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16. Abstract The passage of the 1990 Clean Air Act Amendments (CAAA) has resulted in several Texas urban areas being declared nonattainment areas. Several other areas need to take actions to maintain current air quality levels to avoid being declared nonattainment. Many of these areas are considering transportation-related strategies to reduce emissions. This project quantifies on-road mobile source emissions within the four most populous border counties (Cameron, El Paso, Hidalgo, and Webb) and evaluates the contribution of Mexican vehicles to the overall emission levels. Information is also provided on the impacts of delay and idling at the international bridges. This information will assist in developing strategies to reduce or limit the growth of on-road mobile source emissions through transportation projects and programs.			
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**HIGHWAY AND VEHICLE POLLUTANT LEVELS
ALONG TEXAS BORDER TOWNS**

by

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Research Report 2997-S
Research Study Number 7-2997
Research Study Title: Highway and Vehicle Pollutant
Levels Along Texas Border Towns

Sponsored by the
Texas Department of Transportation

November 1997

TEXAS TRANSPORTATION INSTITUTE
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IMPLEMENTATION STATEMENT

The research documented in this summary report provides information to the Texas Department of Transportation (TxDOT) on the impacts of Mexican vehicle traffic on on-road mobile source emissions within selected border counties. This information will allow TxDOT to be proactive in identifying potential transportation projects and programs that will help to reduce or control the growth of on-road mobile source emissions within these counties. In addition, this information will help evaluate the potential of Texas border counties to become nonattainment areas.

DISCLAIMER

The contents of this report reflect the views of the author. The contents do not necessarily reflect the official views or policies of the Texas Department of Transportation or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation. In addition, this report is not intended for construction, bidding, or permit purposes. George B. Dresser, Ph.D., was the Principal Investigator for the project.

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SUMMARY

The passage of the 1990 Clean Air Act Amendments (CAAA) has resulted in several Texas urban areas being declared nonattainment areas. Several other areas need to take actions to maintain current air quality levels to avoid being declared nonattainment. Many of these areas are considering transportation-related strategies to reduce emissions. This project quantifies on-road mobile source emissions within the four most populous border counties (Cameron, El Paso, Hidalgo, and Webb) and evaluates the contribution of Mexican vehicles to the overall emission levels. Information is also provided on the impacts of delay and idling at the international bridges. This information will assist in developing strategies to reduce or limit the growth of on-road mobile source emissions through transportation projects and programs.

LITERATURE REVIEW

Most of the literature relating to border area pollution focuses on the potential impacts of increased trade on traffic and infrastructure in Texas. This focus notwithstanding, the literature falls into three distinct areas:

- laws, treaties, and international agreements applicable to the border area,
- reports discussing border-related trade and transportation issues, and
- reports discussing proposed data collection and emissions estimation methods.

Telephone Interviews: The formal literature review was supplemented with telephone interviews of agencies and organizations with prior experience and/or interest in border air quality issues. Officials at the California Air Resources Board, Imperial County Air Pollution District, San Diego County Air Pollution Control District, New Mexico Air Quality Bureau, and Arizona Department of Environmental Quality were contacted regarding any possible studies their agencies had completed on emissions from Mexican vehicles within the U.S. None of the officials contacted were aware of any studies their agency had completed on this subject. The only potential lead was one California official who said his agency might begin a project in the fall which could be relevant. In fact, some stated the only study of which they were aware was TTI's 1994 Ciudad Juarez study.

TNRCC CAMS Data: As part of the literature review, Continuous Air Monitoring System (CAMS) summary data were identified and assembled from the existing monitoring stations in the four border counties (Cameron, El Paso, Hidalgo, and Webb) for O₃, CO, and PM₁₀. The Laredo station has been in operation for approximately six months only. While there are no plans for additional monitoring stations at this time, the most likely location for additional stations is in the Del Rio area.

Border Advisory Groups: Border advisory groups were identified as part of the literature review. TxDOT's involvement in international activities (i.e., U.S.–Mexico) has increased dramatically in recent years, largely in response to NAFTA and related agreements. This involvement is coordinated through TxDOT's International Relations Office (IRO). TxDOT is

currently involved in a wide range of advisory committees relating to border issues. Some of these are listed below. Depending upon the nature of the particular air quality, any of these existing participatory relationships could be an appropriate venue for addressing border air quality issues. This investigation produced no advisory groups that did not have some form of TxDOT participation or representation.

Existing advisory committees and groups concerned with border issues include:

- Border Transportation State Technical Advisory Committees
- Land Transportation Standards Subcommittee (LTSS)
- Border Technology Exchange Program (BTEP)
- Binational Conference on Bridges and Border Crossings
- Border Governor's Conference
- Southwest Border Transportation Alliance (SWBTA)
- TxDOT Standing Committee on Border Affairs

On the Mexican side the situation is even more complex. There are several key federal level organizations whose interests include border air quality issues. Foremost among these is the Secretariat of Foreign Relations (Secretaria de Relaciones Exteriores) which participates in the planning, construction, and operation of international bridges and border crossings. The Secretariat of Social Development (Secretaria de Desarrollo Social) sets standards in urban infrastructure planning and design. These and other federal agencies participate in the transportation planning process through interagency committees focusing on the solution of short-term problems. Foremost is the Interagency Group on Ports of Entry and Border Services, which is part of the Secretariat of Foreign Relations.

At the state level, the state transportation agencies function as intermediaries between strategic federal interests and the needs of the municipalities. Such organizations are typically known as Directorates or Secretariats of Communication and Public Works. Priorities vary with the concerns of the states and their municipalities.

Municipal administrations last for only three years, so municipal level agencies are concerned with addressing specific near-term objectives. As at the state level, the specific details vary by municipality.

From the Mexican perspective, opportunities for coordination on border air quality issues

will vary with the local situation. No permanent “standing” advisory groups apart from those affiliated with the federal or state governments (or those in which TxDOT already participates cited above) were identified.

VEHICLE DATA AND EMISSIONS

Mexican vehicle operations within selected Texas border counties were characterized in terms of vehicle miles traveled (VMT), speed, VMT mix, fleet composition, operating mode fractions, and annual mileage accumulation. The data collected or compiled are listed below:

- VMT (HPMS records)
- VMT mix (fleet composition from county registration data and field data)
- Speed (El Paso County survey data)
- Operating mode fractions (El Paso travel survey data and EPA defaults)
- Annual mileage accumulation (EPA defaults)

Each is discussed separately, however, VMT from HPMS records is input into the VMT mix data collection, so these are discussed together.

VMT and VMT Mix: Of the four border counties (Cameron, El Paso, Hidalgo, and Webb), Webb County (Laredo) is the largest and most active. This location was chosen for the field data collection. The data collection focused on two aspects of border county traffic. The first area of interest is the mix of U.S. to Mexican vehicles for each of the various roadway functional classifications. The second aspect of border county traffic is the vehicle type mix of the Mexican vehicles, again for each of the roadway functional classifications. The actual data collection was guided by a sampling plan of 24 sites which included the full range of roadway functional classifications. Four teams were assigned to survey these 24 sites. Each site was simultaneously monitored for vehicle registration (U.S. versus Mexican) and Mexican vehicle type. The Mexican vehicles were classified into the 13 FHWA vehicle classification categories (for subsequent conversion into the eight EPA categories). All counts and classifications were manual. Sites were surveyed during the peak period as well as during the off-peak period. VMT by roadway functional classification was the basis for the sampling plan and subsequent data collection.

Table 1 shows the distribution of vehicle registration by functional classification, as well as aggregated across all classifications. The distribution of Mexican-registered vehicles varies substantially by roadway functional classification. Overall the distribution is approximately 10%.

**TABLE 1
DISTRIBUTION OF VEHICLE REGISTRATION
BY FUNCTIONAL CLASSIFICATION**

FUNCTIONAL CLASSIFICATION	TOTAL VEHICLES	MEXICAN PROPORTION
Rural Collector	3,824	0.192
Rural Interstate	749	0.064
Rural Principal Arterial	7,632	0.075
Urban Collector	9,939	0.077
Urban Interstate	10,061	0.214
Urban Local	1,147	0.029
Urban Principal Arterial	30,966	0.056
All Functional Classifications	64,318	0.094

Table 2 shows the distribution of vehicle type for Mexican vehicles by roadway functional classification, as well as the aggregate distribution of vehicle type for all the Mexican vehicles. Note that tractors without trailers (“bobtails”) are very common in Laredo. Since these are functionally semi-trucks, they are included with heavy duty vehicles. At some sites they comprise as much as 17% of the Mexican vehicles. For some roadway functional classifications they constitute 15% of the Mexican vehicles (i.e., several sites of the same classification).

**TABLE 2
DISTRIBUTION OF MEXICAN VEHICLE TYPE
BY FUNCTIONAL CLASSIFICATION**

FUNCTIONAL CLASSIFICATION	MEXICAN VEHICLES	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Rural Collector	734	0.172	0.155	0.036	0.130	0.001	0.002	0.504	0.000
Rural Interstate	49	0.385	0.253	0.074	0.058	0.003	0.003	0.224	0.000
Rural Principal Arterial	574	0.410	0.423	0.052	0.022	0.003	0.005	0.084	0.002
Urban Collector	759	0.271	0.242	0.045	0.090	0.002	0.003	0.348	0.000
Urban Interstate	2,175	0.418	0.272	0.038	0.054	0.003	0.003	0.210	0.001
Urban Local	33	0.451	0.484	0.056	0.000	0.003	0.005	0.000	0.000
Urban Principal Arterial	1,740	0.400	0.294	0.043	0.053	0.003	0.003	0.205	0.000
All Functional Classifications	6,064	0.364	0.276	0.042	0.064	0.003	0.003	0.248	0.001

A site-specific distribution of Mexican vehicle type is included as Table 3.

**TABLE 3
DISTRIBUTION OF MEXICAN VEHICLE TYPE
BY DATA COLLECTION SITE**

SITE	TOTAL	LDGV	LDGT1	LDGT2	HOGV	LDDV	LDDT	HDDV	MC
1	140	0.482	0.431	0.056	0.005	0.003	0.005	0.018	0.000
2	169	0.476	0.320	0.047	0.031	0.003	0.004	0.119	0.000
3	503	0.385	0.273	0.040	0.061	0.003	0.003	0.235	0.000
4	366	0.187	0.170	0.047	0.122	0.001	0.002	0.471	0.000
5	198	0.150	0.166	0.030	0.133	0.001	0.002	0.517	0.000
6	140	0.525	0.399	0.046	0.004	0.004	0.004	0.017	0.000
7	21	0.331	0.296	0.034	0.068	0.002	0.003	0.265	0.000
8	246	0.456	0.353	0.042	0.029	0.003	0.004	0.112	0.000
9	80	0.186	0.299	0.042	0.096	0.001	0.003	0.372	0.000
10	392	0.456	0.453	0.054	0.006	0.003	0.005	0.023	0.000
11	24	0.621	0.296	0.043	0.007	0.004	0.003	0.027	0.000
12	130	0.412	0.300	0.035	0.050	0.003	0.003	0.196	0.000
13	191	0.587	0.325	0.038	0.009	0.004	0.004	0.033	0.000
14	99	0.532	0.403	0.049	0.002	0.004	0.004	0.006	0.000
15	68	0.599	0.352	0.041	0.000	0.004	0.004	0.000	0.000
16	396	0.048	0.137	0.044	0.158	0.000	0.002	0.612	0.000
17	81	0.429	0.438	0.053	0.012	0.003	0.005	0.047	0.012
18	625	0.421	0.285	0.047	0.049	0.003	0.003	0.192	0.000
19	1,550	0.417	0.267	0.035	0.056	0.003	0.003	0.217	0.002
20	49	0.385	0.253	0.074	0.058	0.003	0.003	0.224	0.000
21	536	0.180	0.151	0.039	0.129	0.001	0.002	0.499	0.000
22	27	0.478	0.427	0.050	0.008	0.003	0.005	0.029	0.000
23	27	0.405	0.526	0.061	0.000	0.003	0.006	0.000	0.000
24	6	0.662	0.296	0.034	0.000	0.005	0.003	0.000	0.000

Data were collected Monday–Thursday. In addition, data were collected on Friday at four control sites to determine if day-of-week was a significant factor in either the registration distribution or on Mexican vehicle mix. The four control sites included one of each of the four urban roadway functional classifications. While in most cases these samples are too small to perform formal statistical tests of the difference, it is clear from a comparison of the two days that day-of-week is not a significant factor.

