2013	9.0	2014	9.0	2015	9.0	2016	9.0	2017	9.0	2018	9.0	2019	9.0	2020	9.0										
1979	9.0	1980	8.7	1981	8.7	1982	8.7	1983	8.7	1984	8.7	1985	8.7	1986	8.7	1987	8.7	1988	8.7	1989	8.7	1990	8.7	1991	8.7	1992	8.7	1993	8.7	1994	8.7	1995	8.7	1996	8.7	1997	8.7	1998	8.7	1999	8.7	2000	8.7	2001	8.7	2002	8.7	2003	8.7	2004	8.7	2005	8.7	2006	8.7	2007	8.7	2008	8.7	2009	8.7	2010	8.7	2011	8.7	2012	8.7	2013	8.7	2014	8.7	2015	8.7	2016	8.7	2017	8.7	2018	8.7	2019	8.7	2020	8.7												
1980	8.7	1981	5.6	1982	5.6	1983	5.6	1984	5.6	1985	5.6	1986	5.6	1987	5.6	1988	5.6	1989	5.6	1990	5.6	1991	5.6	1992	5.6	1993	5.6	1994	5.6	1995	5.6	1996	5.6	1997	5.6	1998	5.6	1999	5.6	2000	5.6	2001	5.6	2002	5.6	2003	5.6	2004	5.6	2005	5.6	2006	5.6	2007	5.6	2008	5.6	2009	5.6	2010	5.6	2011	5.6	2012	5.6	2013	5.6	2014	5.6	2015	5.6	2016	5.6	2017	5.6	2018	5.6	2019	5.6	2020	5.6														
1981	5.6	1982	5.3	1983	5.3	1984	5.3	1985	5.3	1986	5.3	1987	5.3	1988	5.3	1989	5.3	1990	5.3	1991	5.3	1992	5.3	1993	5.3	1994	5.3	1995	5.3	1996	5.3	1997	5.3	1998	5.3	1999	5.3	2000	5.3	2001	5.3	2002	5.3	2003	5.3	2004	5.3	2005	5.3	2006	5.3	2007	5.3	2008	5.3	2009	5.3	2010	5.3	2011	5.3	2012	5.3	2013	5.3	2014	5.3	2015	5.3	2016	5.3	2017	5.3	2018	5.3	2019	5.3	2020	5.3																
1982	5.3	1983	5.2	1984	5.2	1985	5.2	1986	5.2	1987	5.2	1988	5.2	1989	5.2	1990	5.2	1991	5.2	1992	5.2	1993	5.2	1994	5.2	1995	5.2	1996	5.2	1997	5.2	1998	5.2	1999	5.2	2000	5.2	2001	5.2	2002	5.2	2003	5.2	2004	5.2	2005	5.2	2006	5.2	2007	5.2	2008	5.2	2009	5.2	2010	5.2	2011	5.2	2012	5.2	2013	5.2	2014	5.2	2015	5.2	2016	5.2	2017	5.2	2018	5.2	2019	5.2	2020	5.2																		
1983	5.2	1984	4.8	1985	4.8	1986	4.8	1987	4.8	1988	4.8	1989	4.8	1990	4.8	1991	4.8	1992	4.8	1993	4.8	1994	4.8	1995	4.8	1996	4.8	1997	4.8	1998	4.8	1999	4.8	2000	4.8	2001	4.8	2002	4.8	2003	4.8	2004	4.8	2005	4.8	2006	4.8	2007	4.8	2008	4.8	2009	4.8	2010	4.8	2011	4.8	2012	4.8	2013	4.8	2014	4.8	2015	4.8	2016	4.8	2017	4.8	2018	4.8	2019	4.8	2020	4.8																				
1984	4.8	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4	1997	5.4	1998	5.4	1999	5.4	2000	5.4	2001	5.4	2002	5.4	2003	5.4	2004	5.4	2005	5.4	2006	5.4	2007	5.4	2008	5.4	2009	5.4	2010	5.4	2011	5.4	2012	5.4	2013	5.4	2014	5.4	2015	5.4	2016	5.4	2017	5.4	2018	5.4	2019	5.4	2020	5.4																						
1985	5.4	1986	4.5	1987	4.5	1988	4.5	1989	4.5	1990	4.5	1991	4.5	1992	4.5	1993	4.5	1994	4.5	1995	4.5	1996	4.5	1997	4.5	1998	4.5	1999	4.5	2000	4.5	2001	4.5	2002	4.5	2003	4.5	2004	4.5	2005	4.5	2006	4.5	2007	4.5	2008	4.5	2009	4.5	2010	4.5	2011	4.5	2012	4.5	2013	4.5	2014	4.5	2015	4.5	2016	4.5	2017	4.5	2018	4.5	2019	4.5	2020	4.5																								
1986	4.5	1987	3.9	1988	3.9	1989	3.9	1990	3.9	1991	3.9	1992	3.9	1993	3.9	1994	3.9	1995	3.9	1996	3.9	1997	3.9	1998	3.9	1999	3.9	2000	3.9	2001	3.9	2002	3.9	2003	3.9	2004	3.9	2005	3.9	2006	3.9	2007	3.9	2008	3.9	2009	3.9	2010	3.9	2011	3.9	2012	3.9	2013	3.9	2014	3.9	2015	3.9	2016	3.9	2017	3.9	2018	3.9	2019	3.9	2020	3.9																										
1987	3.9	1988	3.4	1989	3.4	1990	3.4	1991	3.4	1992	3.4	1993	3.4	1994	3.4	1995	3.4	1996	3.4	1997	3.4	1998	3.4	1999	3.4	2000	3.4	2001	3.4	2002	3.4	2003	3.4	2004	3.4	2005	3.4	2006	3.4	2007	3.4	2008	3.4	2009	3.4	2010	3.4	2011	3.4	2012	3.4	2013	3.4	2014	3.4	2015	3.4	2016	3.4	2017	3.4	2018	3.4	2019	3.4	2020	3.4																												
1988	3.4	1989	3.1	1990	3.1	1991	3.1	1992	3.1	1993	3.1	1994	3.1	1995	3.1	1996	3.1	1997	3.1	1998	3.1	1999	3.1	2000	3.1	2001																																																																					

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DATE : JUNE 30, 1995

TABLE 3.11B.1
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
CO

1985	1986		1987		1988		1989		January 1 of Calendar Year		1992		1993		1994		1995		1996	
	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1961	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2
1962	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7
1963	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2	145.2
1964	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6	143.6
1965	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0
1966	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3	140.3
1967	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5	138.5
1968	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7
1969	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8	134.8
1970	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1
1971	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8	101.8
1972	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4
1973	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9
1974	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8
1975	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3	90.3
1976	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7	87.7
1977	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9
1978	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1	82.1
1979	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
1980	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7
1981	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
1982	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9
1983	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
1984	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
1985	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F
20.6% of VMT traveled in cold start,
52.1% of VMT in stabilized,
27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.3

Continued on the next page.

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TABLE 3.11B.1 (continued)
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
CO

	January 1 of Calendar Year																								
	1997		1998		1999		2000		2003		2005		2008		2010		2012		2015		2018		2020		
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1973	121.5	1974	118.8	1975	118.8	1976	118.8	1977	118.8	1979	77.0	1981	51.8	1984	48.4	1986	85.6	1988	79.5	1991	82.8	1994	83.2	1996	83.1
1974	117.2	1975	117.2	1976	117.2	1977	117.2	1978	117.2	1980	75.3	1982	50.8	1985	83.8	1987	79.6	1989	80.1	1992	80.7	1995	80.7	1997	80.5
1975	115.6	1976	115.6	1977	115.6	1978	115.6	1979	115.6	1981	49.7	1983	49.7	1986	80.4	1988	74.7	1990	77.6	1993	78.2	1996	78.1	1998	77.6
1976	113.8	1977	113.8	1978	113.8	1979	113.8	1980	113.8	1982	48.6	1984	45.2	1987	74.5	1989	75.0	1991	75.3	1994	75.6	1997	75.4	1999	74.6
1977	112.1	1978	112.1	1979	69.7	1980	69.7	1981	69.7	1983	47.4	1985	75.7	1988	69.6	1990	72.3	1992	72.9	1995	72.9	1998	72.3	2000	71.9
1978	110.2	1979	67.7	1980	67.7	1981	67.7	1982	67.7	1984	42.8	1986	71.9	1989	69.4	1991	69.7	1993	70.0	1996	69.9	1999	69.1	2001	69.1
1979	65.7	1980	65.7	1981	45.0	1982	45.0	1983	45.0	1985	69.7	1987	66.1	1990	66.6	1992	67.1	1994	67.1	1997	66.9	2000	66.1	2002	66.1
1980	63.5	1981	43.7	1982	43.7	1983	43.7	1984	43.7	1986	65.8	1988	61.2	1991	63.8	1993	64.1	1995	64.1	1998	63.5	2001	63.1	2003	63.1
1981	42.4	1982	42.4	1983	42.4	1984	39.0	1985	39.0	1987	60.0	1989	60.4	1992	60.9	1994	60.9	1996	60.8	1999	60.0	2002	60.0	2004	60.0
1982	41.0	1983	41.0	1984	37.6	1985	37.6	1986	37.6	1988	55.1	1990	57.2	1993	57.7	1995	57.7	1997	57.5	2000	56.7	2003	56.7	2005	56.7
1983	39.6	1984	36.1	1985	56.5	1986	56.5	1987	56.5	1989	53.8	1991	54.1	1994	54.3	1996	54.2	1998	53.7	2001	53.3	2004	53.3	2006	53.3
1984	34.7	1985	52.9	1986	52.0	1987	50.0	1988	50.0	1990	50.4	1992	50.8	1995	50.8	1997	50.6	1999	49.9	2002	49.9	2005	49.9	2007	49.9
1985	49.1	1986	48.3	1987	46.4	1988	46.4	1989	46.4	1991	47.0	1993	47.2	1996	47.1	1998	46.6	2000	46.2	2003	46.2	2006	46.2	2008	46.2
1986	44.4	1987	42.6	1988	41.5	1989	42.9	1990	42.9	1992	43.4	1994	43.4	1997	43.2	1999	42.5	2001	42.5	2004	42.5	2007	42.5	2009	42.5
1987	38.8	1988	37.7	1989	39.0	1990	39.0	1991	39.0	1993	39.5	1995	39.5	1998	38.9	2000	38.6	2002	38.6	2005	38.6	2008	38.6	2010	38.6
1988	33.9	1989	35.0	1990	35.2	1991	35.4	1992	35.4	1994	35.5	1996	35.4	1999	34.5	2001	34.5	2003	34.5	2006	34.5	2009	34.5	2011	34.5
1989	30.9	1990	31.1	1991	31.2	1992	31.3	1993	31.3	1995	31.3	1997	31.1	2000	30.4	2002	30.4	2004	30.4	2007	30.4	2010	30.4	2012	30.4
1990	26.8	1991	26.9	1992	27.0	1993	27.0	1994	27.0	1996	26.9	1998	26.4	2001	26.0	2003	26.0	2005	26.0	2008	26.0	2011	26.0	2013	26.0
1991	22.4	1992	22.5	1993	22.5	1994	22.5	1995	22.5	1997	22.3	1999	21.5	2002	21.5	2004	21.5	2006	21.5	2009	21.5	2012	21.5	2014	21.5
1992	17.8	1993	17.8	1994	17.8	1995	17.8	1996	17.8	1998	17.9	1999	16.9	2003	16.9	2005	16.9	2007	16.9	2010	16.9	2013	16.9	2015	16.9
1993	13.0	1994	13.0	1995	13.0	1996	12.9	1997	12.9	1999	12.1	2001	12.1	2004	12.1	2006	12.1	2008	12.1	2011	12.1	2014	12.1	2016	12.1
1994	10.3	1995	10.3	1996	10.2	1997	10.1	1998	10.1	2000	9.4	2002	9.4	2005	9.4	2007	9.4	2009	9.4	2012	9.4	2015	9.4	2017	9.4
1995	8.1	1996	8.0	1997	7.9	1998	7.5	1999	7.5	2001	7.2	2003	7.2	2006	7.2	2008	7.2	2010	7.2	2013	7.2	2016	7.2	2018	7.2
1996	5.8	1997	5.6	1998	5.3	1999	4.9	2000	4.9	2002	4.9	2004	4.9	2007	4.9	2009	4.9	2011	4.9	2014	4.9	2017	4.9	2019	4.9
1997	4.2	1998	3.8	1999	3.5	2000	3.5	2001	3.5	2003	3.5	2005	3.5	2008	3.5	2009	3.5	2010	3.5	2012	3.5	2015	3.5	2018	3.5

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F
20.6% of VMT traveled in cold start,
52.1% of VMT in stabilized,
27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.3