Speed: Speed data by functional classification were produced as part of the El Paso County travel forecast. For use in this study, these data were re-aggregated into the set of roadway functional classifications used for the Laredo data, weighted by daily VMT. Table 4 shows estimates of El Paso County average speed by roadway functional classification by time period (AM peak, off peak, and PM peak).

**TABLE 4
EL PASO COUNTY AVERAGE SPEED BY COMBINED URBAN & RURAL
ROADWAY FUNCTIONAL CLASSIFICATION**

	AM Peak	Midday	PM Peak	Overnight	All Times
Interstate	39.5	51.8	41.9	54.2	49.6
Principal Arterial	18.4	26.8	20.5	28.5	25.2
Min Art / Collector	23.8	25.5	22.0	26.2	24.8
Local	29.0	29.0	29.0	29.0	29.0
Other	28.9	35.5	28.6	33.6	34.0
All Classes	25.1	33.9	27.2	35.5	32.3

Operating Mode Fractions: Similarly, in the absence of county specific data, operating mode fractions are believed to be generally transferable between border counties. There are two sources for operating mode fractions. Table 5 shows El Paso County operating mode fraction of VMT from the El Paso County survey. Table 6 shows EPA MOBILE5a default operating fractions of VMT from the federal test procedure.

**TABLE 5
EL PASO COUNTY OPERATING MODE FRACTIONS
(El Paso County Survey)**

	Cold Starts	Hot Starts	Hot Stabilized
Catalytic Converter Vehicles	31.3%	13.8%	54.9%
Non-Catalytic Converter Vehicles	23.5%	17.4%	59.1%
All Vehicles	30.9%	14.0%	55.1%

In the El Paso County travel survey, operating mode is a function of travel time. Specifically, trips of less than or equal to 505 seconds are treated as cold starts. Trips of more

than 505 seconds are treated as hot stabilized. Trips with less than a one hour stop period are treated as hot starts.

**TABLE 6
EL PASO COUNTY OPERATING MODE FRACTIONS
(Federal Test Procedure)**

	Cold Starts	Hot Starts	Hot Stabilized
Catalytic Converter Vehicles	20.6%	27.3%	52.1%
Non-Catalytic Converter Vehicles	20.6%	27.3%	52.1%
All Vehicles	20.6%	27.3%	52.1%

The federal test procedure operating mode fractions for El Paso County were used for all four border county emissions inventory estimates. This decision was based on concerns about consistency and generalizability, as well as the relative scarcity of travel survey data for this aspect of vehicle operation and drive cycle behavior. Specifically, the travel survey based estimates assume that travel time equates to VMT uniformly throughout the trip, potentially over-representing cold start VMT. The federal procedure, on the other hand, shows substantially more hot start time in the drive cycle, implying more trips of shorter duration (and presumably shorter distance).

Annual Mileage Accumulation: Table 7 shows the EPA MOBILE5a default 25 year annual mileage accumulation by EPA vehicle classification. This default mileage accumulation distribution was used for all four border county emissions inventory estimates.

TABLE 7
25-YEAR ANNUAL MILEAGE ACCUMULATION
BY EPA VEHICLE CLASSIFICATION
(EPA MOBILEa Defaults)

LDGV									
0.14390	0.13612	0.12875	0.12180	0.11522	0.10899	0.10310	0.09751	0.09225	0.08726
0.08254	0.07807	0.07386	0.06987	0.06608	0.06251	0.05913	0.05594	0.05291	0.05005
0.04735	0.04478	0.04237	0.04007	0.03790					
LDGT1									
0.15442	0.14508	0.13631	0.12807	0.12032	0.11305	0.10621	0.09979	0.09376	0.08809
0.08276	0.07776	0.07306	0.06864	0.06449	0.06059	0.05693	0.05348	0.05025	0.04721
0.04436	0.04168	0.03916	0.03679	0.03456					
LDGT2									
0.14779	0.14259	0.13758	0.13275	0.12809	0.12359	0.11924	0.11505	0.11101	0.10711
0.10335	0.09972	0.09621	0.09283	0.08957	0.08642	0.08339	0.08046	0.07763	0.07490
0.07227	0.06973	0.06728	0.06492	0.06264					
HDGV									
0.17251	0.16185	0.15185	0.14246	0.13365	0.12539	0.11764	0.11037	0.10355	0.09715
0.09114	0.08551	0.08022	0.07526	0.07061	0.06625	0.06215	0.05831	0.05471	0.05132
0.04815	0.04517	0.04238	0.03976	0.03730					
LDDV									
0.17825	0.16478	0.15233	0.14081	0.13017	0.12033	0.11124	0.10283	0.09506	0.08788
0.08123	0.07509	0.06942	0.06417	0.05932	0.05484	0.05069	0.04686	0.04332	0.04005
0.03702	0.03422	0.03163	0.02924	0.02703					
LDDT									
0.21004	0.19125	0.17415	0.15858	0.14440	0.13149	0.11973	0.10902	0.09927	0.09040
0.08231	0.07495	0.06825	0.06215	0.05659	0.05153	0.04692	0.04272	0.03890	0.03543
0.03226	0.02937	0.02675	0.02435	0.02218					
HDDV									
0.35953	0.33650	0.31522	0.29553	0.27729	0.26038	0.24469	0.23011	0.21656	0.20394
0.19218	0.18122	0.17099	0.16143	0.15249	0.14412	0.13629	0.12896	0.12207	0.11561
0.10954	0.10383	0.09847	0.09341	0.08865					
MC									
0.04786	0.04475	0.04164	0.03853	0.03543	0.03232	0.02921	0.02611	0.02300	0.01989
0.01678	0.01368	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
0.00000	0.00000	0.00000	0.00000	0.00000					

Emission Inventories: Emission inventories were prepared for Cameron, El Paso, Hidalgo, and Webb counties for both U.S. and Mexican vehicles. A simplified nonlink based method is used to estimate the emissions for these counties. This nonlink based method uses HPMS generated VMT and locally derived vehicle classification distribution data (VMT mix), along with the speed estimation procedure discussed below, as input to the Mobile emissions estimating process. This method was validated against the link based emission estimates for El Paso

County. The impact of using the simplified (HPMS based) method is a less than 3% difference in total VOC and NOx and 11% in CO. (The relatively greater difference in CO between the two methods is believed to be due to fewer measures of temperature and the resulting lack of variation in temperatures in the nonlink method.)

Mexican vehicles make up only about 10% of the total traffic. However, Mexican vehicles contribute disproportionately to emissions. This is due primarily to the difference in the fleet mix (see Table 9). The Mexican fleet operating in U.S. border counties contains a much greater proportion of trucks (HDDV, HDGV, and LDCT2). This relationship is best illustrated graphically. Figures 1 through 4 show this relationship. Figure 1 shows the Mexican versus U.S. fleet mix divided into trucks (HDDV, HDGV, and LDGT2) and cars for Webb County. Note the relatively high proportion of Mexican trucks. Figures 2 through 4 show the impact of this combined fleet mix (Mexican versus U.S. fleet) on total emissions for Webb County. The massive contribution of Mexican vehicles to the NOx emissions (10% of the vehicles contributing over 23% of the NOx) is due to the high proportion of trucks (especially HDDV) in the Mexican fleet.

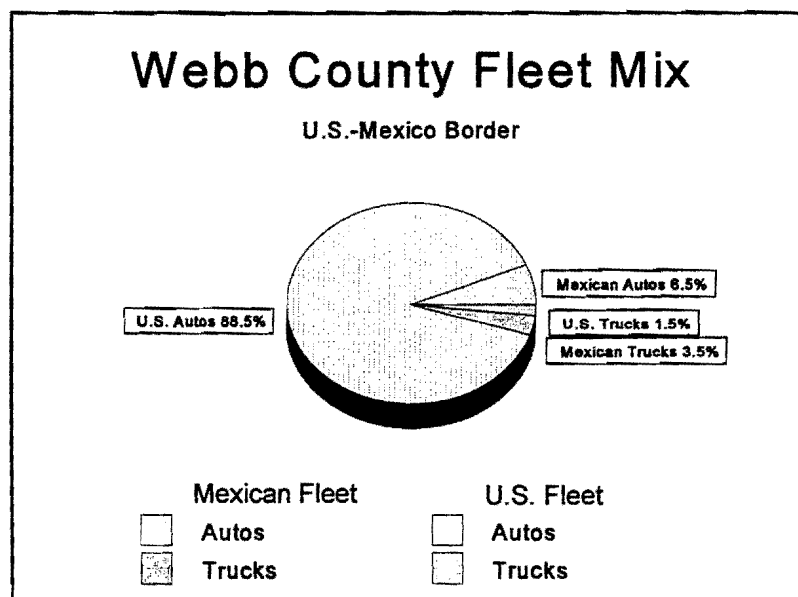


FIGURE 1. WEBB COUNTY FLEET MIX

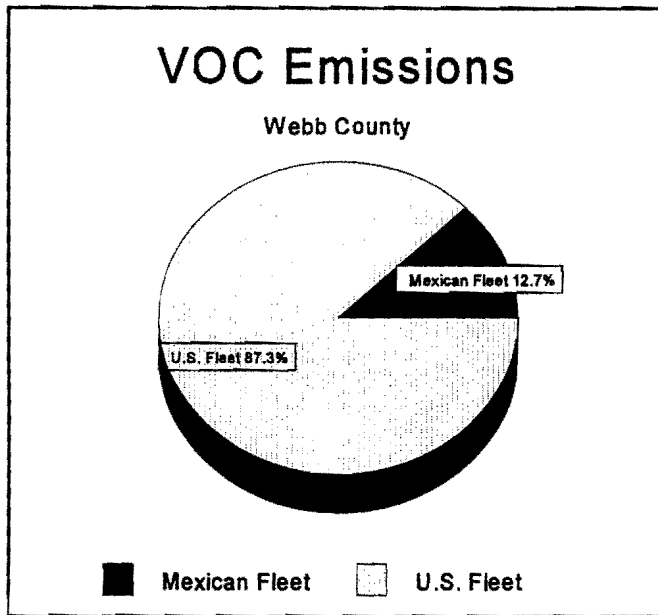


FIGURE 2. WEBB COUNTY VOC EMISSIONS

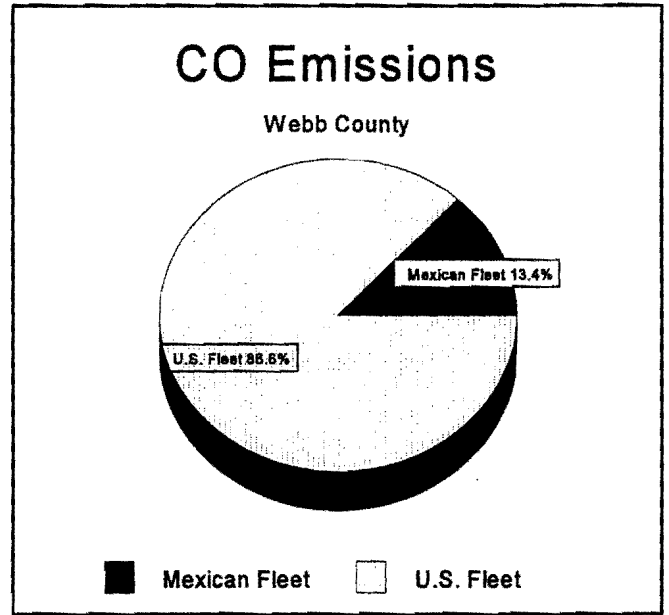


FIGURE 3. WEBB COUNTY CO EMISSIONS

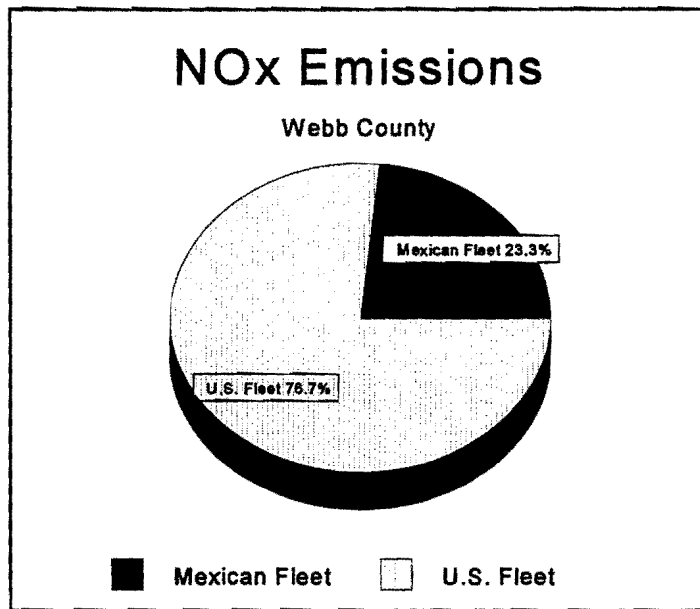


FIGURE 4. WEBB COUNTY NOX EMISSIONS

Emissions are a function of vehicle type, VMT, and speed. Speed itself is a function of roadway classification and capacity. The development of the vehicle type estimates (including the distribution of vehicle registration) and VMT was discussed above. Speed estimates were developed for this task using the hourly capacities by roadway functional classification, freeflow

NCTCOG for Dallas/Fort Worth and used for El Paso County (TTI Research Report 1375-5) and JOHRTS (TTI Research Report 1375-6). Speed estimates were developed using the total VMT for both U. S. registered vehicles and Mexican registered vehicles. U.S. fleet VMT mix is based on vehicle registration data for each county which were developed as reported above. Mexican fleet VMT mix is based on the Laredo field data collected and reported above. Speeds and capacities were combined (averaged) to fit the combined roadway functional classifications. The aggregate VMT from HPMS is split into four time periods (1 hour, 8.5 hours, 1 hour, and 13.5 hours) using the defaults contained in the speed model. HPMS VMT data are allocated to those time periods again using the defaults contained in the model (0.1069, 0.5033, 0.1018, and 0.2880). The four time periods correspond to the AM peak (7:15 a.m. - 8:15 a.m.), midday (8:15 a.m. - 4:45 p.m.), the PM peak (4:45 p.m. - 5:45 p.m.), and overnight (5:45 p.m. - 7:15 a.m.). The time periods are aggregated to produce a single emission estimate for a typical day (HPMS is AADT) which is made to represent a summer day by the temperature inputs to MOBILE5a and Mobile Juarez. Directional split (60/40) is also determined by the model defaults.

The directional delay (in minutes per mile) due to congestion is computed using a volume-delay equation. The following is the general form of the volume-delay equation used in the model:

$$Delay = Min [A e^{B(\frac{V}{C})}, M]$$

Where:

Delay	=	Congestion delay (in minutes/mile)
A & B	=	Volume-delay equation coefficients
M	=	Maximum minutes of delay per mile
V/C	=	Time-of-day directional V/C ratio

The delay model parameters (A, B, and M) developed for JOHRTS and El Paso were used for this analysis. These parameters are as follows (Table 8):

TABLE 8
VOLUME DELAY EQUATION PARAMETERS BY FUNCTIONAL CLASSIFICATION
(Rural and Urban)

Functional Classification	A	B	M
Interstate	0.015	3.5	5.0
Principal Arterial	0.050	3.0	10.0
Min Art / Collector	0.050	3.0	10.0
Local	0.050	3.0	10.0

Given the estimated directional delay (in minutes/mile) and the estimated freeflow speed, the directional congested speed is computed as follows:

$$\text{Congested speed} = \frac{60}{\frac{60}{\text{Freeflow speed}} + \text{Delay}}$$

Emission rates and 24-hour emissions are estimated using MOBILE5a and Mobile Juarez. VMT mix is shown for each county and the Mexican fleet (Table 9), along with VMT, vehicle hours (VH), and weighted operational speed (MPH). (See Table 10.)

The distribution of Mexican vehicle types (a surrogate for VMT mix) is based on field data collected for this study. Mexican vehicle emissions are estimated by a modified version of MOBILE5a (Mobile Juarez) developed by Radian International for Ciudad Juarez. Mobile Juarez is a modified version of MOBILE5a which recognizes the differences between the U.S. fleet and the Mexican fleet. These differences include fleet age (the Mexican fleet is generally older), the higher emission levels of the Mexican fleet (this is especially large for El Paso which has a motorists choice inspection/maintenance program in place), and the fleet mix itself (which is input from the Laredo field data and reflects the higher proportion of heavy duty trucks in the Mexican fleet). Individual Mexican vehicles in El Paso, for example, emit over three times the pollutants as comparable U.S. vehicles. The differences are less in the other border counties but are still substantial.

Emissions are summarized for each of the four counties (Cameron, El Paso, Hidalgo, and Webb), for the three primary pollutants (VOC, CO, and NOx) for U.S. vehicles and Mexican vehicles. Tables 11 through 16 cover Cameron County. Tables 17 through 22 cover El Paso County. Tables 23 through 28 cover Hidalgo County. Tables 29 through 34 cover Webb County. (See Appendix A for the MOBILE5a setup used to develop the emission standards.)

**TABLE 9
BORDER COUNTY EPA VEHICLE CATEGORY DISTRIBUTION
FOR U. S. REGISTERED VEHICLES BY COUNTY
AND MEXICAN REGISTERED VEHICLES**

COUNTY	EPA VEHICLE CLASSIFICATION							
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Cameron	0.719	0.257	0.004	0.003	0.005	0.004	0.003	0.006
El Paso	0.741	0.233	0.003	0.003	0.005	0.003	0.002	0.009
Hidalgo	0.683	0.289	0.005	0.005	0.005	0.004	0.004	0.005
Webb	0.650	0.320	0.007	0.005	0.005	0.005	0.005	0.004
MEXICAN REGISTERED VEHICLES								
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Mexico	0.364	0.276	0.042	0.064	0.003	0.003	0.248	0.001

**TABLE 10
BORDER COUNTY VEHICLE MILES TRAVELED,
VEHICLE HOURS, AND SPEED BY COUNTY**

County	VMT	VH	MPH
Cameron	5,183,418	147,059	35.2
El Paso	11,996,804	338,035	35.5
Hidalgo	8,890,664	255,990	34.7
Webb	2,540,792	72,120	35.2

TABLE 11
CAMERON COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF VOC POLLUTION									
TEXAS VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RURAL PRINC ART	3167.4	1432.9	29.8	51.0	4.6	5.4	9.0	101.6	4801.7
RURAL COLLECTOR	2380.4	1051.5	21.9	37.0	3.5	4.1	6.9	68.8	3574.2
RURAL LOCAL	429.4	187.1	3.9	6.6	0.7	0.8	1.3	11.1	640.8
URBAN INTERSTATE	1398.5	652.3	13.6	22.4	1.9	2.2	3.7	48.8	2143.4
URBAN PRINC ART	3847.2	1686.6	35.2	59.3	5.8	6.8	11.3	105.3	5757.5
URBAN COLLECTOR	3358.1	1461.6	30.5	51.5	5.2	6.1	10.1	86.2	5009.3
URBAN LOCAL	2452.9	1068.4	22.3	37.6	3.8	4.4	7.3	63.5	3660.2
TOTALS	17034.0	7540.3	157.2	265.3	25.5	29.9	49.5	485.3	25587.1

TABLE 12
CAMERON COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF CO POLLUTION									
TEXAS VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RURAL PRINC ART	24025.3	11077.8	212.6	521.8	9.6	8.9	40.8	159.9	36056.7
RURAL COLLECTOR	18156.2	8248.9	160.5	372.3	7.1	6.6	30.2	127.9	27109.8
RURAL LOCAL	3332.7	1509.8	29.7	69.4	1.3	1.3	5.7	25.5	4975.5
URBAN INTERSTATE	11964.9	5751.7	111.0	285.3	4.7	4.4	20.0	83.7	18225.7
URBAN PRINC ART	29594.5	13419.4	262.7	609.9	11.7	10.9	50.0	217.9	44176.9
URBAN COLLECTOR	26123.3	11830.7	233.0	546.8	10.6	9.8	45.2	201.7	39001.0
URBAN LOCAL	19048.7	8628.9	169.8	397.3	7.7	7.2	32.8	146.2	28438.6
TOTALS	132245.6	60467.0	1179.3	2802.9	52.6	49.0	224.8	962.8	197984.2

TABLE 13
CAMERON COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF NOX POLLUTION									
TEXAS VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RURAL PRINC ART	3467.6	1426.3	24.7	44.6	17.2	16.1	92.1	13.8	5102.4
RURAL COLLECTOR	2260.8	927.4	16.0	27.9	10.7	10.0	57.2	8.7	3318.8
RURAL LOCAL	346.9	141.5	2.4	4.1	1.7	1.6	9.0	1.3	508.5
URBAN INTERSTATE	2177.2	906.5	16.0	23.3	10.9	10.2	58.1	8.5	3210.5
URBAN PRINC ART	3370.8	1379.2	23.8	40.9	16.1	15.1	86.2	12.6	4944.7
URBAN COLLECTOR	2668.3	1087.7	18.7	31.7	13.1	12.3	70.0	9.6	3911.3
URBAN LOCAL	1973.7	805.0	13.9	23.5	9.6	9.0	51.5	7.1	2893.4
TOTALS	16265.2	6673.5	115.5	196.1	79.3	74.2	424.3	61.6	23889.7