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DATE : JUNE 30, 1995

TABLE 3.11C.1
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
NOx

1985	1986				1987				1988				1989				January 1 of Calendar Year				1992				1993				1994				1995				1996																																		
	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**																																			
1961	5.4	1962	5.4	1963	5.4	1964	5.4	1965	5.4	1966	5.4	1967	5.4	1968	5.4	1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4
1962	5.4	1963	5.4	1964	5.4	1965	5.4	1966	5.4	1967	5.4	1968	5.4	1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4		
1963	5.4	1964	5.4	1965	5.4	1966	5.4	1967	5.4	1968	5.4	1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4				
1964	5.4	1965	5.4	1966	5.4	1967	5.4	1968	5.4	1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4						
1965	5.4	1966	5.4	1967	5.4	1968	5.4	1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4								
1966	5.4	1967	5.4	1968	5.4	1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4										
1967	5.4	1968	5.4	1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4												
1968	5.4	1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4														
1969	5.4	1970	5.4	1971	5.4	1972	5.4	1973	5.4	1974	5.4	1975	5.4	1976	5.4	1977	5.4	1978	5.4	1979	5.4	1980	5.4	1981	5.4	1982	5.4	1983	5.4	1984	5.4	1985	5.4	1986	5.4	1987	5.4	1988	5.4	1989	5.4	1990	5.4	1991	5.4	1992	5.4	1993	5.4	1994	5.4	1995	5.4	1996	5.4																
1970	6.4	1971	6.4	1972	6.4	1973	6.4	1974	6.4	1975	6.4	1976	6.4	1977	6.4	1978	6.4	1979	6.4	1980	6.4	1981	6.4	1982	6.4	1983	6.4	1984	6.4	1985	6.4	1986	6.4	1987	6.4	1988	6.4	1989	6.4	1990	6.4	1991	6.4	1992	6.4	1993	6.4	1994	6.4	1995	6.4	1996	6.4																		
1971	6.4	1972	6.4	1973	6.4	1974	6.4	1975	6.4	1976	6.4	1977	6.4	1978	6.4	1979	6.4	1980	6.4	1981	6.4	1982	6.4	1983	6.4	1984	6.4	1985	6.4	1986	6.4	1987	6.4	1988	6.4	1989	6.4	1990	6.4	1991	6.4	1992	6.4	1993	6.4	1994	6.4	1995	6.4	1996	6.4																				
1972	6.4	1973	6.4	1974	6.4	1975	6.4	1976	6.4	1977	6.4	1978	6.4	1979	6.4	1980	6.4	1981	6.4	1982	6.4	1983	6.4	1984	6.4	1985	6.4	1986	6.4	1987	6.4	1988	6.4	1989	6.4	1990	6.4	1991	6.4	1992	6.4	1993	6.4	1994	6.4	1995	6.4	1996	6.4																						
1973	6.4	1974	6.4	1975	6.4	1976	6.4	1977	6.4	1978	6.4	1979	6.4	1980	6.4	1981	6.4	1982	6.4	1983	6.4	1984	6.4	1985	6.4	1986	6.4	1987	6.4	1988	6.4	1989	6.4	1990	6.4	1991	6.4	1992	6.4	1993	6.4	1994	6.4	1995	6.4	1996	6.4																								
1974	5.1	1975	5.1	1976	5.1	1977	5.1	1978	5.1	1979	5.1	1980	5.1	1981	5.1	1982	5.1	1983	5.1	1984	5.1	1985	5.1	1986	5.1	1987	5.1	1988	5.1	1989	5.1	1990	5.1	1991	5.1	1992	5.1	1993	5.1	1994	5.1	1995	5.1	1996	5.1																										
1975	5.1	1976	5.1	1977	5.1	1978	5.1	1979	5.1	1980	5.1	1981	5.1	1982	5.1	1983	5.1	1984	5.1	1985	5.1	1986	5.1	1987	5.1	1988	5.1	1989	5.1	1990	5.1	1991	5.1	1992	5.1	1993	5.1	1994	5.1	1995	5.1	1996	5.1																												
1976	5.1	1977	5.1	1978	5.1	1979	5.1	1980	5.1	1981	5.1	1982	5.1	1983	5.1	1984	5.1	1985	5.1	1986	5.1	1987	5.1	1988	5.1	1989	5.1	1990	5.1	1991	5.1	1992	5.1	1993	5.1	1994	5.1	1995	5.1	1996	5.1																														
1977	5.0	1978	5.0	1979	5.0	1980	5.0	1981	5.0	1982	5.0	1983	5.0	1984	5.0	1985	5.0	1986	5.0	1987	5.0	1988	5.0	1989	5.0	1990	5.0	1991	5.0	1992	5.0	1993	5.0	1994	5.0	1995	5.0	1996	5.0																																
1978	5.0	1979	5.0	1980	5.0	1981	5.0	1982	5.0	1983	5.0	1984	5.0	1985	5.0	1986	5.0	1987	5.0	1988	5.0	1989	5.0	1990	5.0	1991	5.0	1992	5.0	1993	5.0	1994	5.0	1995	5.0	1996	5.0																																		
1979	2.3	1980	2.3	1981	2.3	1982	2.3	1983	2.3	1984	2.3	1985	2.3	1986	2.3	1987	2.3	1988	2.3	1989	2.3	1990	2.3	1991	2.3	1992	2.3	1993	2.3	1994	2.3	1995	2.3	1996	2.3																																				
1980	2.2	1981	2.2	1982	2.2	1983	2.2	1984	2.2	1985	2.2	1986	2.2	1987	2.2	1988	2.2	1989	2.2	1990	2.2	1991	2.2	1992	2.2	1993	2.2	1994	2.2	1995	2.2	1996	2.2																																						
1981	1.8	1982	1.8	1983	1.8	1984	1.8	1985	1.8	1986	1.8	1987	1.8	1988	1.8	1989	1.8	1990	1.8	1991	1.8	1992	1.8	1993	1.8	1994	1.8	1995	1.8	1996	1.8																																								
1982	1.8	1983	1.8	1984	1.8	1985	1.8	1986	1.8	1987	1.8	1988	1.8	1989	1.8	1990	1.8	1991	1.8	1992	1.8	1993	1.8	1994	1.8	1995	1.8	1996	1.8																																										
1983	1.7	1984	1.7	1985	1.7	1986	1.7	1987	1.7	1988	1.7	1989	1.7	1990	1.7	1991	1.7	1992	1.7	1993	1.7	1994	1.7	1995	1.7	1996	1.7																																												
1984	1.3	1985	1.3	1986	1.3	1987	1.3	1988	1.3	1989	1.3	1990	1.3	1991	1.3	1992	1.3	1993	1.3	1994	1.3	1995	1.3	1996	1.3																																														
1985	1.2	1986	1.2	1987	1.2	1988	1.2	1989	1.2	1990	1.2	1991	1.2	1992	1.2	1993	1.2	1994	1.2	1995	1.2	1996	1.2																																																

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F

20.6% of VMT traveled in cold start,

52.1% of VMT in stabilized,

27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 1.4A.3

Continued on the next page.

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TABLE 3.11C.1 (continued)
BY-MODEL-YEAR EMISSION LEVELS FOR LOW ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
NOX

		January 1 of Calendar Year																																																																																													
		1997			1998			1999			2000			2003			2005			2008			2010			2012			2015			2018			2020																																																												
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**																																																														
1973	6.4	1974	5.6	1975	5.6	1976	5.6	1977	5.5	1978	5.5	1979	5.5	1980	5.5	1981	2.3	1982	2.3	1983	2.3	1984	2.9	1985	5.9	1986	5.9	1987	5.3	1988	5.3	1989	5.3	1990	5.3	1991	5.6	1992	5.6	1993	5.3	1994	5.3	1995	5.1	1996	5.2	1997	5.1	1998	5.1	1999	5.1	2000	5.1	2001	5.1	2002	5.1	2003	5.1	2004	5.1	2005	5.1	2006	5.1	2007	5.1	2008	5.1	2009	5.1	2010	5.1	2011	5.1	2012	5.1	2013	5.1	2014	5.1	2015	5.1	2016	5.1	2017	5.1	2018	5.1	2019	5.1	2020	5.1
1974	5.5	1975	5.5	1976	5.5	1977	5.5	1978	5.5	1979	5.5	1980	5.5	1981	5.5	1982	2.3	1983	2.3	1984	2.3	1985	5.7	1986	5.9	1987	5.3	1988	5.3	1989	5.3	1990	5.3	1991	5.3	1992	5.3	1993	5.3	1994	5.3	1995	5.3	1996	5.3	1997	5.3	1998	5.3	1999	5.3	2000	5.3	2001	5.3	2002	5.3	2003	5.3	2004	5.3	2005	5.3	2006	5.3	2007	5.3	2008	5.3	2009	5.3	2010	5.3	2011	5.3	2012	5.3	2013	5.3	2014	5.3	2015	5.3	2016	5.3	2017	5.3	2018	5.3	2019	5.3	2020	5.3		
1975	5.5	1976	5.5	1977	5.5	1978	5.5	1979	5.5	1980	5.5	1981	5.5	1982	5.5	1983	2.3	1984	2.3	1985	2.3	1986	5.5	1987	5.3	1988	5.3	1989	5.3	1990	5.3	1991	5.3	1992	5.3	1993	5.3	1994	5.3	1995	5.3	1996	5.3	1997	5.3	1998	5.3	1999	5.3	2000	5.3	2001	5.3	2002	5.3	2003	5.3	2004	5.3	2005	5.3	2006	5.3	2007	5.3	2008	5.3	2009	5.3	2010	5.3	2011	5.3	2012	5.3	2013	5.3	2014	5.3	2015	5.3	2016	5.3	2017	5.3	2018	5.3	2019	5.3	2020	5.3				
1976	5.5	1977	5.5	1978	5.5	1979	5.5	1980	5.5	1981	5.5	1982	5.5	1983	5.5	1984	2.3	1985	2.3	1986	2.3	1987	5.5	1988	5.3	1989	5.3	1990	5.3	1991	5.3	1992	5.3	1993	5.3	1994	5.3	1995	5.3	1996	5.3	1997	5.3	1998	5.3	1999	5.3	2000	5.3	2001	5.3	2002	5.3	2003	5.3	2004	5.3	2005	5.3	2006	5.3	2007	5.3	2008	5.3	2009	5.3	2010	5.3	2011	5.3	2012	5.3	2013	5.3	2014	5.3	2015	5.3	2016	5.3	2017	5.3	2018	5.3	2019	5.3	2020	5.3						
1977	5.5	1978	5.5	1979	5.5	1980	5.5	1981	5.5	1982	5.5	1983	5.5	1984	5.5	1985	2.3	1986	2.3	1987	2.3	1988	5.0	1989	4.7	1990	4.7	1991	4.6	1992	4.6	1993	4.6	1994	4.6	1995	4.6	1996	4.6	1997	4.6	1998	4.6	1999	4.6	2000	4.6	2001	4.6	2002	4.6	2003	4.6	2004	4.6	2005	4.6	2006	4.6	2007	4.6	2008	4.6	2009	4.6	2010	4.6	2011	4.6	2012	4.6	2013	4.6	2014	4.6	2015	4.6	2016	4.6	2017	4.6	2018	4.6	2019	4.6	2020	4.6								
1978	5.4	1979	3.0	1980	3.0	1981	3.0	1982	3.0	1983	3.0	1984	3.0	1985	3.0	1986	2.2	1987	2.2	1988	2.2	1989	4.7	1990	4.5	1991	4.5	1992	4.5	1993	4.5	1994	4.5	1995	4.5	1996	4.5	1997	4.5	1998	4.5	1999	4.5	2000	4.5	2001	4.5	2002	4.5	2003	4.5	2004	4.5	2005	4.5	2006	4.5	2007	4.5	2008	4.5	2009	4.5	2010	4.5	2011	4.5	2012	4.5	2013	4.5	2014	4.5	2015	4.5	2016	4.5	2017	4.5	2018	4.5	2019	4.5	2020	4.5										
1979	2.9	1980	2.9	1981	2.9	1982	2.9	1983	2.9	1984	2.9	1985	2.9	1986	2.9	1987	2.2	1988	2.2	1989	2.2	1990	4.2	1991	4.1	1992	4.1	1993	4.1	1994	4.1	1995	4.1	1996	4.1	1997	4.1	1998	4.1	1999	4.1	2000	4.1	2001	4.1	2002	4.1	2003	4.1	2004	4.1	2005	4.1	2006	4.1	2007	4.1	2008	4.1	2009	4.1	2010	4.1	2011	4.1	2012	4.1	2013	4.1	2014	4.1	2015	4.1	2016	4.1	2017	4.1	2018	4.1	2019	4.1	2020	4.1												
1980	2.9	1981	2.2	1982	2.2	1983	2.2	1984	2.2	1985	2.2	1986	2.2	1987	2.2	1988	2.2	1989	2.2	1990	2.2	1991	4.2	1992	4.0	1993	3.8	1994	3.8	1995	3.8	1996	3.8	1997	3.8	1998	3.8	1999	3.8	2000	3.8	2001	3.8	2002	3.8	2003	3.8	2004	3.8	2005	3.8	2006	3.8	2007	3.8	2008	3.8	2009	3.8	2010	3.8	2011	3.8	2012	3.8	2013	3.8	2014	3.8	2015	3.8	2016	3.8	2017	3.8	2018	3.8	2019	3.8	2020	3.8														
1981	2.2	1982	2.2	1983	2.2	1984	2.2	1985	2.2	1986	2.2	1987	2.2	1988	2.2	1989	2.2	1990	2.2	1991	2.2	1992	3.8	1993	3.6	1994	3.6	1995	3.6	1996	3.6	1997	3.6	1998	3.6	1999	3.6	2000	3.6	2001	3.6	2002	3.6	2003	3.6	2004	3.6	2005	3.6	2006	3.6	2007	3.6	2008	3.6	2009	3.6	2010	3.6	2011	3.6	2012	3.6	2013	3.6	2014	3.6	2015	3.6	2016	3.6	2017	3.6	2018	3.6	2019	3.6	2020	3.6																
1982	2.1	1983	2.2	1984	2.2	1985	2.2	1986	2.2	1987	2.2	1988	2.2	1989	2.2	1990	2.2	1991	2.2	1992	2.2	1993	3.8	1994	3.8	1995	3.8	1996	3.8	1997	3.8	1998	3.8	1999	3.8	2000	3.8	2001	3.8	2002	3.8	2003	3.8	2004	3.8	2005	3.8	2006	3.8	2007	3.8	2008	3.8	2009	3.8	2010	3.8	2011	3.8	2012	3.8	2013	3.8	2014	3.8	2015	3.8	2016	3.8	2017	3.8	2018	3.8	2019	3.8	2020	3.8																		
1983	2.1	1984	2.3	1985	2.3	1986	2.3	1987	2.3	1988	2.3	1989	2.3	1990	2.3	1991	3.4	1992	3.4	1993	3.4	1994	3.4	1995	3.4	1996	3.4	1997	3.4	1998	3.4	1999	3.4	2000	3.4	2001	3.4	2002	3.4	2003	3.4	2004	3.4	2005	3.4	2006	3.4	2007	3.4	2008	3.4	2009	3.4	2010	3.4	2011	3.4	2012	3.4	2013	3.4	2014	3.4	2015	3.4	2016	3.4	2017	3.4	2018	3.4	2019	3.4	2020	3.4																				
1984	2.3	1985	3.9	1986	3.9	1987	3.9	1988	3.9	1989	3.9	1990	3.9	1991	3.9	1992	3.4	1993	3.4	1994	3.4	1995	3.4	1996	3.2	1997	3.2	1998	3.2	1999	3.2	2000	3.2	2001	3.2	2002	3.2	2003	3.2	2004	3.2	2005	3.2	2006	3.2	2007	3.2	2008	3.2	2009	3.2	2010	3.2	2011	3.2	2012	3.2	2013	3.2	2014	3.2	2015	3.2	2016	3.2	2017	3.2	2018	3.2	2019	3.2	2020	3.2																						
1985	3.7	1986	3.7	1987	3.7	1988	3.7	1989	3.7	1990	3.7	1991	3.7	1992	3.7	1993	3.2	1994	3.2	1995	3.2	1996	3.1	1997	2.9	1998	2.9	1999	2.9	2000	2.9	2001	2.9	2002	2.9	2003	2.9	2004	2.9	2005	2.9	2006	2.9	2007	2.9	2008	2.9	2009	2.9	2010	2.9	2011	2.9	2012	2.9	2013	2.9	2014	2.9	2015	2.9	2016	2.9	2017	2.9	2018	2.9	2019	2.9	2020	2.9																								
1986	3.5	1987	3.4	1988	3.4	1989	3.4	1990	3.4	1991	3.4	1992	3.4	1993	3.4	1994	3.0	1995	3.0	1996	3.0	1997	2.8	1998	2.7	1999	2.7	2000	2.7	2001	2.7	2002	2.7	2003	2.7	2004	2.7	2005	2.7	2006	2.7	2007	2.7	2008	2.7	2009	2.7	2010	2.7	2011	2.7	2012	2.7	2013	2.7	2014	2.7	2015	2.7	2016	2.7	2017	2.7	2018	2.7	2019	2.7	2020	2.7																										
1987	3.2	1988	2.9	1989	2.9	1990	2.9	1991	2.9	1992	2.9	1993	2.9	1994	2.9	1995	2.7	1996	2.7	1997	2.7	1998	2.5	1999	2.5	2000	2.5	2001	2.5	2002	2.5	2003	2.5	2004	2.5	2005	2.5	2006	2.5	2007	2.5	2008	2.5	2009	2.5	2010	2.5	2011	2.5	2012	2.5	2013	2.5	2014	2.5	2015	2.5	2016	2.5	2017	2.5	2018	2.5	2019	2.5	2020	2.5																												
1988	2.7	1989	2.6	1990	2.6	1991	2.6	1992	2.6	1993	2.6	1994	2.6	1995	2.6	1996	2.4	1997	2.4	1998	2.4	1999	2.2	2000	2.2	2001	2.2	2002	2.2	2003	2.2	2004	2.2	2005	2.2	2006	2.2	2007	2.2	2008	2.2	2009	2.2	2010	2.2	2011	2.2	2012	2.2	2013	2.2	2014																																											