TABLE 14
CAMERON COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF VOC POLLUTION									
MEXICAN VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RURAL PRINC ART	225.3	275.6	52.1	41.7	0.2	0.4	23.2	2.8	621.2
RURAL COLLECTOR	207.7	216.4	76.8	524.1	0.1	0.3	312.4	0.0	1337.9
RURAL LOCAL	12.4	15.1	2.6	0.0	0.0	0.0	0.0	0.0	30.1
URBAN INTERSTATE	350.1	276.1	59.1	151.2	0.2	0.3	80.8	2.3	920.1
URBAN PRINC ART	194.7	164.0	36.5	85.5	0.2	0.2	52.1	0.0	533.1
URBAN COLLECTOR	162.0	164.2	46.2	177.4	0.1	0.3	110.7	0.0	660.8
URBAN LOCAL	70.6	86.1	15.1	0.0	0.1	0.1	0.0	0.0	172.0
TOTALS	1222.9	1197.6	288.4	979.8	0.9	1.6	579.1	5.1	4275.3

TABLE 15
CAMERON COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

ROADWAY TYPE	POUNDS OF CO POLLUTION MEXICAN VEHICLES VEHICLE TYPE								MC	TOTALS
	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV			
RURAL INTERSTATE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RURAL PRINC ART	2065.6	2162.2	305.1	402.3	0.4	0.8	99.0	4.3	5039.7	
RURAL COLLECTOR	1887.4	1701.1	465.7	4977.8	0.3	0.7	1291.7	0.0	10324.6	
RURAL LOCAL	112.2	120.4	16.8	0.0	0.0	0.0	0.0	0.0	249.5	
URBAN INTERSTATE	3674.7	2503.9	398.5	1816.9	0.7	0.7	408.2	3.8	8807.5	
URBAN PRINC ART	1768.0	1298.5	226.7	828.9	0.4	0.4	216.7	0.0	4339.5	
URBAN COLLECTOR	1471.4	1313.1	295.4	1773.4	0.3	0.5	466.7	0.0	5320.8	
URBAN LOCAL	641.2	687.8	96.1	0.0	0.1	0.2	0.0	0.0	1425.4	
TOTALS	11620.6	9786.9	1804.3	9799.3	2.1	3.3	2482.2	8.1	35507.0	

TABLE 16
CAMERON COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

ROADWAY TYPE	POUNDS OF NOX POLLUTION MEXICAN VEHICLES VEHICLE TYPE								MC	TOTALS
	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV			
RURAL INTERSTATE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RURAL PRINC ART	188.4	234.2	31.5	28.5	0.6	1.2	253.7	0.4	738.5	
RURAL COLLECTOR	150.6	162.1	41.2	309.8	0.4	0.9	2773.1	0.0	3438.0	
RURAL LOCAL	7.6	9.6	1.2	0.0	0.0	0.0	0.0	0.0	18.5	
URBAN INTERSTATE	421.8	326.7	50.8	123.0	1.3	1.5	1345.2	0.4	2270.6	
URBAN PRINC ART	130.2	113.5	18.2	46.2	0.4	0.5	423.9	0.0	732.8	
URBAN COLLECTOR	98.2	102.9	21.0	85.5	0.3	0.6	821.7	0.0	1130.2	
URBAN LOCAL	43.4	54.7	6.9	0.0	0.1	0.2	0.0	0.0	105.4	
TOTALS	1040.2	1003.7	170.8	593.0	3.1	4.9	5617.5	0.8	8434.0	

TABLE 17
EL PASO COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF VOC POLLUTION										
TEXAS VEHICLES										
VEHICLE TYPE										
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS	
RURAL INTERSTATE	933.9	371.9	6.6	13.0	2.0	1.7	2.5	64.9	1396.4	
RURAL PRINC ART	277.7	107.5	1.9	4.0	0.6	0.5	0.8	18.1	411.2	
RURAL COLLECTOR	677.8	254.4	4.5	9.3	1.6	1.3	2.0	39.0	989.8	
RURAL LOCAL	205.8	76.1	1.3	2.8	0.5	0.4	0.6	10.6	298.2	
URBAN INTERSTATE	4834.7	1912.6	33.5	69.6	10.6	9.1	13.7	338.3	7222.1	
URBAN PRINC ART	7283.5	2710.9	47.5	99.1	17.1	14.6	22.0	395.1	10589.9	
URBAN COLLECTOR	6061.3	2240.6	39.2	82.1	14.5	12.3	18.6	310.1	8778.7	
URBAN LOCAL	5053.4	1869.3	32.7	68.4	12.0	10.3	15.5	260.5	7322.1	
TOTALS	25328.0	9543.2	167.3	348.3	58.9	50.3	75.9	1436.8	37008.5	

TABLE 18
EL PASO COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF CO POLLUTION										
TEXAS VEHICLES										
VEHICLE TYPE										
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS	
RURAL INTERSTATE	7005.5	3074.2	56.3	157.3	4.9	3.4	13.8	140.1	10455.5	
RURAL PRINC ART	1781.4	748.7	13.5	38.3	1.3	0.9	3.7	32.5	2620.4	
RURAL COLLECTOR	4441.6	1827.3	32.1	87.0	3.1	2.2	8.9	84.4	6486.6	
RURAL LOCAL	1400.0	572.4	9.8	27.2	1.0	0.7	2.8	28.2	2042.0	
URBAN INTERSTATE	32359.8	13882.0	251.2	792.4	25.1	17.4	71.3	602.6	48001.7	
URBAN PRINC ART	48729.5	19967.7	345.1	948.0	34.5	23.9	97.8	956.5	71103.0	
URBAN COLLECTOR	41427.9	16927.3	287.4	806.3	29.6	20.4	83.8	838.3	60421.0	
URBAN LOCAL	34428.1	14073.8	239.5	668.9	24.5	17.0	69.5	694.2	50215.5	
TOTALS	171573.8	71073.4	1235.0	3525.4	124.0	85.8	351.5	3376.8	251345.7	

TABLE 19
EL PASO COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF NOX POLLUTION									
TEXAS VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	1799.1	651.3	10.8	22.9	11.2	7.7	39.9	13.4	2556.5
RURAL PRINC ART	385.8	137.6	2.3	6.0	2.4	1.7	8.5	2.9	547.1
RURAL COLLECTOR	793.0	282.6	4.6	11.7	4.7	3.2	16.6	5.8	1122.2
RURAL LOCAL	204.3	72.6	1.2	2.9	1.2	0.9	4.4	1.4	288.9
URBAN INTERSTATE	8866.1	3198.7	53.1	119.4	55.5	38.3	197.3	66.5	12594.9
URBAN PRINC ART	7795.2	2773.4	45.3	113.2	46.4	32.0	165.0	55.2	11025.6
URBAN COLLECTOR	5913.2	2099.1	34.2	84.2	36.0	24.9	128.1	40.3	8360.1
URBAN LOCAL	4990.0	1772.0	28.9	71.2	30.2	20.9	107.6	34.2	7055.0
TOTALS	30746.9	10987.5	180.4	431.5	187.6	129.5	667.4	219.7	43550.5

TABLE 20
EL PASO COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF VOC POLLUTION									
MEXICAN VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	83.8	69.7	31.4	42.8	0.1	0.1	21.6	0.0	249.5
RURAL PRINC ART	30.6	39.1	7.5	5.9	0.0	0.1	3.1	0.3	86.5
RURAL COLLECTOR	90.4	98.3	35.2	236.1	0.1	0.1	134.2	0.0	594.4
RURAL LOCAL	9.0	11.5	2.0	0.0	0.0	0.0	0.0	0.0	22.6
URBAN INTERSTATE	1852.7	1522.5	329.0	850.1	1.2	1.7	435.0	10.9	5003.2
URBAN PRINC ART	562.0	493.7	111.1	255.4	0.4	0.6	148.5	0.0	1571.7
URBAN COLLECTOR	444.5	470.5	134.3	503.8	0.3	0.7	299.8	0.0	1854.1
URBAN LOCAL	221.2	281.7	50.1	0.0	0.2	0.4	0.0	0.0	553.5
TOTALS	3294.3	2987.0	700.6	1894.2	2.3	3.6	1042.2	11.3	9935.5

TABLE 21
EL PASO COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

ROADWAY TYPE	POUNDS OF CO POLLUTION MEXICAN VEHICLES VEHICLE TYPE								MC	TOTALS
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV			
RURAL INTERSTATE	891.5	644.5	230.0	512.6	0.2	0.2	111.4	0.0	2390.4	
RURAL PRINC ART	269.6	295.0	44.3	56.1	0.1	0.1	13.4	0.6	679.1	
RURAL COLLECTOR	793.1	747.2	218.2	2208.9	0.1	0.3	561.2	0.0	4528.9	
RURAL LOCAL	79.5	89.4	13.3	0.0	0.0	0.0	0.0	0.0	182.2	
URBAN INTERSTATE	17245.4	12115.1	2047.3	9584.8	3.4	3.9	2149.1	17.8	43166.8	
URBAN PRINC ART	4942.7	3800.6	707.9	2447.6	1.0	1.2	626.3	0.0	12527.3	
URBAN COLLECTOR	3924.4	3672.6	880.0	4967.7	0.8	1.4	1279.2	0.0	14726.1	
URBAN LOCAL	1951.6	2194.7	326.7	0.0	0.4	0.7	0.0	0.0	4474.1	
TOTALS	30097.7	23559.1	4467.7	19777.7	6.0	7.8	4740.6	18.4	82674.9	

TABLE 22
EL PASO COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

ROADWAY TYPE	POUNDS OF NOX POLLUTION MEXICAN VEHICLES VEHICLE TYPE								MC	TOTALS
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV			
RURAL INTERSTATE	98.7	79.7	27.8	35.1	0.3	0.4	364.6	0.0	606.6	
RURAL PRINC ART	25.6	32.8	4.7	4.1	0.1	0.2	34.7	0.1	102.2	
RURAL COLLECTOR	64.5	71.5	19.4	139.9	0.2	0.4	1183.7	0.0	1479.6	
RURAL LOCAL	5.5	7.1	1.0	0.0	0.0	0.0	0.0	0.0	13.6	
URBAN INTERSTATE	2086.0	1672.9	277.5	679.0	6.4	7.7	6741.3	2.0	11472.7	
URBAN PRINC ART	367.3	329.8	56.4	137.3	1.2	1.4	1196.4	0.0	2089.9	
URBAN COLLECTOR	265.3	286.8	62.5	244.2	0.9	1.5	2217.9	0.0	3079.0	
URBAN LOCAL	133.7	173.9	23.6	0.0	0.4	0.8	0.0	0.0	332.3	
TOTALS	3046.5	2654.6	472.8	1239.7	9.4	12.3	11738.6	2.1	19175.9	

TABLE 23
HIDALGO COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF VOC POLLUTION TEXAS VEHICLES VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	341.0	183.5	4.9	13.7	0.5	0.6	1.3	10.6	556.1
RURAL PRINC ART	2178.9	1136.0	30.0	88.1	3.5	4.0	8.9	62.6	3512.0
RURAL COLLECTOR	3888.1	1975.8	52.3	150.4	6.3	7.3	16.2	99.8	6196.2
RURAL LOCAL	673.7	337.6	9.0	25.6	1.1	1.3	2.9	15.6	1066.8
URBAN INTERSTATE	3548.3	1901.1	50.4	145.2	5.4	6.2	13.9	111.2	5781.7
URBAN PRINC ART	5967.8	3000.6	79.5	227.9	9.9	11.4	25.5	141.4	9464.2
URBAN COLLECTOR	6972.2	3487.3	92.6	264.2	11.7	13.5	30.2	158.1	11029.9
URBAN LOCAL	3286.2	1646.4	43.7	124.6	5.5	6.4	14.2	75.8	5202.8
TOTALS	26856.3	13668.4	362.4	1039.6	44.0	50.7	113.2	675.1	42809.7