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DATE : JUNE 30, 1995

TABLE 3.11A.2
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
TOTAL NONMETHANE HC

		January 1 of Calendar Year																							
		1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996	
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1961	29.3	1962	29.3	1963	29.3	1964	29.3	1965	29.3	1966	29.3	1967	29.3	1968	29.3	1969	22.0	1970	22.0	1971	19.9	1972	19.9	1973	19.9
1962	29.1	1963	29.1	1964	29.1	1965	29.1	1966	29.1	1967	29.1	1968	21.8	1969	21.8	1970	19.6	1971	19.6	1972	19.6	1973	19.6	1974	19.6
1963	28.9	1964	28.9	1965	28.9	1966	28.9	1967	28.9	1968	21.5	1969	21.5	1970	19.3	1971	19.4	1972	19.4	1973	19.4	1974	17.3	1975	17.3
1964	28.7	1965	28.7	1966	28.7	1967	28.7	1968	21.3	1969	21.3	1970	19.1	1971	19.1	1972	18.8	1973	18.8	1974	17.1	1975	17.1	1976	17.1
1965	28.5	1966	28.5	1967	28.5	1968	21.1	1969	21.1	1970	18.8	1971	18.8	1972	18.6	1973	18.6	1974	18.6	1975	16.9	1976	16.9	1977	16.9
1966	28.2	1967	28.2	1968	20.9	1969	20.9	1970	18.5	1971	18.5	1972	18.6	1973	18.6	1974	16.7	1975	16.7	1976	16.7	1977	16.7	1978	16.7
1967	28.0	1968	20.7	1969	20.7	1970	18.3	1971	18.3	1972	18.3	1973	18.3	1974	16.7	1975	16.5	1976	16.5	1977	16.5	1978	16.5	1979	9.7
1968	20.4	1969	20.4	1970	17.7	1971	17.7	1972	17.7	1973	16.3	1974	16.3	1975	16.3	1976	16.3	1977	16.3	1978	16.3	1979	9.3	1980	9.3
1969	20.2	1970	17.4	1971	17.4	1972	17.4	1973	17.4	1974	16.0	1975	16.0	1976	16.0	1977	16.0	1978	16.0	1979	8.9	1980	8.9	1981	6.9
1970	17.1	1972	17.1	1973	17.1	1974	15.8	1975	15.8	1976	15.8	1977	15.8	1978	15.8	1979	8.6	1980	8.6	1981	6.7	1982	6.7	1983	5.2
1972	16.8	1973	16.8	1974	15.6	1975	15.6	1976	15.6	1977	15.6	1978	7.8	1979	7.8	1980	8.2	1981	8.2	1982	6.4	1983	5.0	1984	5.0
1973	16.5	1974	15.3	1975	15.3	1976	15.3	1977	15.3	1978	15.3	1979	7.8	1980	7.8	1981	6.2	1982	6.2	1983	4.7	1984	4.7	1985	4.8
1974	15.1	1975	15.1	1976	15.1	1977	15.1	1978	15.1	1979	15.1	1979	7.8	1980	7.3	1981	5.9	1982	4.5	1983	4.5	1984	4.5	1985	4.8
1975	14.9	1976	14.9	1977	14.9	1978	14.9	1979	7.4	1980	7.4	1981	5.6	1982	4.2	1983	4.2	1984	4.2	1985	4.2	1986	4.4	1987	4.3
1976	14.6	1977	14.6	1978	14.6	1979	6.9	1980	6.9	1981	5.5	1982	3.9	1983	3.9	1984	4.0	1985	3.9	1986	3.9	1987	3.7	1988	3.7
1977	14.4	1978	14.4	1979	6.4	1980	6.4	1981	5.2	1982	3.7	1983	3.6	1984	3.6	1985	3.7	1986	3.7	1987	3.4	1988	3.2	1989	3.2
1978	14.1	1979	5.9	1980	5.9	1981	4.9	1982	3.5	1983	3.5	1984	3.4	1985	3.4	1986	3.0	1987	2.9	1988	2.8	1989	2.8	1990	2.8
1979	5.4	1980	5.4	1981	4.6	1982	3.2	1983	3.2	1984	3.2	1985	2.5	1986	2.5	1987	2.4	1988	2.4	1989	2.3	1990	2.4	1991	2.4
1980	4.9	1981	4.3	1982	2.8	1983	2.8	1984	2.8	1985	2.9	1986	1.9	1987	1.9	1988	1.8	1989	1.8	1990	1.9	1991	1.9	1992	1.9
1981	4.0	1982	2.5	1983	2.5	1984	2.5	1985	1.6	1986	1.5	1987	1.4	1988	1.3	1989	1.4	1990	1.4	1991	1.4	1992	1.4	1993	1.4
1982	2.3	1983	2.3	1984	2.3	1985	1.4	1986	1.3	1987	1.2	1988	1.2	1989	1.2	1990	1.2	1991	1.2	1992	1.2	1993	1.2	1994	1.2
1983	2.0	1984	2.0	1985	1.2	1986	1.2	1987	1.1	1988	1.1	1989	1.0	1990	1.0	1991	1.1	1992	1.0	1993	1.0	1994	0.9	1995	0.9
1984	1.8	1985	1.1	1986	1.0	1987	1.0	1988	0.9	1989	0.9	1990	0.9	1991	0.9	1992	0.9	1993	0.9	1994	0.9	1995	0.8	1996	0.8
1985	1.0	1986	1.0	1987	0.9	1988	0.9	1989	0.9	1990	0.9	1991	0.9	1992	0.9	1993	0.8	1994	0.8	1995	0.7	1996	0.7	1997	0.7

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F
20.6% of VMT traveled in cold start,
52.1% of VMT in stabilized,
27.3% of VMT in hot start,
60 TO 84F diurnal,
75F for hot soak and running loss emissions,

9.0 psi fuel RVP,
54.57% average in-use fuel tank level, including refueling emissions.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.3

Continued on the next page.

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TABLE 3.11A.2 (continued)
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
TOTAL NONMETHANE HC

		January 1 of Calendar Year																										
		2000			2003			2005			2008			2010			2012			2015			2018			2020		
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	
1973	19.9	1974	18.0	1975	18.0	1976	18.0	1979	12.0	1981	8.9	1984	7.5	1986	9.2	1988	8.7	1991	9.0	1994	8.9	1996	8.9	1997	8.6	1998	8.3	
1974	17.8	1975	17.8	1976	17.8	1977	17.8	1980	11.7	1982	7.2	1985	9.1	1987	8.7	1989	8.7	1992	8.8	1995	8.5	1997	8.5	1998	8.3	1999	8.3	
1975	17.6	1976	17.6	1977	17.6	1978	17.6	1981	8.5	1983	6.9	1986	8.6	1988	8.1	1990	8.4	1993	8.5	1996	8.1	1998	8.5	1998	7.9	1999	7.9	
1976	17.3	1977	17.3	1978	17.3	1979	17.3	1982	6.8	1984	6.9	1987	8.1	1989	8.1	1991	8.1	1994	8.0	1997	7.7	1999	7.7	1999	7.5	2000	7.5	
1977	17.1	1978	17.1	1979	17.1	1980	17.1	1983	6.6	1985	8.2	1988	7.6	1990	8.1	1992	7.9	1995	7.6	1998	7.3	2000	7.3	2000	7.2	2001	7.2	
1978	16.9	1979	16.4	1980	16.4	1981	16.4	1984	6.4	1986	7.7	1989	7.5	1991	7.5	1993	7.6	1996	7.2	1999	6.9	2001	6.9	2001	6.9	2002	6.9	
1979	10.7	1980	10.0	1981	10.0	1982	10.0	1985	7.5	1987	7.1	1990	7.2	1992	7.2	1994	7.0	1997	6.8	2000	6.6	2002	6.6	2002	6.6	2003	6.6	
1980	9.7	1981	7.4	1982	7.4	1983	7.4	1986	6.9	1988	6.6	1991	6.8	1993	6.9	1995	6.6	1998	6.3	2001	6.3	2003	6.3	2003	6.3	2004	6.3	
1981	7.1	1982	5.7	1983	5.7	1984	5.7	1987	6.4	1989	6.4	1992	6.5	1994	6.4	1996	6.2	1999	5.9	2002	5.9	2004	5.9	2004	5.9	2005	5.9	
1982	5.5	1983	5.5	1984	5.5	1985	5.5	1988	5.9	1990	6.1	1993	6.2	1995	5.9	1997	5.7	2000	5.6	2003	5.6	2005	5.6	2005	5.6	2006	5.6	
1983	5.2	1984	5.3	1985	5.3	1986	5.3	1989	5.7	1991	5.8	1994	5.6	1996	5.5	1998	5.3	2001	5.2	2004	5.2	2006	5.2	2006	5.2	2007	5.2	
1984	5.0	1985	5.6	1986	5.6	1987	5.6	1990	5.4	1992	5.4	1995	5.2	1997	5.0	1999	4.8	2002	4.8	2005	4.8	2007	4.8	2007	4.8	2008	4.8	
1985	5.2	1986	5.1	1987	5.0	1988	4.8	1991	5.0	1993	5.0	1996	4.7	1998	4.5	2000	4.5	2003	4.5	2006	4.5	2008	4.5	2008	4.5	2009	4.5	
1986	4.7	1987	4.6	1988	4.4	1989	4.6	1992	4.6	1994	4.5	1997	4.2	1999	4.1	2001	4.1	2004	4.1	2007	4.1	2009	4.1	2009	4.1	2010	4.1	
1987	4.1	1988	4.0	1989	4.2	1990	4.2	1993	4.2	1995	4.0	1998	3.7	2000	3.7	2002	3.7	2005	3.7	2008	3.7	2010	3.7	2010	3.7	2011	3.7	
1988	3.6	1989	3.7	1990	3.8	1991	3.8	1994	3.6	1996	3.5	1999	3.2	2001	3.2	2003	3.2	2006	3.2	2009	3.2	2011	3.2	2011	3.2	2012	3.2	
1989	3.3	1990	3.3	1991	3.3	1992	3.3	1995	3.2	1997	3.0	2000	2.8	2002	2.8	2004	2.8	2007	2.8	2010	2.8	2012	2.8	2012	2.8	2013	2.8	
1990	2.8	1991	2.8	1992	2.9	1993	2.9	1996	2.6	1998	2.4	2001	2.4	2003	2.4	2005	2.4	2008	2.4	2011	2.4	2013	2.4	2013	2.4	2014	2.4	
1991	2.4	1992	2.4	1993	2.4	1994	2.3	1997	2.1	1999	1.9	2002	1.9	2004	1.9	2006	1.9	2009	1.9	2012	1.9	2014	1.9	2014	1.9	2015	1.9	
1992	1.9	1993	1.8	1994	1.8	1995	1.8	1998	1.5	2000	1.4	2003	1.4	2005	1.4	2007	1.4	2010	1.4	2013	1.4	2015	1.4	2015	1.4	2016	1.4	
1993	1.4	1994	1.3	1995	1.2	1996	1.2	1999	0.9	2001	0.9	2004	0.8	2006	0.9	2008	0.9	2011	0.9	2014	0.9	2016	0.9	2016	0.9	2017	0.9	
1994	1.1	1995	1.1	1996	1.0	1997	1.0	2000	0.8	2002	0.8	2005	0.8	2007	0.8	2009	0.8	2012	0.8	2015	0.8	2017	0.8	2017	0.8	2018	0.8	
1995	0.9	1996	0.8	1997	0.8	1998	0.7	2001	0.6	2003	0.6	2006	0.6	2008	0.6	2010	0.6	2013	0.6	2016	0.6	2018	0.6	2018	0.6	2019	0.6	
1996	0.8	1997	0.7	1998	0.6	1999	0.5	2002	0.5	2004	0.5	2007	0.5	2009	0.5	2011	0.5	2014	0.5	2017	0.5	2019	0.5	2019	0.5	2020	0.5	
1997	0.6	1998	0.5	1999	0.5	2000	0.5	2003	0.5	2005	0.5	2008	0.5	2010	0.5	2012	0.5	2015	0.5	2018	0.5	2020	0.5	2020	0.5	2021	0.5	

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F,

20.6% of VMT traveled in cold start,

52.1% of VMT in stabilized,

27.3% of VMT in hot start,

60 TO 84F diurnal,

75F for hot soak and running loss emissions,

9.0 psi fuel RVP,

54.57% average in-use fuel tank level, including refueling emissions.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.3

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DATE : JUNE 30, 1995

TABLE 3.11B.2
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
CO

		January 1 of Calendar Year																																					
		1985			1986			1987			1988			1989			1990			1991			1992			1993			1994			1995			1996				
MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**						
1961	195.6	1962	195.6	1963	195.6	1964	195.6	1965	195.6	1966	195.6	1967	195.6	1968	195.6	1969	195.6	1970	195.6	1971	195.6	1972	195.6	1973	195.6	1974	195.6	1975	195.6	1976	195.6	1977	195.6	1978	195.6	1979	195.6	1980	195.6
1962	194.1	1963	194.1	1964	194.1	1965	194.1	1966	194.1	1967	194.1	1968	194.1	1969	194.1	1970	194.1	1971	194.1	1972	194.1	1973	194.1	1974	194.1	1975	194.1	1976	194.1	1977	194.1	1978	194.1	1979	194.1	1980	194.1	1981	194.1
1963	192.6	1964	192.6	1965	192.6	1966	192.6	1967	192.6	1968	192.6	1969	192.6	1970	192.6	1971	192.6	1972	192.6	1973	192.6	1974	192.6	1975	192.6	1976	192.6	1977	192.6	1978	192.6	1979	192.6	1980	192.6	1981	192.6	1982	192.6
1964	191.0	1965	191.0	1966	191.0	1967	191.0	1968	191.0	1969	191.0	1970	191.0	1971	191.0	1972	191.0	1973	191.0	1974	191.0	1975	191.0	1976	191.0	1977	191.0	1978	191.0	1979	191.0	1980	191.0	1981	191.0	1982	191.0	1983	191.0
1965	189.3	1966	189.3	1967	189.3	1968	189.3	1969	189.3	1970	189.3	1971	189.3	1972	189.3	1973	189.3	1974	189.3	1975	189.3	1976	189.3	1977	189.3	1978	189.3	1979	189.3	1980	189.3	1981	189.3	1982	189.3	1983	189.3	1984	189.3
1966	187.6	1967	187.6	1968	187.6	1969	187.6	1970	187.6	1971	187.6	1972	187.6	1973	187.6	1974	187.6	1975	187.6	1976	187.6	1977	187.6	1978	187.6	1979	187.6	1980	187.6	1981	187.6	1982	187.6	1983	187.6	1984	187.6	1985	187.6
1967	185.9	1968	185.9	1969	185.9	1970	185.9	1971	185.9	1972	185.9	1973	185.9	1974	185.9	1975	185.9	1976	185.9	1977	185.9	1978	185.9	1979	185.9	1980	185.9	1981	185.9	1982	185.9	1983	185.9	1984	185.9	1985	185.9	1986	185.9
1968	184.1	1969	184.1	1970	184.1	1971	184.1	1972	184.1	1973	184.1	1974	184.1	1975	184.1	1976	184.1	1977	184.1	1978	184.1	1979	184.1	1980	184.1	1981	184.1	1982	184.1	1983	184.1	1984	184.1	1985	184.1	1986	184.1	1987	184.1
1969	182.2	1970	182.2	1971	182.2	1972	182.2	1973	182.2	1974	182.2	1975	182.2	1976	182.2	1977	182.2	1978	182.2	1979	182.2	1980	182.2	1981	182.2	1982	182.2	1983	182.2	1984	182.2	1985	182.2	1986	182.2	1987	182.2	1988	182.2
1970	151.7	1971	151.7	1972	151.7	1973	151.7	1974	151.7	1975	151.7	1976	151.7	1977	151.7	1978	151.7	1979	151.7	1980	151.7	1981	151.7	1982	151.7	1983	151.7	1984	151.7	1985	151.7	1986	151.7	1987	151.7	1988	151.7	1989	151.7
1971	149.4	1972	149.4	1973	149.4	1974	149.4	1975	149.4	1976	149.4	1977	149.4	1978	149.4	1979	149.4	1980	149.4	1981	149.4	1982	149.4	1983	149.4	1984	149.4	1985	149.4	1986	149.4	1987	149.4	1988	149.4	1989	149.4	1990	149.4
1972	147.0	1973	147.0	1974	147.0	1975	147.0	1976	147.0	1977	147.0	1978	147.0	1979	147.0	1980	147.0	1981	147.0	1982	147.0	1983	147.0	1984	147.0	1985	147.0	1986	147.0	1987	147.0	1988	147.0	1989	147.0	1990	147.0	1991	147.0
1973	144.5	1974	144.5	1975	144.5	1976	144.5	1977	144.5	1978	144.5	1979	144.5	1980	144.5	1981	144.5	1982	144.5	1983	144.5	1984	144.5	1985	144.5	1986	144.5	1987	144.5	1988	144.5	1989	144.5	1990	144.5	1991	144.5	1992	144.5
1974	140.5	1975	140.5	1976	140.5	1977	140.5	1978	140.5	1979	140.5	1980	140.5	1981	140.5	1982	140.5	1983	140.5	1984	140.5	1985	140.5	1986	140.5	1987	140.5	1988	140.5	1989	140.5	1990	140.5	1991	140.5	1992	140.5	1993	140.5
1975	137.9	1976	137.9	1977	137.9	1978	137.9	1979	137.9	1980	137.9	1981	137.9	1982	137.9	1983	137.9	1984	137.9	1985	137.9	1986	137.9	1987	137.9	1988	137.9	1989	137.9	1990	137.9	1991	137.9	1992	137.9	1993	137.9	1994	137.9
1976	135.3	1977	135.3	1978	135.3	1979	135.3	1980	135.3	1981	135.3	1982	135.3	1983	135.3	1984	135.3	1985	135.3	1986	135.3	1987	135.3	1988	135.3	1989	135.3	1990	135.3	1991	135.3	1992	135.3	1993	135.3	1994	135.3	1995	135.3
1977	132.6	1978	132.6	1979	132.6	1980	132.6	1981	132.6	1982	132.6	1983	132.6	1984	132.6	1985	132.6	1986	132.6	1987	132.6	1988	132.6	1989	132.6	1990	132.6	1991	132.6	1992	132.6	1993	132.6	1994	132.6	1995	132.6	1996	132.6
1978	129.7	1979	129.7	1980	129.7	1981	129.7	1982	129.7	1983	129.7	1984	129.7	1985	129.7	1986	129.7	1987	129.7	1988	129.7	1989	129.7	1990	129.7	1991	129.7	1992	129.7	1993	129.7	1994	129.7	1995	129.7	1996	129.7	1997	129.7
1979	68.8	1980	68.8	1981	68.8	1982	68.8	1983	68.8	1984	68.8	1985	68.8	1986	68.8	1987	68.8	1988	68.8	1989	68.8	1990	68.8	1991	68.8	1992	68.8	1993	68.8	1994	68.8	1995	68.8	1996	68.8	1997	68.8	1998	68.8
1980	65.5	1981	65.5	1982	65.5	1983	65.5	1984	65.5	1985	65.5	1986	65.5	1987	65.5	1988	65.5	1989	65.5	1990	65.5	1991	65.5	1992	65.5	1993	65.5	1994	65.5	1995	65.5	1996	65.5	1997	65.5	1998	65.5	1999	65.5
1981	61.7	1982	61.7	1983	61.7	1984	61.7	1985	61.7	1986	61.7	1987	61.7	1988	61.7	1989	61.7	1990	61.7	1991	61.7	1992	61.7	1993	61.7	1994	61.7	1995	61.7	1996	61.7	1997	61.7	1998	61.7	1999	61.7	2000	61.7
1982	39.0	1983	39.0	1984	39.0	1985	39.0	1986	39.0	1987	39.0	1988	39.0	1989	39.0	1990	39.0	1991	39.0	1992	39.0	1993	39.0	1994	39.0	1995	39.0	1996	39.0	1997	39.0	1998	39.0	1999	39.0	2000	39.0	2001	39.0
1983	36.8	1984	36.8	1985	36.8	1986	36.8	1987	36.8	1988	36.8	1989	36.8	1990	36.8	1991	36.8	1992	36.8	1993	36.8	1994	36.8	1995	36.8	1996	36.8	1997	36.8	1998	36.8	1999	36.8	2000	36.8	2001	36.8	2002	36.8
1984	27.1	1985	27.1	1986	27.1	1987	27.1	1988	27.1	1989	27.1	1990	27.1	1991	27.1	1992	27.1	1993	27.1	1994	27.1	1995	27.1	1996	27.1	1997	27.1	1998	27.1	1999	27.1	2000	27.1	2001	27.1	2002	27.1	2003	27.1
1985	8.0	1986	8.0	1987	8.0	1988	8.0	1989	8.0	1990	8.0	1991	8.0	1992	8.0	1993	8.0	1994	8.0	1995	8.0	1996	8.0	1997	8.0	1998	8.0	1999	8.0	2000	8.0	2001	8.0	2002	8.0	2003	8.0	2004	8.0