TABLE 24
HIDALGO COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF CO POLLUTION TEXAS VEHICLES VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	2947.8	1652.3	40.3	173.6	1.2	1.2	7.1	19.5	4843.1
RURAL PRINC ART	16214.8	8665.0	207.8	895.5	7.2	6.6	41.0	99.2	26137.1
RURAL COLLECTOR	29233.6	15368.4	374.1	1512.6	12.6	11.7	72.1	189.1	46774.2
RURAL LOCAL	5174.9	2708.1	66.7	270.6	2.3	2.1	13.1	36.1	8274.0
URBAN INTERSTATE	28609.2	15754.4	379.4	1799.4	13.0	12.0	74.4	180.4	46822.2
URBAN PRINC ART	45675.3	23898.9	587.6	2395.3	20.2	18.7	115.3	312.5	73023.7
URBAN COLLECTOR	53813.9	28135.2	694.9	2835.6	24.0	22.2	137.3	379.6	86042.7
URBAN LOCAL	25255.4	13215.5	325.8	1321.8	11.2	10.4	64.0	176.4	40380.3
TOTALS	206924.8	109397.9	2676.8	11204.3	91.8	84.8	524.2	1392.8	332297.4

TABLE 25
HIDALGO COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

ROADWAY TYPE	POUNDS OF NOX POLLUTION TEXAS VEHICLES VEHICLE TYPE								MC	TOTALS
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV			
RURAL INTERSTATE	535.4	261.2	5.5	11.0	2.9	2.7	20.1	1.9	840.7	
RURAL PRINC ART	2411.8	1160.3	23.9	59.7	12.9	12.0	89.9	8.7	3779.2	
RURAL COLLECTOR	3698.1	1776.0	36.4	87.8	18.8	17.5	131.1	12.8	5778.5	
RURAL LOCAL	547.8	262.0	5.4	12.6	2.9	2.7	20.0	1.8	855.1	
URBAN INTERSTATE	5521.8	2691.4	56.6	115.4	29.8	27.6	207.0	19.6	8669.1	
URBAN PRINC ART	5039.2	2412.9	49.3	117.0	26.3	24.5	183.4	16.8	7869.3	
URBAN COLLECTOR	5502.6	2629.5	53.7	125.7	29.2	27.1	203.3	17.8	8588.9	
URBAN LOCAL	2662.6	1273.4	26.0	61.1	14.0	13.0	97.3	8.7	4156.1	
TOTALS	25919.3	12466.9	256.8	590.2	136.8	127.0	952.0	87.9	40537.0	

TABLE 26
HIDALGO COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
 Diurnal Rates are Included in 24-Hour VOC Rates Only

ROADWAY TYPE	POUNDS OF VOC POLLUTION MEXICAN VEHICLES VEHICLE TYPE								MC	TOTALS
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV			
RURAL INTERSTATE	20.7	16.2	8.1	13.8	0.0	0.0	5.8	0.0	64.6	
RURAL PRINC ART	162.0	194.2	41.1	39.9	0.1	0.3	17.5	2.1	457.2	
RURAL COLLECTOR	353.8	361.1	143.3	1187.6	0.2	0.6	561.1	0.0	2607.7	
RURAL LOCAL	20.2	24.2	4.7	0.0	0.0	0.0	0.0	0.0	49.1	
URBAN INTERSTATE	924.3	713.9	171.8	541.8	0.6	0.9	228.5	6.2	2588.0	
URBAN PRINC ART	314.7	258.7	64.3	184.0	0.3	0.3	89.4	0.0	911.6	
URBAN COLLECTOR	350.0	347.5	109.5	510.6	0.3	0.6	252.7	0.0	1571.2	
URBAN LOCAL	98.5	117.7	23.1	0.0	0.1	0.2	0.0	0.0	239.6	
TOTALS	2244.1	2033.5	566.0	2477.6	1.6	2.8	1155.0	8.3	8488.9	

TABLE 27
HIDALGO COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
Diurnal Rates are Included in 24-Hour VOC Rates Only

ROADWAY TYPE	POUNDS OF CO POLLUTION MEXICAN VEHICLES VEHICLE TYPE								MC	TOTALS
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV			
RURAL INTERSTATE	225.2	152.4	57.0	171.0	0.0	0.0	29.1	0.0	634.7	
RURAL PRINC ART	1482.3	1520.2	239.0	396.2	0.3	0.6	74.5	3.2	3716.2	
RURAL COLLECTOR	3203.9	2831.8	867.0	11605.2	0.5	1.1	2303.4	0.0	20812.9	
RURAL LOCAL	182.6	192.1	30.1	0.0	0.0	0.1	0.0	0.0	404.9	
URBAN INTERSTATE	9264.6	6139.9	1088.0	6575.7	1.8	2.0	1135.3	9.9	24217.3	
URBAN PRINC ART	2848.3	2050.2	403.7	1867.9	0.6	0.7	373.5	0.0	7544.9	
URBAN COLLECTOR	3167.0	2772.7	701.1	5277.9	0.7	1.1	1061.5	0.0	12981.9	
URBAN LOCAL	890.5	937.1	146.9	0.0	0.2	0.3	0.0	0.0	1975.0	
TOTALS	21264.3	16596.5	3532.6	25893.9	4.1	6.0	4977.2	13.1	72287.7	

TABLE 28
HIDALGO COUNTY 24-HOUR EMISSIONS FOR MEXICAN AND TEXAS TRAFFIC
Diurnal Rates are Included in 24-Hour VOC Rates Only

ROADWAY TYPE	POUNDS OF NOX POLLUTION MEXICAN VEHICLES VEHICLE TYPE								MC	TOTALS
	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV			
RURAL INTERSTATE	25.2	19.8	6.9	9.6	0.1	0.1	96.1	0.0	157.8	
RURAL PRINC ART	137.8	171.2	24.8	23.5	0.4	0.9	191.0	0.3	549.9	
RURAL COLLECTOR	259.0	278.8	76.2	599.3	0.6	1.5	4902.3	0.0	6117.6	
RURAL LOCAL	12.7	16.0	2.2	0.0	0.0	0.1	0.0	0.0	30.9	
URBAN INTERSTATE	1122.4	871.6	146.2	375.2	3.5	4.1	3700.4	1.1	6224.4	
URBAN PRINC ART	204.6	177.7	30.6	81.2	0.7	0.8	695.6	0.0	1191.2	
URBAN COLLECTOR	212.9	223.1	48.9	208.3	0.7	1.2	1841.0	0.0	2536.1	
URBAN LOCAL	61.5	77.7	10.6	0.0	0.2	0.4	0.0	0.0	150.3	
TOTALS	2036.1	1835.8	346.4	1297.1	6.2	9.0	11426.4	1.3	16958.3	

TABLE 29
WEBB COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF VOC POLLUTION									
TEXAS VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	477.4	289.7	7.9	13.5	0.7	1.1	2.4	12.1	804.8
RURAL PRINC ART	443.6	261.9	7.2	13.0	0.7	1.1	2.4	10.7	740.5
RURAL COLLECTOR	527.7	302.4	8.3	14.8	0.9	1.3	2.9	11.2	869.6
RURAL LOCAL	105.9	59.8	1.7	2.9	0.2	0.3	0.6	2.0	173.4
URBAN INTERSTATE	730.9	440.6	12.1	21.3	1.2	1.7	3.8	18.8	1230.3
URBAN PRINC ART	1956.6	1112.8	30.7	54.3	3.4	4.8	10.9	39.5	3212.9
URBAN COLLECTOR	1422.7	803.2	22.2	39.2	2.5	3.6	8.1	26.9	2328.5
URBAN LOCAL	1788.6	1009.9	27.9	49.3	3.1	4.5	10.2	33.9	2927.5
TOTALS	7453.4	4280.3	118.0	208.2	12.7	18.3	41.2	155.3	12287.4

TABLE 30
WEBB COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF CO POLLUTION									
TEXAS VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	4314.2	2727.2	72.0	169.2	1.8	2.1	13.1	24.4	7323.9
RURAL PRINC ART	3317.1	1992.7	51.9	129.7	1.5	1.8	11.1	16.9	5522.7
RURAL COLLECTOR	3978.5	2347.1	62.0	143.0	1.8	2.1	12.9	21.5	6568.9
RURAL LOCAL	815.6	480.1	12.8	29.6	0.4	0.4	2.7	4.8	1346.4
URBAN INTERSTATE	5956.8	3670.9	95.8	258.2	2.8	3.2	20.2	31.5	10039.5
URBAN PRINC ART	14891.1	8771.0	233.0	535.5	6.8	7.8	48.8	83.6	24577.6
URBAN COLLECTOR	10970.1	6456.3	172.5	399.4	5.1	5.9	36.6	64.5	18110.4
URBAN LOCAL	13785.9	8114.0	216.8	501.6	6.4	7.4	46.0	80.9	22759.0
TOTALS	58029.3	34559.2	916.8	2166.2	26.6	30.7	191.4	328.0	96248.3

TABLE 31
WEBB COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF NOX POLLUTION									
TEXAS VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	747.4	412.0	10.0	15.3	4.2	4.9	37.5	2.2	1233.6
RURAL PRINC ART	502.9	273.7	6.5	12.7	2.9	3.3	25.5	1.5	829.0
RURAL COLLECTOR	505.5	274.6	6.5	12.1	2.7	3.1	24.0	1.5	830.1
RURAL LOCAL	85.8	46.4	1.1	2.0	0.5	0.5	4.2	0.2	140.7
URBAN INTERSTATE	1134.5	624.6	15.1	23.8	6.4	7.4	56.9	3.4	1872.1
URBAN PRINC ART	1732.5	939.7	22.3	40.8	9.3	10.8	82.9	4.9	2843.2
URBAN COLLECTOR	1142.3	617.9	14.7	26.4	6.3	7.3	56.0	3.1	1874.0
URBAN LOCAL	1439.6	778.8	18.5	33.3	7.9	9.2	70.5	3.9	2361.8
TOTALS	7290.5	3967.7	94.6	166.4	40.3	46.7	357.5	20.8	11984.5

TABLE 32
WEBB COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF VOC POLLUTION									
MEXICAN VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	30.7	23.0	9.2	16.2	0.0	0.0	8.5	0.0	87.6
RURAL PRINC ART	34.7	40.3	6.8	7.0	0.0	0.1	3.8	0.4	93.2
RURAL COLLECTOR	50.6	49.7	15.8	137.0	0.0	0.1	81.0	0.0	334.2
RURAL LOCAL	3.3	3.8	0.6	0.0	0.0	0.0	0.0	0.0	7.8
URBAN INTERSTATE	200.4	148.7	28.5	94.6	0.1	0.2	50.1	1.3	523.9
URBAN PRINC ART	108.6	86.4	17.3	51.1	0.1	0.1	30.9	0.0	294.4
URBAN COLLECTOR	75.2	72.0	18.3	87.9	0.1	0.1	54.7	0.0	308.4
URBAN LOCAL	56.4	65.0	10.3	0.0	0.0	0.1	0.0	0.0	131.8
TOTALS	559.9	489.0	106.7	393.8	0.4	0.7	229.0	1.7	1781.2

TABLE 33
WEBB COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF CO POLLUTION									
MEXICAN VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	347.4	225.7	75.4	188.9	0.1	0.1	42.6	0.0	880.1
RURAL PRINC ART	318.3	313.9	43.8	65.1	0.1	0.1	16.2	0.7	758.1
RURAL COLLECTOR	457.4	387.9	104.6	1244.3	0.1	0.2	329.0	0.0	2523.4
RURAL LOCAL	30.2	30.6	4.2	0.0	0.0	0.0	0.0	0.0	64.9
URBAN INTERSTATE	2015.2	1277.5	202.4	1069.8	0.4	0.4	246.3	2.2	4814.2
URBAN PRINC ART	981.4	679.4	116.3	473.6	0.2	0.2	126.2	0.0	2377.2
URBAN COLLECTOR	679.7	572.8	125.7	842.9	0.1	0.2	226.2	0.0	2447.8
URBAN LOCAL	510.1	516.6	70.5	0.0	0.1	0.2	0.0	0.0	1097.5
TOTALS	5339.7	4004.4	743.0	3884.5	1.0	1.4	986.4	2.8	14963.2

TABLE 34
WEBB COUNTY 24-HOUR EMISSIONS
 Diurnal Rates are Included in 24-Hour VOC Rates Only

POUNDS OF NOX POLLUTION									
MEXICAN VEHICLES									
VEHICLE TYPE									
ROADWAY TYPE	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV	MC	TOTALS
RURAL INTERSTATE	37.1	28.0	9.1	12.8	0.1	0.1	144.1	0.0	231.3
RURAL PRINC ART	30.3	36.3	4.9	4.8	0.1	0.2	43.5	0.1	120.1
RURAL COLLECTOR	37.2	38.8	9.8	79.2	0.1	0.2	720.2	0.0	885.6
RURAL LOCAL	2.1	2.5	0.3	0.0	0.0	0.0	0.0	0.0	5.0
URBAN INTERSTATE	242.6	181.6	28.0	74.1	0.7	0.9	816.0	0.2	1344.1
URBAN PRINC ART	74.0	62.5	10.0	27.1	0.2	0.3	252.4	0.0	426.4
URBAN COLLECTOR	46.5	47.2	9.6	41.9	0.1	0.3	407.0	0.0	552.6
URBAN LOCAL	35.0	42.7	5.4	0.0	0.1	0.2	0.0	0.0	83.4
TOTALS	504.7	439.7	77.0	240.0	1.6	2.2	2383.2	0.3	3648.6

BRIDGE DATA AND EMISSIONS

This study provides for estimating the amount of delay and idling at international bridges by all vehicles, as well as an estimating the proportion that are Mexican vehicles. Specifically, the following estimates were developed:

- Total vehicular border crossings by direction by county.
- Distribution of vehicular border crossings by EPA vehicle classification for Mexican vehicles.
- Typical queue length by direction by county by time of day.
- Average delay per vehicle by direction by county by time of day.

Queue length and delay are closely related and are discussed together.

Methodology: The estimates developed and reported here are county-specific aggregates. They are based on several separate studies and data collection efforts. The distribution of queue length and delay is based on the extensive analysis previously conducted for Ciudad Juarez/El Paso. The distribution of vehicle registration (Mexican versus U.S.) and the distribution of vehicle classifications are based on the data collected in Laredo. Vehicular border crossings are based on data collected at the county level for an entire year (1996).

These data sources are combined to produce county-level aggregate estimates of the parameters listed above. The data would not support bridge-specific estimates; consequently county totals are shown.

Annual Vehicular Border Crossings: Table 35 shows total annual vehicular border crossings for the four border counties. Vehicles are divided into auto and truck categories; however, as noted above, only the total is used to distribute vehicles into the eight EPA vehicle categories.

TABLE 35
ANNUAL VEHICULAR BORDER CROSSINGS, ALL VEHICLES

County	City	Auto	Truck	Total
Webb	Laredo	14,810,743	1,092,176	15,902,919
El Paso	El Paso	NA	NA	12,957,634
Cameron	Brownsville	11,526,728	315,788	11,842,516
	Harlingen	NA	NA	911,920
Hidalgo	Mc Allen	9,640,890	187,320	9,828,210
	Progreso	1,977,045	28,111	2,005,156

Annual Vehicular Border Crossings by Mexican Vehicles: Table 36 shows the estimated annual border crossings by Mexican vehicles by EPA vehicle category. These estimates are based on county border crossing data and the distribution of registration and vehicle classification developed from the Laredo field data. As noted above, this distribution reflects multiple locations throughout the study area and is not specific to border crossings. U.S.-registered vehicles may be overestimated. Note that all the border crossing locations in each county are aggregated into this estimate. (Recall that Table 9 shows percentages of the U.S.-registered vehicles by county by EPA vehicle category for comparison.) This distribution is based on TxDOT compiled data. Note that the proportion of heavy duty trucks (especially HDDV) actually on the street is much greater than the proportion registered in the county due to external vehicles (both Mexican and out of state).

Average Queue Length and Delay Estimates: Estimates of average queue length and average delay by time of day were developed for each county. These estimates rely on the extensive queuing and delay analyses performed for the Ciudad Juarez/El Paso delay study mentioned above. Queue length estimates and delay estimates were developed for each county. Queue length is estimated as a function of the volume of crossings in each direction. Delay is estimated based on an average 25-second processing time and five processing stations. Clearly variations are likely (perhaps extreme, though more infrequent the more extreme). These estimates are aggregate and cannot capture these incidents specifically, though they are reflected in the averages.

aggregate and cannot capture these incidents specifically, though they are reflected in the averages.

**TABLE 36
BORDER COUNTY ESTIMATED ANNUAL BORDER CROSSINGS
FOR MEXICAN VEHICLES
BY EPA VEHICLE CLASSIFICATION**

COUNTY	EPA VEHICLE CLASSIFICATION							
	LDCV	LDGT1	LDGT2	HDCV	LDDV	LDDT	HDDV	MC
	0.364	0.276	0.042	0.064	0.003	0.003	0.248	0.001
Webb	544,134	412,585	62,785	95,672	4,485	4,485	370,729	1,495
El Paso	443,358	336,173	51,157	77,953	3,654	3,654	302,068	1,218
Cameron	436,406	330,901	50,355	76,731	3,597	3,597	297,331	1,199
Hidalgo	404,890	307,005	46,718	71,190	3,337	3,337	275,859	1,112

Bridge-Related Emission Estimates: The study provides for the estimation of the total amount of on-road mobile source emissions associated with delay and idling at international bridges for each of the four border counties (Cameron, El Paso, Hidalgo, and Webb) in order to estimate the proportion of these emissions attributable to Mexican vehicles.

International bridge-related emissions are a function of several factors:

- delay at the border crossings,
- distribution of vehicle registration (U.S. versus Mexican),
- distribution of vehicle classification, and
- emission rates for both U.S. vehicles and Mexican vehicles.

Vehicle delay at border crossings was developed as summarized above. The distributions of vehicle registration and the distribution of vehicle classification are also discussed above. Emission rates for the U.S. and Mexican fleets are discussed below. All the estimates are county-specific aggregates; consequently the bridge delay emission estimates are county-specific aggregates as well.

The time-of-day delay estimates discussed above were used to generate total vehicle delay for an average weekday, an average Saturday, and an average Sunday. This was then combined with the U.S. vehicle type distribution and the Mexican vehicle type distribution also

discussed above. Finally, emission rates were developed for both fleets. The U.S. fleet emission rates were estimated from MOBILE5a using a nominal idle speed of 2.5 MPH. The vehicle age distribution and vehicle type distribution for each border county were used in making the emissions estimate. For El Paso, various air quality mitigation measures were assumed. These include two emission control antitampering programs. Consequently, both the emission rates and the total emissions are lower for El Paso.

Mexican fleet emission rates were generated similarly from Mobile Juarez using the nominal idle speed of 2.5 MPH. The vehicle age distribution of the adjacent U.S. county was used, along with the Mexican distribution of vehicle types as discussed above.

This process was performed for the three emissions of interest (VOC, CO, and NOX) for each of the four border counties. MOBILE5a and Mobile Juarez emission rates (converted to a common unit of grams per idle minute) are reported in Tables 37 through 42. Tables 37 through 39 show emission rates for each of the three pollutants for U.S. vehicles for the four border counties. Tables 40 through 42 show emission rates for each of the three pollutants for Mexican vehicles for the four border counties.

The resulting emission estimates for each county (converted into tons per day) are reported in Tables 43 through 48. Tables 43 through 45 show weekday, Saturday, and Sunday emissions attributable to U.S. vehicles for each of the four border counties. Tables 46 through 48 show weekday, Saturday, and Sunday emissions attributable to Mexican vehicles for each of the four border counties.

**TABLE 37
VOC EMISSIONS (GRAMS) PER IDLE MINUTE
BY VEHICLE TYPE
FOR U.S. VEHICLES
BY COUNTY**

COUNTY	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Cameron	1.129583	1.227500	1.748333	1.524167	0.071667	0.105000	0.232083	0.807917
El_Paso	0.631667	0.670833	1.014167	1.539167	0.071250	0.101667	0.230000	0.732083
Hidalgo	1.090000	1.133333	1.860833	3.396667	0.071667	0.103333	0.230833	0.790000
Webb	1.095000	1.122083	1.525833	2.545417	0.071667	0.103333	0.232500	0.789167

**TABLE 38
CO EMISSIONS (GRAMS) PER IDLE MINUTE
BY VEHICLE TYPE
FOR U.S. VEHICLES
BY COUNTY**

COUNTY	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Cameron	7.027500	9.019167	13.355833	22.689583	0.236667	0.275417	1.685000	8.528333
El Paso	3.821667	4.858333	7.335833	11.912500	0.235417	0.271667	1.668333	8.412917
Hidalgo	6.658750	8.292083	14.251250	31.017917	0.236250	0.272917	1.687083	8.451667
Webb	6.742917	8.080833	11.402500	20.652917	0.236667	0.272917	1.703333	8.503750

**TABLE 39
NOX EMISSIONS (GRAMS) PER IDLE MINUTE
BY VEHICLE TYPE
FOR U.S. VEHICLES
BY COUNTY**

COUNTY	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Cameron	0.124167	0.136667	0.140000	0.195833	0.121250	0.141667	1.080000	0.035417
El Paso	0.094167	0.103333	0.128750	0.185417	0.118750	0.136667	1.056667	0.035417
Hidalgo	0.120833	0.132917	0.141667	0.208750	0.120417	0.139583	1.047083	0.035417
Webb	0.120833	0.129167	0.131667	0.200000	0.120417	0.139167	1.067500	0.035417

**TABLE 40
VOC EMISSIONS (GRAMS) PER IDLE MINUTE
BY VEHICLE TYPE
FOR MEXICAN VEHICLES
BY COUNTY**

COUNTY	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Cameron	1.681250	1.914583	2.821667	3.585417	0.054167	0.072917	0.264167	0.937917
El Paso	1.629583	1.898750	2.893333	3.673333	0.050833	0.069583	0.255417	0.817083
Hidalgo	1.615833	1.794167	2.915833	4.325000	0.052500	0.069583	0.266250	0.915000
Webb	1.621250	1.734167	2.372083	3.736250	0.052500	0.068333	0.270833	0.899167