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F
20.6% of VMT traveled in cold start,
52.1% of VMT in stabilized,
27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.3

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TABLE 3.11B.2 (continued)
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
CO

	January 1 of Calendar Year											
	1997	1998	1999	2000	2003	2005	2008	2010	2012	2015	2018	2020
MY* E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
1973	169.1	1974	166.5	1975	166.5	1976	166.5	1977	166.5	1978	166.5	1979
1974	164.9	1975	164.9	1976	164.9	1977	164.9	1978	164.9	1979	164.9	1980
1975	163.2	1976	163.2	1977	163.2	1978	163.2	1979	163.2	1980	163.2	1981
1976	161.5	1977	161.5	1978	161.5	1979	161.5	1980	161.5	1981	161.5	1982
1977	159.7	1978	159.7	1979	159.7	1980	159.7	1981	159.7	1982	159.7	1983
1978	157.9	1979	157.9	1980	157.9	1981	157.9	1982	157.9	1983	157.9	1984
1979	100.5	1980	100.5	1981	100.5	1982	100.5	1983	100.5	1984	100.5	1985
1980	98.3	1981	83.4	1982	62.8	1983	62.8	1984	62.8	1985	62.8	1986
1981	82.0	1982	61.5	1983	61.5	1984	61.5	1985	61.5	1986	61.5	1987
1982	60.1	1983	60.1	1984	52.7	1985	52.7	1986	52.7	1987	52.7	1988
1983	58.7	1984	51.3	1985	58.7	1986	57.7	1987	57.7	1988	57.7	1989
1984	49.8	1985	55.1	1986	54.0	1987	51.8	1988	51.8	1989	51.8	1990
1985	51.3	1986	50.3	1987	48.3	1988	46.8	1989	46.8	1990	46.8	1991
1986	46.4	1987	44.5	1988	43.2	1989	44.6	1990	44.6	1991	44.6	1992
1987	40.7	1988	39.5	1989	40.8	1990	40.9	1991	41.2	1992	41.2	1993
1988	35.6	1989	36.7	1990	36.9	1991	37.0	1992	37.0	1993	37.0	1994
1989	32.6	1990	32.7	1991	32.8	1992	33.0	1993	33.0	1994	33.0	1995
1990	28.4	1991	28.5	1992	28.6	1993	28.6	1994	28.6	1995	28.6	1996
1991	24.1	1992	24.2	1993	24.2	1994	22.5	1995	22.3	1996	22.3	1997
1992	19.5	1993	19.5	1994	17.8	1995	17.8	1996	17.2	1997	17.2	1998
1993	14.7	1994	13.0	1995	13.0	1996	12.9	1997	12.1	1998	12.1	1999
1994	10.3	1995	10.3	1996	10.2	1997	10.1	1998	9.4	1999	9.4	2000
1995	8.1	1996	8.0	1997	7.9	1998	7.5	2001	7.2	2002	7.2	2003
1996	5.8	1997	5.6	1998	5.3	1999	4.9	2002	4.9	2003	4.9	2004
1997	4.2	1998	3.8	1999	3.5	2000	3.5	2003	3.5	2005	3.5	2008
1973	83.1	1974	83.2	1975	83.2	1976	83.2	1977	83.2	1978	83.2	1979
1974	80.7	1975	80.7	1976	80.7	1977	80.7	1978	80.7	1979	80.7	1980
1975	77.6	1976	78.1	1977	78.1	1978	78.1	1979	78.1	1980	78.1	1981
1976	74.6	1977	75.4	1978	75.4	1979	75.4	1980	75.4	1981	75.4	1982
1977	71.9	1978	72.3	1979	72.3	1980	72.3	1981	72.3	1982	72.3	1983
1978	69.1	1979	69.1	1980	69.1	1981	69.1	1982	69.1	1983	69.1	1984
1979	66.1	1980	66.1	1981	66.1	1982	66.1	1983	66.1	1984	66.1	1985
1980	63.1	1981	63.1	1982	63.1	1983	63.1	1984	63.1	1985	63.1	1986
1981	60.0	1982	60.0	1983	60.0	1984	60.0	1985	60.0	1986	60.0	1987
1982	56.7	1983	56.7	1984	56.7	1985	56.7	1986	56.7	1987	56.7	1988
1983	53.3	1984	53.3	1985	53.3	1986	53.3	1987	53.3	1988	53.3	1989
1984	49.9	1985	49.9	1986	49.9	1987	49.9	1988	49.9	1989	49.9	1990
1985	46.2	1986	46.2	1987	46.2	1988	46.2	1989	46.2	1990	46.2	1991
1986	42.5	1987	42.5	1988	42.5	1989	42.5	1990	42.5	1991	42.5	1992
1987	38.6	1988	38.6	1989	38.6	1990	38.6	1991	38.6	1992	38.6	1993
1988	34.5	1989	34.5	1990	34.5	1991	34.5	1992	34.5	1993	34.5	1994
1989	30.4	1990	30.4	1991	30.4	1992	30.4	1993	30.4	1994	30.4	1995
1990	26.0	1991	26.0	1992	26.0	1993	26.0	1994	26.0	1995	26.0	1996
1991	21.5	1992	21.5	1993	21.5	1994	21.5	1995	21.5	1996	21.5	1997
1992	16.9	1993	16.9	1994	16.9	1995	16.9	1996	16.9	1997	16.9	1998
1993	12.1	1994	12.1	1995	12.1	1996	12.1	1997	12.1	1998	12.1	1999
1994	9.4	1995	9.4	1996	9.4	1997	9.4	1998	9.4	1999	9.4	2000
1995	7.2	1996	7.2	1997	7.2	1998	7.2	1999	7.2	1999	7.2	2000
1996	4.9	1997	4.9	1998	4.9	1999	4.9	2000	4.9	2000	4.9	2001
1997	3.5	1998	3.5	1999	3.5	2000	3.5	2001	3.5	2001	3.5	2002

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F
20.6% of VMT traveled in cold start,
52.1% of VMT in stabilized,
27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.3

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TABLE 3.11C.2
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
NOx

DATE : JUNE 30, 1995

	January 1 of Calendar Year																							
	1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996	
+	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**
	1961	3.1	1962	3.1	1963	3.1	1964	3.1	1965	3.1	1966	3.1	1967	3.1	1968	3.1	1969	3.1	1970	3.1	1971	4.3	1972	4.3
	1962	3.1	1963	3.1	1964	3.1	1965	3.1	1966	3.1	1967	3.1	1968	3.1	1969	3.1	1970	3.1	1971	4.3	1972	4.3	1973	4.3
	1963	3.1	1964	3.1	1965	3.1	1966	3.1	1967	3.1	1968	3.1	1969	3.1	1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	4.0
	1964	3.1	1965	3.1	1966	3.1	1967	3.1	1968	3.1	1969	3.1	1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	4.0	1975	4.0
	1965	3.1	1966	3.1	1967	3.1	1968	3.1	1969	3.1	1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	3.9	1975	3.9	1976	3.9
	1966	3.1	1967	3.1	1968	3.1	1969	3.1	1970	4.3	1971	4.3	1972	4.3	1973	3.9	1974	3.9	1975	3.9	1976	3.9	1977	3.9
	1967	3.1	1968	3.1	1969	3.1	1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	3.9	1975	3.9	1976	3.9	1977	3.9	1978	3.9
	1968	3.1	1969	3.1	1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	3.8	1975	3.8	1976	3.8	1977	3.8	1978	3.8	1979	2.1
	1969	3.1	1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	3.8	1975	3.8	1976	3.8	1977	3.8	1978	2.0	1979	2.0	1980	2.0
	1970	4.3	1971	4.3	1972	4.3	1973	4.3	1974	3.8	1975	3.8	1976	3.8	1977	3.8	1978	3.8	1979	2.0	1980	2.0	1981	1.6
	1971	4.3	1972	4.3	1973	4.3	1974	3.7	1975	3.7	1976	3.7	1977	3.7	1978	3.7	1979	1.9	1980	1.9	1981	1.6	1982	1.9
	1972	4.3	1973	4.3	1974	3.7	1975	3.7	1976	3.7	1977	3.7	1978	3.7	1979	1.9	1980	1.9	1981	1.6	1982	1.9	1983	1.9
	1973	4.3	1974	3.6	1975	3.6	1976	3.6	1977	3.6	1978	3.6	1979	1.8	1980	1.8	1981	1.5	1982	1.9	1983	1.9	1984	2.3
	1974	3.6	1975	3.6	1976	3.6	1977	3.6	1978	3.6	1979	1.8	1980	1.8	1981	1.5	1982	1.8	1983	1.9	1984	2.2	1985	3.5
	1975	3.6	1976	3.6	1977	3.6	1978	3.6	1979	1.7	1980	1.7	1981	1.5	1982	1.8	1983	1.8	1984	2.2	1985	3.2	1986	3.2
	1976	3.5	1977	3.5	1978	3.5	1979	1.6	1980	1.6	1981	1.6	1982	1.8	1983	1.8	1984	2.1	1985	3.0	1986	3.0	1987	2.9
	1977	3.5	1978	3.5	1979	1.6	1980	1.6	1981	1.4	1982	1.8	1983	1.8	1984	2.0	1985	2.8	1986	2.7	1987	2.6	1988	2.4
	1978	3.4	1979	1.5	1980	1.5	1981	1.4	1982	1.7	1983	1.7	1984	1.9	1985	2.5	1986	2.4	1987	2.4	1988	2.2	1989	2.1
	1979	1.4	1980	1.4	1981	1.4	1982	1.3	1983	1.7	1984	1.8	1985	2.2	1986	2.2	1987	2.1	1988	1.9	1989	1.8	1990	1.8
	1980	1.4	1981	1.3	1982	1.6	1983	1.7	1984	1.7	1985	2.0	1986	1.9	1987	1.8	1988	1.6	1989	1.6	1990	1.5	1991	1.5
	1981	1.3	1982	1.6	1983	1.6	1984	1.7	1985	1.7	1986	1.6	1987	1.5	1988	1.3	1989	1.3	1990	1.3	1991	1.2	1992	1.2
	1982	1.6	1983	1.6	1984	1.6	1985	1.5	1986	1.4	1987	1.3	1988	1.1	1989	1.1	1990	1.1	1991	1.1	1992	1.1	1993	1.1
	1983	1.6	1984	1.5	1985	1.4	1986	1.4	1987	1.2	1988	1.0	1989	1.0	1990	1.0	1991	1.0	1992	1.0	1993	1.0	1994	1.0
	1984	1.4	1985	1.3	1986	1.3	1987	1.1	1988	0.9	1989	0.9	1990	0.8	1991	0.8	1992	0.8	1993	0.8	1994	0.8	1995	0.8
	1985	1.2	1986	1.1	1987	1.0	1988	0.8	1989	0.8	1990	0.7	1991	0.7	1992	0.7	1993	0.7	1994	0.7	1995	0.7	1996	0.7

*MY -- Indicates the model year.

**E -- Indicates the average grams/mile emission level for model year "MY" on January 1 of the given calendar year. These emission levels are calculated for the FTP test conditions:

19.6 MPH, TEMP=75 Degrees F
20.6% of VMT traveled in cold start,
52.1% of VMT in stabilized,
27.3% of VMT in hot start.

Emissions are based on the January 1 mileage accumulation figures given in Table 2.4A.3

Continued on the next page.

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TABLE 3.11C.2 (continued)
BY-MODEL-YEAR EMISSION LEVELS FOR HIGH ALTITUDE
LIGHT DUTY GASOLINE POWERED TRUCKS II
NOX

		January 1 of Calendar Year																																																																																														
		1997			1998			1999			2000			2003			2005			2008			2010			2012			2015			2018			2020																																																													
+	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**	MY*	E**																																																														
	1973	4.3	1974	4.0	1975	4.0	1976	4.0	1977	4.0	1978	4.0	1979	4.0	1980	4.0	1981	1.8	1982	2.1	1983	2.1	1984	3.0	1985	5.9	1986	5.6	1987	5.3	1988	5.3	1989	5.1	1990	5.2	1991	5.0	1992	5.1	1993	5.3	1994	5.3	1995	5.1	1996	5.1	1997	5.1	1998	5.1	1999	5.1	2000	5.1	2001	5.1	2002	5.1	2003	5.1	2004	5.1	2005	5.1	2006	5.1	2007	5.1	2008	5.1	2009	5.1	2010	5.1	2011	5.1	2012	5.1	2013	5.1	2014	5.1	2015	5.1	2016	5.1	2017	5.1	2018	5.1	2019	5.1	2020	5.1
	1974	4.0	1975	4.0	1976	4.0	1977	4.0	1978	4.0	1979	4.0	1980	4.0	1981	4.0	1982	2.1	1983	2.1	1984	2.1	1985	5.7	1986	5.9	1987	5.3	1988	5.3	1989	5.3	1990	5.1	1991	5.2	1992	5.0	1993	5.3	1994	5.3	1995	5.1	1996	5.1	1997	5.1	1998	5.1	1999	5.1	2000	5.1	2001	5.1	2002	5.1	2003	5.1	2004	5.1	2005	5.1	2006	5.1	2007	5.1	2008	5.1	2009	5.1	2010	5.1	2011	5.1	2012	5.1	2013	5.1	2014	5.1	2015	5.1	2016	5.1	2017	5.1	2018	5.1	2019	5.1	2020	5.1		
	1975	4.0	1976	4.0	1977	4.0	1978	4.0	1979	4.0	1980	4.0	1981	4.0	1982	4.0	1983	2.1	1984	2.1	1985	2.1	1986	5.6	1987	5.9	1988	5.3	1989	5.3	1990	5.3	1991	4.8	1992	4.8	1993	4.8	1994	4.8	1995	4.8	1996	4.8	1997	4.8	1998	4.8	1999	4.8	2000	4.8	2001	4.8	2002	4.8	2003	4.8	2004	4.8	2005	4.8	2006	4.8	2007	4.8	2008	4.8	2009	4.8	2010	4.8	2011	4.8	2012	4.8	2013	4.8	2014	4.8	2015	4.8	2016	4.8	2017	4.8	2018	4.8	2019	4.8	2020	4.8				
	1976	4.0	1977	4.0	1978	4.0	1979	4.0	1980	4.0	1981	4.0	1982	4.0	1983	4.0	1984	2.1	1985	2.1	1986	2.1	1987	5.5	1988	5.9	1989	5.3	1990	5.3	1991	5.3	1992	4.8	1993	4.8	1994	4.8	1995	4.8	1996	4.8	1997	4.8	1998	4.8	1999	4.8	2000	4.8	2001	4.8	2002	4.8	2003	4.8	2004	4.8	2005	4.8	2006	4.8	2007	4.8	2008	4.8	2009	4.8	2010	4.8	2011	4.8	2012	4.8	2013	4.8	2014	4.8	2015	4.8	2016	4.8	2017	4.8	2018	4.8	2019	4.8	2020	4.8						
	1977	3.9	1978	3.9	1979	3.9	1980	3.9	1981	3.9	1982	3.9	1983	3.9	1984	3.9	1985	2.2	1986	2.2	1987	2.2	1988	5.0	1989	5.9	1990	5.3	1991	5.3	1992	5.3	1993	4.6	1994	4.6	1995	4.6	1996	4.6	1997	4.6	1998	4.6	1999	4.6	2000	4.6	2001	4.6	2002	4.6	2003	4.6	2004	4.6	2005	4.6	2006	4.6	2007	4.6	2008	4.6	2009	4.6	2010	4.6	2011	4.6	2012	4.6	2013	4.6	2014	4.6	2015	4.6	2016	4.6	2017	4.6	2018	4.6	2019	4.6	2020	4.6								
	1978	3.9	1979	3.9	1980	3.9	1981	3.9	1982	3.9	1983	3.9	1984	3.9	1985	3.9	1986	2.2	1987	2.2	1988	2.2	1989	5.0	1990	5.9	1991	5.3	1992	5.3	1993	5.3	1994	4.6	1995	4.6	1996	4.6	1997	4.6	1998	4.6	1999	4.6	2000	4.6	2001	4.6	2002	4.6	2003	4.6	2004	4.6	2005	4.6	2006	4.6	2007	4.6	2008	4.6	2009	4.6	2010	4.6	2011	4.6	2012	4.6	2013	4.6	2014	4.6	2015	4.6	2016	4.6	2017	4.6	2018	4.6	2019	4.6	2020	4.6										
	1979	2.1	1980	2.1	1981	2.1	1982	2.1	1983	2.1	1984	2.1	1985	2.1	1986	2.1	1987	2.0	1988	2.0	1989	2.0	1990	4.7	1991	5.9	1992	5.3	1993	5.3	1994	5.3	1995	4.5	1996	4.5	1997	4.5	1998	4.5	1999	4.5	2000	4.5	2001	4.5	2002	4.5	2003	4.5	2004	4.5	2005	4.5	2006	4.5	2007	4.5	2008	4.5	2009	4.5	2010	4.5	2011	4.5	2012	4.5	2013	4.5	2014	4.5	2015	4.5	2016	4.5	2017	4.5	2018	4.5	2019	4.5	2020	4.5												
	1980	2.1	1981	2.1	1982	2.1	1983	2.1	1984	2.1	1985	2.1	1986	2.1	1987	2.1	1988	2.0	1989	2.0	1990	2.0	1991	4.2	1992	5.9	1993	5.3	1994	5.3	1995	5.3	1996	4.1	1997	4.1	1998	4.1	1999	4.1	2000	4.1	2001	4.1	2002	4.1	2003	4.1	2004	4.1	2005	4.1	2006	4.1	2007	4.1	2008	4.1	2009	4.1	2010	4.1	2011	4.1	2012	4.1	2013	4.1	2014	4.1	2015	4.1	2016	4.1	2017	4.1	2018	4.1	2019	4.1	2020	4.1														
	1981	1.6	1982	2.0	1983	2.0	1984	2.0	1985	2.0	1986	2.0	1987	2.0	1988	2.0	1989	4.2	1990	4.2	1991	4.2	1992	4.0	1993	5.9	1994	5.3	1995	5.3	1996	5.3	1997	3.9	1998	3.9	1999	3.9	2000	3.9	2001	3.9	2002	3.9	2003	3.9	2004	3.9	2005	3.9	2006	3.9	2007	3.9	2008	3.9	2009	3.9	2010	3.9	2011	3.9	2012	3.9	2013	3.9	2014	3.9	2015	3.9	2016	3.9	2017	3.9	2018	3.9	2019	3.9	2020	3.9																
	1982	2.0	1983	2.0	1984	2.0	1985	2.0	1986	2.0	1987	2.0	1988	2.0	1989	2.0	1990	3.8	1991	3.8	1992	3.8	1993	3.8	1994	5.9	1995	5.3	1996	5.3	1997	5.3	1998	3.6	1999	3.6	2000	3.6	2001	3.6	2002	3.6	2003	3.6	2004	3.6	2005	3.6	2006	3.6	2007	3.6	2008	3.6	2009	3.6	2010	3.6	2011	3.6	2012	3.6	2013	3.6	2014	3.6	2015	3.6	2016	3.6	2017	3.6	2018	3.6	2019	3.6	2020	3.6																		
	1983	2.0	1984	2.4	1985	4.1	1986	4.1	1987	4.1	1988	4.1	1989	3.8	1990	3.8	1991	3.6	1992	3.6	1993	3.6	1994	3.6	1995	5.9	1996	5.3	1997	5.3	1998	5.3	1999	3.5	2000	3.5	2001	3.5	2002	3.5	2003	3.5	2004	3.5	2005	3.5	2006	3.5	2007	3.5	2008	3.5	2009	3.5	2010	3.5	2011	3.5	2012	3.5	2013	3.5	2014	3.5	2015	3.5	2016	3.5	2017	3.5	2018	3.5	2019	3.5	2020	3.5																				
	1984	2.4	1985	3.9	1986	3.9	1987	3.9	1988	3.9	1989	3.9	1990	3.4	1991	3.4	1992	3.4	1993	3.4	1994	3.4	1995	3.4	1996	5.9	1997	5.3	1998	5.3	1999	5.3	2000	3.1	2001	3.1	2002	3.1	2003	3.1	2004	3.1	2005	3.1	2006	3.1	2007	3.1	2008	3.1	2009	3.1	2010	3.1	2011	3.1	2012	3.1	2013	3.1	2014	3.1	2015	3.1	2016	3.1	2017	3.1	2018	3.1	2019	3.1	2020	3.1																						
	1985	3.7	1986	3.7	1987	3.7	1988	3.7	1989	3.7	1990	3.7	1991	3.2	1992	3.2	1993	3.2	1994	3.2	1995	3.2	1996	3.2	1997	5.9	1998	5.3	1999	5.3	2000	5.3	2001	2.9	2002	2.9	2003	2.9	2004	2.9	2005	2.9	2006	2.9	2007	2.9	2008	2.9	2009	2.9	2010	2.9	2011	2.9	2012	2.9	2013	2.9	2014	2.9	2015	2.9	2016	2.9	2017	2.9	2018	2.9	2019	2.9	2020	2.9																								
	1986	3.5	1987	3.4	1988	3.2	1989	3.1	1990	2.8	1991	2.5	1992	2.8	1993	2.7	1994	3.0	1995	3.0	1996	3.0	1997	2.8	1998	5.9	1999	5.3	2000	5.3	2001	5.3	2002	2.7	2003	2.7	2004	2.7	2005	2.7	2006	2.7	2007	2.7	2008	2.7	2009	2.7	2010	2.7	2011	2.7	2012	2.7	2013	2.7	2014	2.7	2015	2.7	2016	2.7	2017	2.7	2018	2.7	2019	2.7	2020	2.7																										
	1987	3.2	1988	2.9	1989	2.9	1990	2.8	1991	2.5	1992	2.5	1993	2.7	1994	2.7	1995	2.7	1996	2.7	1997	2.7	1998	2.5	1999	5.9	2000	5.3	2001	5.3	2002	5.3	2003	2.5	2004	2.5	2005	2.5	2006	2.5	2007	2.5	2008	2.5	2009	2.5	2010	2.5	2011	2.5	2012	2.5	2013	2.5	2014	2.5	2015	2.5	2016	2.5	2017	2.5	2018	2.5	2019	2.5	2020	2.5																												
	1988	2.7	1989	2.6	1990	2.5	1991	2.5	1992	2.5	1993	2.5	1994	2.5	1995	2.5	1996	2.4	1997	2.4	1998	2.4	1999	2.2	2000	5.9	2001	5.3	2002	5.3	2003	5.3	2004	2.2	2005	2.2	2006	2.2	2007	2.2	2008	2.2	2009	2.2	2010																																																			

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TABLE 3.12A

THE IMPACT OF OXYGENATED FUELS ON EMISSIONS
BY MODEL YEAR HC AVERAGE EMISSION LEVELS WITHOUT OXYGENATED FUEL AND BENEFIT FACTORS