**TABLE 41
CO EMISSIONS (GRAMS) PER IDLE MINUTE
BY VEHICLE TYPE
FOR MEXICAN VEHICLES
BY COUNTY**

COUNTY	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Cameron	14.086250	15.985417	20.745417	29.593333	0.201667	0.230000	1.800000	8.555000
El Paso	13.398333	15.637500	21.741667	29.602917	0.197083	0.224583	1.760417	8.213333
Hidalgo	13.319167	14.787917	21.460000	38.636250	0.199167	0.224583	1.800833	8.477917
Webb	13.393750	14.206250	18.071667	29.252917	0.199167	0.222500	1.812083	8.527083

TABLE 42
NOX EMISSIONS (GRAMS) PER IDLE MINUTE
BY VEHICLE TYPE
FOR MEXICAN VEHICLES
BY COUNTY

COUNTY	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Cameron	0.150833	0.165000	0.164167	0.211250	0.087083	0.103750	1.310000	0.035417
El Paso	0.142917	0.161667	0.168750	0.215000	0.084583	0.100417	1.262917	0.035417
Hidalgo	0.146667	0.162083	0.169583	0.230417	0.085833	0.101250	1.307917	0.035417
Webb	0.146667	0.157083	0.156250	0.211667	0.085833	0.099167	1.336667	0.035417

**TABLE 43
 TONS OF WEEKDAY VEHICLE EMISSIONS
 ASSOCIATED WITH BORDER CROSSING DELAY
 FOR U.S. VEHICLES
 BY COUNTY**

COUNTY	VOC	CO	NOX
Cameron	0.214233	1.412113	0.024344
El_Paso	0.129292	0.829150	0.019853
Hidalgo	0.176146	1.152352	0.020459
Webb	0.319952	2.094441	0.037417

**TABLE 44
 TONS OF SATURDAY VEHICLE EMISSIONS
 ASSOCIATED WITH BORDER CROSSING DELAY
 FOR U.S. VEHICLES
 BY COUNTY**

COUNTY	VOC	CO	NOX
Cameron	0.258421	1.703371	0.029366
El_Paso	0.155856	0.999500	0.023932
Hidalgo	0.214271	1.401763	0.024887
Webb	0.386652	2.531072	0.045218

**TABLE 45
 TONS OF SUNDAY VEHICLE EMISSIONS
 ASSOCIATED WITH BORDER CROSSING DELAY
 FOR U.S. VEHICLES
 BY COUNTY**

COUNTY	VOC	CO	NOX
Cameron	0.006796	0.044793	0.000772
El_Paso	0.004118	0.026407	0.000632
Hidalgo	0.005711	0.037361	0.000663
Webb	0.010428	0.068260	0.001220

**TABLE 46
 TONS OF WEEKDAY VEHICLE EMISSIONS
 ASSOCIATED WITH BORDER CROSSING DELAY
 FOR MEXICAN VEHICLES
 BY COUNTY**

COUNTY	VOC	CO	NOX
Cameron	0.029094	0.162486	0.005557
El_Paso	0.031546	0.173995	0.005799
Hidalgo	0.025304	0.138984	0.004726
Webb	0.043219	0.235605	0.008696

TABLE 47
TONS OF SATURDAY VEHICLE EMISSIONS
ASSOCIATED WITH BORDER CROSSING DELAY
FOR MEXICAN VEHICLES
BY COUNTY

COUNTY	VOC	CO	NOX
Cameron	0.035095	0.196000	0.006703
El_Paso	0.038027	0.209742	0.006991
Hidalgo	0.030780	0.169065	0.005749
Webb	0.052229	0.284722	0.010509

TABLE 48
TONS OF SUNDAY VEHICLE EMISSIONS
ASSOCIATED WITH BORDER CROSSING DELAY
FOR MEXICAN VEHICLES
BY COUNTY

COUNTY	VOC	CO	NOX
Cameron	0.000923	0.005154	0.000176
El_Paso	0.001005	0.005541	0.000185
Hidalgo	0.000820	0.004506	0.000153
Webb	0.001409	0.007679	0.000283

EVALUATION OF POTENTIAL FOR NONATTAINMENT

One important objective of this study is the evaluation of the CAMS data for each border county studied (Cameron, El Paso, Hidalgo, and Webb) to evaluate the potential for that county to become a nonattainment area. This task estimates the proportion of total on-road mobile source emissions attributable to Mexican vehicles and assesses the likelihood that increased operations by Mexican and U.S. vehicles will lead to nonattainment. In addition, particular attention is given to CO violations associated with delay and idling at international bridges in the form of a detailed analysis of one specific site (Laredo International Bridge II).

Analysis of CAMS Data: The various pollutants that drive attainment and nonattainment in the border counties are highly affected by weather conditions. Consequently, CAMS data trends are a poor predictor of potential exceedences and eventual nonattainment. The situation is reflected in the statistics for the various counties (though statistics are not available for all counties and all pollutants). For example, ozone exceedences and peaks for the four counties (Table 49) show only El Paso (which is currently in nonattainment for ozone) has had any exceedence days since 1994. The border counties do not participate in the ozone action days program.

**TABLE 49
OZONE EXCEEDENCES AND PEAKS
BY COUNTY**

County	Estimated Population	Number of Ozone Sites		Number of Sites With Ozone Exceedences		Maximum 1-hour Ozone (P.B.)		Areawide Ozone Exceedence Days		Maximum Exceedence Days at One Site		Maximum Total Exceedence Days at One Site	
		1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	95-97	94-96
Cameron	714,192	1	1	0	0	80	81	0	0	0	0	0	0
El Paso	1,772,648	14	18	2	6	148	144	2	4	1	2	4	7
Hidalgo	916,409	2	2	0	0	86	68	0	0	0	0	-	-
Webb	402,749	1	1	0	0	92	73	0	0	0	0	-	-

Trends for El Paso from 1987 to 1996 for the three major pollutants (ozone, CO, and PM10) imply a general reduction in pollutant levels over time. However, attainment versus nonattainment status are more complicated than this.

Discussions with TNRCC staff augmented the interpretation of the CAMS data. With the exception of El Paso, border counties are currently in attainment for ozone (though this condition is marginal in most cases). Though generally not a problem at this time, PM10 may become a problem in some areas (e.g., Laredo where monitoring is relatively recent). CO is generally not a problem in the border counties. Waivers exist under the Clean Air Act for areas that may be influenced by emissions from outside their jurisdictions (i.e., from across the border). El Paso currently has such a waiver in place for ozone.

Regional Bridge CO Impacts: Bridge II in Laredo carries nearly 900,000 vehicles per month. The peak day is Friday which for June 1997 averaged 17,684 southbound and an estimated 16,658 northbound, for a “typical” summer peak day of 34,342 vehicles. In the aggregate, assuming a “typical” queuing regime, this traffic can be expected to cause 14,959 minutes of delay (queuing and actual passage through) on a typical peak summer day. The resulting CO emissions for a peak summer day associated with delay at Bridge II are shown in Table 50.

CO emissions are sensitive to temperature; consequently an estimate of Laredo Bridge II traffic and delay during the winter was also made. On average, the peak day accounted for approximately 29,300 vehicles (of which 13,300 are estimated to be northbound and 16,000 are estimated to be southbound). In the aggregate, assuming a “typical” queuing regime, this traffic can be expected to cause 12,762 minutes of delay on a typical peak winter day. The resulting CO emissions for a peak winter day associated with delay at Bridge II are shown in Table 51.

The difference between the summer peak day emissions and the winter peak day emissions is a function of two factors. First, there is less traffic and consequently less delay in the winter. On the other hand, the emission rates per unit of time or distance traveled are higher for CO in the winter. In other words, the winter emissions are higher but not as much higher as they would be if there was the same level of traffic as in the summer. Note, however, that the distribution of vehicle types (Table 52) is different between Mexican vehicles and U. S. vehicles, so direct comparisons between registration groups are not possible.

It is not possible to directly compare the delay-related emissions shown in Tables 50 and 51 with the peak concentrations shown in Table 49. However, we can compare the border county CO emissions estimates prepared earlier. This comparison is shown in Table 53.

Bridge-related CO emissions are less than 0.01% of the total (of that, 78% is attributable to U.S. vehicles and 22% is attributable to Mexican vehicles, even though Mexican vehicles comprise less than 10% of the fleet). Aggregate comparisons such as this, however, do not represent the probability of a local exceedence. Monitor location and local topology are also critical factors. In addition, there are emissions associated with border crossings that are not delayed (proportional to the VMT associated with the border crossing). The CAMS monitor in Laredo is located at the Laredo Community College which is less than 2 miles from Bridge II. Clearly potential CO hot spots such as International Bridge II warrant continued attention and monitoring (Laredo's overall attainment status notwithstanding).

**TABLE 50
PEAK SUMMER DAY DELAY-RELATED CO EMISSIONS
LAREDO BRIDGE II**

Vehicle Registration	Grams	Tons
Mexican	38,051.81	0.041945
U. S.	81,338.90	0.089661
Combined	119,390.71	0.131606

**TABLE 51
PEAK WINTER DAY DELAY-RELATED CO EMISSIONS
LAREDO BRIDGE II**

Vehicle Registration	Grams	Tons
Mexican	37,148.06	0.040949
U. S.	81,141.71	0.089444
Total	118,289.77	0.130393

**TABLE 52
VEHICLE REGISTRATION DISTRIBUTION AND VMT MIX
FOR WEBB COUNTY**

Registration	Pct	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
Mexican	0.094	0.364	0.276	0.042	0.064	0.003	0.003	0.248	0.001
U. S.	0.906	0.650	0.320	0.007	0.005	0.005	0.005	0.005	0.004

TABLE 53
COMPARISON OF TOTAL DAILY CO EMISSIONS VERSUS
DELAY-RELATED CO EMISSIONS
(in pounds)

Vehicle Registration	County-wide	Bridge-delay Related	Percent Bridge-delay Related
Mexican	14,963.2	83.89	.56%
U. S.	96,248.3	179.32	.19%
Total	111,211.5	263.21	.24%

PLAN OF ACTION

Finally, the study provides for developing and recommending a plan of action that will help mitigate the growth in on-road mobile source emissions and therefore the potential for a county becoming a nonattainment area. Specifically, recommendations are developed in two areas. First, additional studies that may be needed to improve our understanding of border county emissions and air quality issues will be identified. Second, transportation-related projects and programs that may help mitigate the growth of on-road mobile source emissions will be identified. Recommendations regarding additional studies and mitigation measures are provided.

All these recommendations recognize explicitly that the primary difference between the U.S. and Mexican fleets (and consequently their emissions) is the fleet mix rather than the emissions of individual vehicles. Specifically, the Mexican fleet operating in border counties contains a high proportion of heavy trucks (HDDV). If an inspection and maintenance program were in place for U.S. vehicles, the individual vehicle differences might become significant.

Additional Applications: Methods and basic data can form the basis for a similar analysis of other areas of interest (e.g., near-nonattainment areas) which currently do not have link-based travel demand models in place. No additional research or data collection is required for the application of the method and analytical strategy to other areas. However, local validation of some of the basic parameters would be an improvement over the application of key distributions to other areas. For example, the local vehicle registration distribution and Mexican vehicle mix would be superior to using the corresponding distributions developed from data collected in another area (i.e., Laredo). This possibility is discussed in more detail in the next section.