NUM	1981		1982		1983		1984		1985		1986		1987		1988		1989	
	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**
1	0.38	5.40	0.39	5.11	0.33	4.99	0.32	4.97	0.33	4.77	0.33	4.52	0.33	4.29	0.33	3.97	0.33	4.15
2	0.52	5.36	0.53	5.09	0.44	5.04	0.41	5.09	0.43	4.90	0.42	4.70	0.42	4.49	0.42	4.19	0.43	4.36
3	0.68	5.34	0.69	5.10	0.59	5.10	0.53	5.22	0.55	5.05	0.53	4.91	0.52	4.71	0.53	4.45	0.54	4.61
4	0.86	5.34	0.88	5.11	0.75	5.17	0.65	5.36	0.68	5.21	0.64	5.13	0.64	4.94	0.64	4.72	0.66	4.87
5	1.08	5.45	1.09	5.23	0.96	5.35	0.87	5.60	0.89	5.47	0.86	5.45	0.85	5.30	0.84	5.14	0.87	5.25
6	1.32	5.55	1.33	5.35	1.20	5.49	1.10	5.77	1.13	5.67	1.10	5.68	1.08	5.56	1.07	5.43	1.10	5.52
7	1.58	5.65	1.57	5.46	1.45	5.61	1.36	5.90	1.39	5.82	1.35	5.86	1.32	5.76	1.31	5.66	1.36	5.74
8	1.85	5.73	1.82	5.55	1.70	5.72	1.63	6.02	1.66	5.96	1.62	6.02	1.58	5.93	1.56	5.86	1.62	5.93
9	2.13	5.80	2.09	5.63	1.97	5.81	1.91	6.12	1.94	6.08	1.90	6.16	1.85	6.08	1.82	6.03	1.89	6.10
10	2.48	5.91	2.41	5.75	2.33	5.94	2.33	6.24	2.36	6.22	2.34	6.30	2.27	6.24	2.24	6.21	2.32	6.27
11	2.76	5.96	2.67	5.81	2.59	6.00	2.61	6.30	2.63	6.28	2.61	6.37	2.53	6.32	2.49	6.30	2.59	6.35
12	3.02	6.00	2.91	5.85	2.84	6.04	2.87	6.35	2.90	6.33	2.88	6.42	2.78	6.38	2.73	6.36	2.85	6.41
13	3.28	6.02	3.15	5.88	3.08	6.08	3.12	6.39	3.16	6.36	3.14	6.46	3.03	6.42	2.98	6.42	3.11	6.45
14	3.51	6.04	3.37	5.90	3.30	6.09	3.36	6.41	3.40	6.38	3.38	6.49	3.27	6.45	3.22	6.45	3.36	6.48
15	3.66	6.04	3.52	5.91	3.47	6.10	3.53	6.42	3.60	6.40	3.59	6.51	3.47	6.47	3.44	6.48	3.60	6.50
16	3.81	6.05	3.67	5.92	3.63	6.11	3.69	6.43	3.79	6.41	3.80	6.52	3.68	6.49	3.66	6.50	3.83	6.52
17	3.95	6.05	3.81	5.92	3.77	6.11	3.84	6.43	3.95	6.42	3.97	6.53	3.85	6.51	3.85	6.52	4.02	6.54
18	4.08	6.04	3.94	5.92	3.91	6.11	3.98	6.44	4.08	6.42	4.10	6.54	3.98	6.51	3.98	6.52	4.15	6.54
19	4.21	6.04	4.07	5.92	4.04	6.11	4.11	6.44	4.21	6.42	4.23	6.54	4.11	6.52	4.11	6.53	4.27	6.55
20	4.33	6.04	4.19	5.92	4.16	6.11	4.23	6.45	4.33	6.43	4.35	6.55	4.24	6.53	4.23	6.54	4.39	6.55
21	4.44	6.04	4.30	5.92	4.28	6.11	4.35	6.45	4.44	6.43	4.46	6.55	4.35	6.53	4.35	6.55	4.50	6.56
22	4.54	6.03	4.41	5.92	4.39	6.11	4.46	6.46	4.55	6.43	4.57	6.56	4.47	6.54	4.46	6.55	4.61	6.56
23	4.65	6.03	4.52	5.92	4.50	6.11	4.57	6.46	4.65	6.43	4.68	6.56	4.58	6.54	4.57	6.56	4.71	6.56
24	4.74	6.03	4.61	5.92	4.60	6.11	4.67	6.46	4.75	6.43	4.78	6.56	4.68	6.55	4.68	6.56	4.81	6.57
25	4.83	6.03	4.71	5.92	4.70	6.11	4.77	6.47	4.85	6.44	4.87	6.57	4.78	6.55	4.77	6.57	4.90	6.57

Continued on the next page

HC* Indicates the average emission levels without oxygenated fuels

B** Indicate the benefit factors

To interpolate the benefit factor the following formula should be used:

$$\text{BENFAC} = (\text{BEFADJ}^*(Y2-Y1) + X2*Y1 - X1*Y2) / (X2 - X1)$$

where: BEFADJ -basic emission factor

Y1, Y2 -lower and upper benefit factor

X1, X2 -lower and upper interpolation values

For Pre-1981 LDGV or

Pre-1991 LDGT1+2 or

HDGV or MC

where: BENFAC=NOCAT* 1.57+CAT* 4.46

NOCAT-fraction of vehicles that are not catalyst equipped

CAT -fraction of vehicles that are catalyst equipped

There is no effect on NOx.

For additional information see Table 3.13

"Exhaust Effects of Oxygenated Fuel Blends Percent of Change in Emissions"

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TABLE 3.12A (continued)

THE IMPACT OF OXYGENATED FUELS ON EMISSIONS
BY MODEL YEAR HC AVERAGE EMISSION LEVELS WITHOUT OXYGENATED FUEL AND BENEFIT FACTORS

NUM	1990		1991		1992		1993		1994		1995		1996		1997		1998	
	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**	HC*	B**
1	0.34	4.01	0.34	4.00	0.34	4.01	0.34	4.01	0.32	4.01	0.31	4.00	0.28	4.01	0.27	4.01	0.26	4.02
2	0.44	4.24	0.44	4.23	0.44	4.25	0.44	4.25	0.42	4.24	0.40	4.23	0.38	4.23	0.36	4.23	0.35	4.24
3	0.55	4.51	0.55	4.50	0.55	4.52	0.55	4.52	0.53	4.49	0.51	4.47	0.49	4.47	0.47	4.47	0.46	4.48
4	0.67	4.78	0.67	4.78	0.67	4.79	0.67	4.79	0.65	4.76	0.63	4.73	0.60	4.72	0.59	4.72	0.58	4.72
5	0.88	5.18	0.89	5.18	0.89	5.19	0.89	5.19	0.87	5.17	0.84	5.14	0.81	5.12	0.80	5.12	0.79	5.12
6	1.12	5.48	1.13	5.48	1.13	5.48	1.13	5.48	1.10	5.46	1.07	5.43	1.04	5.42	1.03	5.42	1.02	5.42
7	1.38	5.71	1.38	5.72	1.39	5.72	1.39	5.72	1.36	5.70	1.32	5.67	1.29	5.65	1.27	5.65	1.26	5.65
8	1.64	5.92	1.65	5.92	1.66	5.93	1.66	5.93	1.62	5.90	1.58	5.87	1.55	5.85	1.53	5.85	1.52	5.85
9	1.91	6.10	1.92	6.10	1.93	6.11	1.93	6.11	1.89	6.08	1.85	6.05	1.82	6.03	1.80	6.02	1.79	6.02
10	2.35	6.28	2.36	6.29	2.37	6.30	2.37	6.30	2.33	6.27	2.29	6.24	2.25	6.22	2.24	6.21	2.23	6.21
11	2.61	6.56	2.63	6.37	2.64	6.38	2.64	6.38	2.59	6.36	2.55	6.35	2.51	6.34	2.49	6.34	2.49	6.33
12	2.88	6.42	2.89	6.42	2.91	6.43	2.91	6.43	2.86	6.43	2.81	6.43	2.77	6.43	2.75	6.44	2.75	6.44
13	3.14	6.46	3.16	6.46	3.18	6.47	3.18	6.47	3.13	6.47	3.08	6.47	3.03	6.47	3.02	6.47	3.01	6.47
14	3.41	6.49	3.43	6.49	3.45	6.50	3.45	6.50	3.39	6.50	3.34	6.50	3.29	6.50	3.28	6.50	3.27	6.50
15	3.66	6.52	3.69	6.52	3.71	6.52	3.71	6.52	3.65	6.52	3.60	6.52	3.55	6.52	3.54	6.52	3.53	6.53
16	3.92	6.54	3.95	6.54	3.97	6.55	3.97	6.55	3.91	6.55	3.85	6.55	3.81	6.55	3.79	6.55	3.78	6.55
17	4.12	6.55	4.15	6.56	4.17	6.56	4.17	6.56	4.11	6.56	4.06	6.56	4.01	6.56	3.99	6.56	3.98	6.56
18	4.24	6.56	4.28	6.56	4.30	6.56	4.30	6.56	4.24	6.56	4.18	6.56	4.13	6.56	4.12	6.56	4.11	6.56
19	4.36	6.56	4.39	6.56	4.42	6.57	4.42	6.57	4.36	6.57	4.30	6.57	4.26	6.57	4.24	6.57	4.23	6.57
20	4.48	6.56	4.51	6.57	4.53	6.57	4.53	6.57	4.47	6.57	4.41	6.57	4.37	6.57	4.35	6.57	4.34	6.57
21	4.59	6.57	4.62	6.57	4.64	6.57	4.64	6.57	4.58	6.57	4.52	6.57	4.48	6.57	4.46	6.57	4.45	6.57
22	4.69	6.57	4.72	6.57	4.74	6.57	4.74	6.57	4.68	6.57	4.63	6.57	4.58	6.57	4.57	6.57	4.56	6.57
23	4.79	6.57	4.82	6.57	4.84	6.58	4.84	6.58	4.78	6.58	4.73	6.58	4.68	6.58	4.66	6.58	4.66	6.58
24	4.88	6.57	4.91	6.58	4.93	6.58	4.93	6.58	4.87	6.58	4.82	6.58	4.77	6.58	4.76	6.58	4.75	6.58
25	4.97	6.58	5.00	6.58	5.02	6.58	5.02	6.58	4.96	6.58	4.91	6.58	4.86	6.58	4.85	6.58	4.84	6.58

HC* Indicates the average emission levels without oxygenated fuels
B** Indicate the benefit factors

To interpolate the benefit factor the following formula should be used:

$$\text{BENFAC} = (\text{BEFADJ} * (Y2 - Y1) + X2 * Y1 - X1 * Y2) / (X2 - X1)$$

where: BEFADJ - basic emission factor

Y1, Y2 - lower and upper benefit factor

X1, X2 - lower and upper interpolation values

For Pre-1981 LDGV or

Pre-1991 LDGT1+2 or

HDGV or MC

where: BENFAC=NOCAT* 1.57+CAT* 4.46

NOCAT - fraction of vehicles that are not catalyst equipped

CAT - fraction of vehicles that are catalyst equipped

There is no effect on NOx.

For additional information see Table 3.13

"Exhaust Effects of Oxygenated Fuel Blends Percent of Change in Emissions"

DATE : JUNE 30, 1995

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TABLE 3.12B

THE IMPACT OF OXYGENATED FUELS ON EMISSIONS
BY MODEL YEAR CO AVERAGE EMISSION LEVELS WITHOUT OXYGENATED FUEL AND BENEFIT FACTORS

NUM	1981		1982		1983		1984		1985		1986		1987		1988		1989	
	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**
1	4.96	8.42	5.08	8.39	5.05	7.97	4.59	7.17	4.52	6.98	4.27	6.39	4.24	6.30	4.12	5.92	4.11	5.93
2	7.13	8.87	7.34	8.84	7.08	8.48	6.16	7.77	6.27	7.61	5.91	7.08	5.88	7.01	5.83	6.70	5.89	6.72
3	9.46	9.17	9.74	9.15	9.23	8.83	7.80	8.23	8.09	8.10	7.58	7.65	7.55	7.59	7.54	7.33	7.68	7.36
4	11.91	9.37	12.25	9.35	11.38	9.09	9.37	8.59	9.75	8.50	9.01	8.12	8.95	8.06	8.90	7.84	9.11	7.88
5	15.02	9.62	15.12	9.58	14.26	9.42	12.42	9.14	12.77	9.07	12.03	8.84	11.85	8.78	11.71	8.63	12.04	8.67
6	18.26	9.79	18.09	9.75	17.27	9.64	15.64	9.49	15.96	9.43	15.22	9.30	14.91	9.24	14.67	9.13	15.13	9.17
7	21.59	9.93	21.15	9.88	20.36	9.81	18.98	9.73	19.26	9.69	18.53	9.60	18.08	9.55	17.75	9.47	18.34	9.51
8	24.97	10.03	24.27	9.98	23.51	9.94	22.38	9.90	22.63	9.88	21.92	9.82	21.33	9.78	20.90	9.71	21.63	9.75
9	28.39	10.12	27.40	10.06	26.68	10.04	25.83	10.04	26.04	10.02	25.36	9.99	24.61	9.95	24.09	9.90	24.96	9.94
10	32.96	10.27	31.52	10.21	31.13	10.22	31.22	10.25	31.24	10.23	30.81	10.23	29.88	10.19	29.23	10.16	30.22	10.19
11	36.15	10.31	34.44	10.25	34.08	10.27	34.42	10.31	34.42	10.30	34.01	10.30	32.93	10.27	32.19	10.25	33.32	10.27
12	39.12	10.35	37.19	10.30	36.92	10.31	37.49	10.37	37.50	10.36	37.13	10.37	35.92	10.34	35.12	10.32	36.39	10.35
13	42.03	10.39	39.87	10.34	39.68	10.36	40.49	10.42	40.52	10.41	40.18	10.43	38.83	10.40	37.96	10.38	39.40	10.41
14	44.46	10.42	42.13	10.37	42.02	10.39	42.99	10.46	43.16	10.46	42.90	10.47	41.42	10.45	40.59	10.43	42.21	10.46
15	45.81	10.44	43.53	10.38	43.55	10.41	44.57	10.48	45.11	10.49	45.06	10.51	43.59	10.49	43.02	10.48	44.78	10.51
16	47.11	10.45	44.87	10.40	45.03	10.43	46.10	10.51	47.01	10.52	47.17	10.55	45.71	10.52	45.41	10.52	47.30	10.55
17	48.31	10.46	46.12	10.41	46.38	10.45	47.49	10.53	48.58	10.54	48.87	10.57	47.44	10.55	47.31	10.55	49.24	10.58
18	49.41	10.47	47.27	10.42	47.57	10.46	48.70	10.55	49.75	10.56	50.06	10.59	48.70	10.57	48.59	10.58	50.43	10.60
19	50.46	10.48	48.38	10.43	48.72	10.47	49.86	10.57	50.86	10.58	51.20	10.61	49.91	10.59	49.83	10.60	51.58	10.62
20	51.45	10.49	49.43	10.44	49.82	10.49	50.98	10.58	51.93	10.59	52.29	10.63	51.07	10.61	51.02	10.62	52.67	10.64
21	52.40	10.50	50.44	10.45	50.87	10.50	52.05	10.60	52.95	10.61	53.34	10.65	52.18	10.63	52.17	10.64	53.72	10.65
22	53.31	10.51	51.40	10.46	51.88	10.51	53.07	10.62	53.93	10.62	54.34	10.66	53.25	10.65	53.27	10.65	54.72	10.67
23	54.16	10.52	52.32	10.47	52.85	10.52	54.05	10.63	54.86	10.64	55.29	10.68	54.28	10.66	54.32	10.67	55.68	10.69
24	54.98	10.53	53.20	10.48	53.77	10.53	54.98	10.64	55.74	10.65	56.20	10.69	55.26	10.68	55.33	10.69	56.60	10.70
25	55.76	10.54	54.04	10.48	54.64	10.54	55.88	10.66	56.59	10.66	57.07	10.70	56.20	10.69	56.30	10.70	57.48	10.71

Continued on the next page

CO* Indicates the average emission levels without oxygenated fuels
B** Indicate the benefit factors

To interpolate the benefit factor the following formula should be used:
$$\text{BENFAC} = (\text{BEFADJ} * (\text{Y2} - \text{Y1}) + \text{X2} * \text{Y1} - \text{X1} * \text{Y2}) / (\text{X2} - \text{X1})$$

where: BEFADJ - basic emission factor
Y1, Y2 - lower and upper benefit factor
X1, X2 - lower and upper interpolation values

For Pre-1981 LDGV or
Pre-1991 LDGT1+2 or
HDGV or MC : BENFAC=NOCAT* 7.00+CAT* 9.97
where: NOCAT - fraction of vehicles that are not catalyst equipped
CAT - fraction of vehicles that are catalyst equipped

There is no effect on NOx.

For additional information see Table 3.13
"Exhaust Effects of Oxygenated Fuel Blends Percent of Change in Emissions"

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TABLE 3.12B (continued)

THE IMPACT OF OXYGENATED FUELS ON EMISSIONS
BY MODEL YEAR CO AVERAGE EMISSION LEVELS WITHOUT OXYGENATED FUEL AND BENEFIT FACTORS

NUM	1990		1991		1992		1993		1994		1995		1996		1997		1998	
	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**	CO*	B**
1	4.01	5.63	4.00	5.58	3.99	5.56	3.99	5.56	3.99	5.56	3.99	5.56	3.99	5.56	3.99	5.56	3.99	5.56
2	5.90	6.50	5.91	6.46	5.91	6.45	5.91	6.45	5.91	6.45	5.91	6.45	5.91	6.45	5.91	6.45	5.91	6.45
3	7.78	7.20	7.81	7.17	7.83	7.16	7.83	7.16	7.83	7.16	7.83	7.16	7.83	7.16	7.83	7.16	7.83	7.16
4	9.24	7.75	9.27	7.73	9.30	7.73	9.30	7.73	9.30	7.73	9.30	7.73	9.30	7.73	9.30	7.73	9.30	7.73
5	12.16	8.59	12.21	8.57	12.25	8.57	12.25	8.57	12.25	8.57	12.25	8.57	12.25	8.57	12.25	8.57	12.25	8.57
6	15.25	9.11	15.31	9.11	15.37	9.11	15.37	9.11	15.37	9.11	15.37	9.11	15.37	9.11	15.37	9.11	15.37	9.11
7	18.46	9.47	18.54	9.47	18.60	9.47	18.60	9.47	18.60	9.47	18.60	9.47	18.60	9.47	18.60	9.47	18.60	9.47
8	21.75	9.73	21.84	9.73	21.92	9.73	21.92	9.73	21.92	9.73	21.92	9.73	21.92	9.73	21.92	9.73	21.92	9.73
9	25.08	9.92	25.19	9.92	25.29	9.93	25.29	9.93	25.29	9.93	25.29	9.93	25.29	9.93	25.29	9.93	25.29	9.93
10	30.29	10.18	30.40	10.18	30.51	10.18	30.51	10.18	30.51	10.18	30.51	10.18	30.51	10.18	30.51	10.18	30.51	10.18
11	33.40	10.27	33.53	10.27	33.66	10.28	33.66	10.28	33.66	10.28	33.66	10.28	33.66	10.28	33.66	10.28	33.66	10.28
12	36.51	10.35	36.65	10.35	36.80	10.35	36.80	10.35	36.80	10.35	36.80	10.35	36.80	10.35	36.80	10.35	36.80	10.35
13	39.56	10.41	39.73	10.42	39.90	10.42	39.90	10.42	39.90	10.42	39.90	10.42	39.90	10.42	39.90	10.42	39.90	10.42
14	42.50	10.47	42.71	10.47	42.91	10.48	42.91	10.48	42.91	10.48	42.91	10.48	42.91	10.48	42.91	10.48	42.91	10.48
15	45.38	10.52	45.65	10.53	45.87	10.53	45.87	10.53	45.87	10.53	45.87	10.53	45.87	10.53	45.87	10.53	45.87	10.53
16	48.20	10.57	48.53	10.57	48.79	10.57	48.79	10.57	48.79	10.57	48.79	10.57	48.79	10.57	48.79	10.57	48.79	10.57
17	50.29	10.60	50.65	10.60	50.92	10.61	50.92	10.61	50.92	10.61	50.92	10.61	50.92	10.61	50.92	10.61	50.92	10.61
18	51.45	10.62	51.79	10.62	52.05	10.62	52.05	10.62	52.05	10.62	52.05	10.62	52.05	10.62	52.05	10.62	52.05	10.62
19	52.55	10.64	52.89	10.64	53.13	10.64	53.13	10.64	53.13	10.64	53.13	10.64	53.13	10.64	53.13	10.64	53.13	10.64
20	53.60	10.65	53.93	10.66	54.16	10.66	54.16	10.66	54.16	10.66	54.16	10.66	54.16	10.66	54.16	10.66	54.16	10.66
21	54.61	10.67	54.93	10.67	55.14	10.68	55.14	10.68	55.14	10.68	55.14	10.68	55.14	10.68	55.14	10.68	55.14	10.68
22	55.57	10.68	55.88	10.69	56.08	10.69	56.08	10.69	56.08	10.69	56.08	10.69	56.08	10.69	56.08	10.69	56.08	10.69
23	56.49	10.70	56.78	10.70	56.98	10.71	56.98	10.71	56.98	10.71	56.98	10.71	56.98	10.71	56.98	10.71	56.98	10.71
24	57.37	10.71	57.65	10.72	57.83	10.72	57.83	10.72	57.83	10.72	57.83	10.72	57.83	10.72	57.83	10.72	57.83	10.72
25	58.20	10.73	58.47	10.73	58.64	10.73	58.64	10.73	58.64	10.73	58.64	10.73	58.64	10.73	58.64	10.73	58.64	10.73

CO* Indicates the average emission levels without oxygenated fuels

B** Indicate the benefit factors

To interpolate the benefit factor the following formula should be used:

$$\text{BENFAC} = (\text{BEFADJ} * (\text{Y2} - \text{Y1}) + \text{X2} * \text{Y1} - \text{X1} * \text{Y2}) / (\text{X2} - \text{X1})$$

where: BEFADJ - basic emission factor

Y1, Y2 - lower and upper benefit factor

X1, X2 - lower and upper interpolation values

For Pre-1981 LDGV or

Pre-1991 LDGT1+2 or

HDGV or MC

where: BENFAC=NOCAT* 7.00+CAT* 9.97

NOCAT - fraction of vehicles that are not catalyst equipped

CAT - fraction of vehicles that are catalyst equipped

There is no effect on NOx.

For additional information see Table 3.13

"Exhaust Effects of Oxygenated Fuel Blends Percent of Change in Emissions"

DATE : JUNE 30, 1995

TABLE 3.13

REID VAPOR PRESSURE OF SUMMER TIME REFORMULATED GASOLINE

REGION	PHASE 1 (1995)	PHASE 1 (Complex Model 1997)	PHASE 2 (2000)
1	7.1	7.1	6.8
2	8.0	8.0	7.5

EXHAUST EFFECTS OF OXYGENATED FUEL BLENDS
PERCENT CHANGE IN EMISSIONS FOR
1985 AND EARLIER MODEL YEAR
LIGHT DUTY GASOLINE POWERED TRUCKS II

VEHICLE	HC	CO	NOx
Non catalyst	-1.57%	-7.00%	-0.00%
Open loop	-4.46%	-9.97%	-0.00%

EXHAUST EFFECTS OF OXYGENATED FUEL BLENDS
PERCENT CHANGE IN EMISSIONS PER PERCENT OF OXYGEN IN FUEL FOR
1986 AND LATER MODEL YEAR
LIGHT DUTY GASOLINE POWERED TRUCKS II
(CLOSED LOOP)

	FUEL SYSTEM	HC EMISSIONS		CO EMISSIONS	
		% CHANGE	g/mi*	% CHANGE	g/mi*
Normal Emitters	PFI	-4.01%	0.33	-3.46%	3.50
	TBI	-2.93%	0.38	-4.93%	3.72
	Carb	-6.15%	0.33	-6.77%	4.18
High Emitters	PFI	-5.78%	1.83	-9.87%	15.26
	TBI	-5.78%	1.83	-9.87%	15.26
	Carb	-6.59%	3.14	-9.87%	15.26
Very High Emitters	PFI	-6.59%	3.14	-11.44%	95.79
	TBI	-6.59%	3.14	-11.44%	95.79
	Carb	-6.59%	3.14	-11.44%	95.79

* These rates are for vehicles using EPA certification test fuel.

Note that oxygenates have no effect on NOx emissions.

ADDITIONAL EXHAUST HC REDUCTION FOR REFORMULATED GASOLINE FOR
LIGHT DUTY GASOLINE POWERED TRUCKS II
(APPLIED AFTER ADJUSTMENTS FOR RVP AND OXYGENATED FUEL EFFECTS)

REGION	PHASE1	PHASE2
1	1.051	1.720
2	1.044	1.693

PERCENT CHANGE IN EXHAUST EMISSIONS FROM INDUSTRY AVERAGE FUEL
WHEN USING EPA CERTIFICATION TEST FUEL

HC	CO	NOx
-13.6%	-8.0%	-13.8%

Continued on the next page

TABLE 3.13 (continued)

SEASONAL VARIATION IN REFORMULATED GASOLINE

Month	SUMMER*	WINTER**
	7	1
Ethanol Market Share	0.0%	30.0%
Ethanol Oxygen Content (by weight)	N/A	3.5%
Ether Blend Market Share	100.0%	70.0%
Ether Blend Oxygen Content	2.1%	1.5%
RVP Waiver	N/A	Yes
Fuel RVP	Fixed	User supplied

- * User supplied RVP and oxygenated fuel program parameters are ignored in summer when Reformulated Gasoline is specified.
- ** Default oxygenated fuel program parameters can be overridden by the user in winter if the market share for oxygenated fuels is 100% and the combined oxygen content is at least 2.1%

REFORMULATED GASOLINE
ASSUMED COMPLEX MODEL PARAMETERS

	BASELINE INDUSTRY AVERAGE	-----PHASE 1----- REGION 1	-----PHASE 1----- REGION 2	-----PHASE 2----- REGION 1	-----PHASE 2----- REGION 2
MTBE*	0.00	2.10	2.10	2.10	2.10
ETBE*	0.00	0.00	0.00	0.00	0.00
Ethanol*	0.00	0.00	0.00	0.00	0.00
TAME*	0.00	0.00	0.00	0.00	0.00
SULFUR (ppm)	339.00	339.00	339.00	134.00	134.00
RVP (psi)	8.70	7.10	8.00	6.70	6.70
E200 (%)	41.00	41.00	41.00	44.44	44.44
E300 (%)	83.00	83.00	83.00	84.91	84.91
Aromatics**	32.00	27.20	25.50	24.79	24.79
Olefins**	9.20	9.20	9.20	12.56	12.56
Benzene**	1.53	0.95	0.95	0.95	0.95

- * Percent fuel oxygen content by weight.
- ** Percent fuel content by volume.

DATE : JUNE 30, 1995