Additional Data: As noted elsewhere, the analysis of air quality for the four border counties examined as part of this study used vehicle registration distributions and Mexican vehicle mix based on data collected in Laredo. Vehicle registration distributions and Mexican vehicle mix for other counties is different. Laredo is known to be a “worst case” in terms of Mexican commercial vehicles and was selected as the data collection site for that reason (making the analysis of the other three counties somewhat conservative). Collection of vehicle registration

distribution and Mexican VMT mix for other areas would improve and refine the analysis for those areas.

Similarly, the analysis of bridge delay-related emissions was somewhat aggregate. This part of the analysis would be improved by the collection of more refined bridge delay data. It is probably impractical and too expensive to collect the same level of data as was collected for the Ciudad Juarez study. However, additional bridge-specific delay and queuing data would improve future analyses. These data could be either field data (along the lines of the Laredo data) or they could be developed from existing compilations of border crossing data collected by agencies responsible for border-related activities.

Additional Air Quality Monitoring: The available air quality monitoring data (the so-called CAMS data) could be improved in two areas. First, many of the stations have not been on-line for very long. As these relatively new stations continue to operate, additional data will be collected and trends can be deduced from the accumulated data. No additional action is required for this to happen, just a continuation of the current data collection program at existing monitoring stations. At the areas level, however, some areas are represented by a single monitoring station. Many more are represented by only a few monitoring stations. Sparse monitoring stations place a heavy reliance on those stations in representing the area. More stations would better represent the air quality conditions in these areas, as well as reducing the variations due to highly site-specific conditions (e.g., topography, adjacent facilities, or adjacent activities). Additional stations should monitor the primary on-road mobile source pollutants (VOC, CO, and NOX), as well as other locally important substances (e.g., O₃, and PM₁₀).

The objective of continued operation of new stations is to develop historical data with which to establish trends. The objective of additional monitoring stations is to better represent entire areas and avoid locally unique conditions which may exaggerate monitor readings.

Transportation Mitigations: There are three general categories of transportation-related mitigation of air quality problems. The first is the continued refinement of automotive technology. Specifically, there should be continued support for the development of less polluting vehicles at all levels. This includes the refinement of existing technology, as well as the introduction of alternative fuels where appropriate and cost-effective. The second general

category involves alternatives to the single occupancy vehicle (SOV). Specifically, there should be continued encouragement of the exploration of alternatives to the single occupancy vehicle (e.g., HOV and transit, as well as other less traditional alternatives). Consideration of alternatives to the SOV should occur at both the project level and at the regional planning level. The third general category of mitigation is shorter range transportation system management (TSM) type measures to reduce delay at known congestion points. These measures should be considered at the project and regional levels, but also (and more importantly) at the operational level. Consideration of these short-range measures can be encouraged by research designed to evaluate existing TSM measures, as well as to develop new innovative ones. Design and evaluation could take the form of descriptions of the measures themselves, recommendations regarding their application (including but not limited to determining the situations where they are most appropriate), developing general cost estimates, and providing implementation guidelines (in the form of analytical research and/or case studies where experience exists).

Recommendations: In summary, the researchers recommend:

1. Analysis of other near-nonattainment areas that currently do not have link-based travel demand models in place. Local validation of some of the basic parameters would be an improvement over the application of key distributions to other areas.
2. Collection of vehicle registration distribution and Mexican VMT for areas other than Laredo to improve and refine analysis.
3. Collection of more refined bridge delay data.
4. Improvement of air quality monitoring (CAMS) data by adding more stations in sparsely represented areas and by collecting data and deducing trends from the relatively new stations.
5. Continued support for the development of less polluting vehicles including the refinement of existing automotive technology and the introduction of alternative fuels where appropriate and cost-effective.
6. Encouragement of alternatives to single occupancy vehicles at both the project and at the regional planning level.
7. Evaluation of shorter range transportation system measures to reduce delay and known congestion points.

8. Development of innovative short-range transportation system measures to mitigate congestion.

APPENDIX A

**1996 Cameron MOBILE5a Input
for 24-Hour US Vehicle Emission Rates**

```

1      PROMPT
1 Cameron, Ozone Season - 24 Hour 1996
1      TAMFLG - Default: Tampering Rates
1      SPDFLG - User input: one speed for all vehicle types
3      VMFLAG - User input: single VMT mix for all scenario
3      MYMRFG - Default: AMAR, User input: Reg. Distributions
5      NEWFLG - Dflt: Basic exhaust emis. rates, Disable new clean air act r
1      IMFLAG - no I/M
1      ALHFLG - No additional correction factors
1      ATPFLG - no atp
5      RLFLAG - Zero-out refueling emissions
2      LOCFLG - User input: one LAP record for all scenarios
1      TEMFLG - MOBILE5 calculates exhaust temperatures
4      QUTFMT - 80-column descriptive format
4      PRIFLG - Print all three pollutant emission factors
1      IDLFLG - No idle emissions calculated or printed
3      NMHFLG - Print HC = volatile organic compounds (VOC)
1      HCFLAG - Print total HC
.679.195.053.019.010.003.037.004 VMT mix: LDGV,LDGT1,LDGT2,HGCV,LDDV,LDDT,HDDV
.0136.0436.0581.0522.0526.0505.0602.0593.0728.0793 LDGV Cameron
.0717.0743.0774.0619.0399.0325.0244.0158.0169.0120 LDGV
.0082.0043.0022.0021.0142 LDGV
.0190.0451.0590.0610.0519.0435.0497.0528.0635.0666 LDGT1
.0506.0627.0629.0562.0390.0438.0339.0199.0254.0210 LDGT1
.0162.0108.0063.0061.0331 LDGT1
.0355.0576.0827.0872.0355.0281.0369.0310.0428.0502 LDGT2
.0266.0487.0606.0340.0251.0517.0384.0207.0295.0340 LDGT2
.0177.0177.0103.0177.0798 LDGT2
.0053.0265.0690.0230.0124.0106.0177.0159.0301.0212 HDGV
.0248.0372.0319.0319.0319.0442.0372.0460.0920.0442 HDGV
.0442.0442.0372.0372.1842 HDGV
.0136.0436.0581.0522.0526.0505.0602.0593.0728.0793 LDDV
.0717.0743.0774.0619.0399.0325.0244.0158.0169.0120 LDDV
.0082.0043.0022.0021.0142 LDDV
.0190.0451.0590.0610.0519.0435.0497.0528.0635.0666 LDDT
.0506.0627.0629.0562.0390.0438.0339.0199.0254.0210 LDDT
.0162.0108.0063.0061.0331 LDDT
.0021.0546.0273.0504.0462.0483.0378.0886.0483.0588 HDDV
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.0084.0231.0126.0105.0126 HDDV
.0076.0487.0844.0606.0606.0346.0227.0281.0303.0357 MC
.0444.5423.0000.0000.0000.0000.0000.0000.0000.0000 MC
.0000.0000.0000.0000.0000 MC
        66.0 97.0 8.2 8.2 90
1 96 XXXX 86.7 20.6 27.3 20.6 7

```

LAP rec: SCNME,MNTM
RGN,CY,SPD,AMBTMP,P

**1996 Cameron MOBILE5a Juarez Input¹
for 24-Hour Mexican Vehicle Emission Rates**

```

1      PROMPT
1      Cameron, Ozone Season - 24 Hour 1996
1      TAMFLG - Default: Tampering Rates
1      SPDFLG - User input: one speed for all vehicle types
3      VMFLAG - User input: single VMT mix for all scenario
3      MYMRFG - Default: AMAR, User input: Reg. Distributions
5      NEWFLG - Dflt: Basic exhaust emis. rates, Disable new clean air act r
1      IMFLAG - no I/M
1      ALHFLG - No additional correction factors
1      ATPFLG - no atp
5      RLFLAG - Zero-out refueling emissions
2      LOCFLG - User input: one LAP record for all scenarios
1      TEMFLG - MOBILE5 calculates exhaust temperatures
4      OUTFMT - 80-column descriptive format
4      PRFLG - Print all three pollutant emission factors
1      IDLFLG - No idle emissions calculated or printed
3      NMHFLG - Print HC = volatile organic compounds (VOC)
1      HCFLAG - Print total HC
.679.195.053.019.010.003.037.004 VMT mix: LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV
.0136.0436.0581.0522.0526.0505.0602.0593.0728.0793 LDGV Cameron
.0717.0743.0774.0619.0399.0325.0244.0158.0169.0120 LDGV
.0082.0043.0022.0021.0142 LDGV
.0190.0451.0590.0610.0519.0435.0497.0528.0635.0666 LDGT1
.0506.0627.0629.0562.0390.0438.0339.0199.0254.0210 LDGT1
.0162.0108.0063.0061.0331 LDGT1
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.0442.0442.0372.0372.1842 HDGV
.0136.0436.0581.0522.0526.0505.0602.0593.0728.0793 LDDV
.0717.0743.0774.0619.0399.0325.0244.0158.0169.0120 LDDV
.0082.0043.0022.0021.0142 LDDV
.0190.0451.0590.0610.0519.0435.0497.0528.0635.0666 LDDT
.0506.0627.0629.0562.0390.0438.0339.0199.0254.0210 LDDT
.0162.0108.0063.0061.0331 LDDT
.0021.0546.0273.0504.0462.0483.0378.0886.0483.0588 HDDV
.0630.0567.0777.0819.0168.0399.0714.0126.0399.0105 HDDV
.0084.0231.0126.0105.0126 HDDV
.0076.0487.0844.0606.0606.0346.0227.0281.0303.0357 MC
.0444.5423.0000.0000.0000.0000.0000.0000.0000.0000 MC
.0000.0000.0000.0000.0000 MC
18.9 36.1 8.2 8.2 90
1 96 XXXX 30.4 20.6 27.3 20.6 7
LAP rec: SCNME,MNTM
RGN,CY,SPD,AMBTMP,P

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¹Temperatures are in Celsius for MOBILE Juarez

**1996 El Paso MOBILE5a Hybrid Motorist Choice ATP1
for 24-Hour US Vehicles Emission Rates**

1	PROMPT	
El Paso --	Hybrid --	[Central & Decentral]/Annual Idle/2500 (July-1996) - ATP1
1	TAMFLG	- Default: Tampering Rates
1	SPDFLG	- User input: one speed for all vehicle types
3	VMFLG	- User input: single Vmt mix for all scenario
3	MYMRFG	- Default: AMAR, User input: Reg. Distributions
1	NEWFLG	- Default Basic exhaust rates,new fmvcp, new evap. tst
22	IMFLAG	- One I/M program (2-Speed Idle), 100% TTC
1	ALHFLG	- No additional correction factors
5	ATPFLG	- ATP & Pressure Test
5	RLFLAG	- Zero-out refueling emissions
2	LOCFLG	- User input: one LAP record for all scenarios
1	TENFLG	- MOBILE5A calculates exhaust temperatures
3	OUTFMT	- 112-column descriptive By model year output format
4	PRTFLG	- Print HC emission factors only
1	IDLFLG	- No idle emissions calculated or printed
3	NMHFLG	- Print HC = Volatile organic compounds (VOC)
2	HCFLAG	- Print Total HC (overridden by prtflg)
.686.197.053.020.003.001.036.004	VMT mix:	LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV,MC
.042 .077 .074 .069 .065 .068 .070 .051 .055 .058	July,1990	.LDGV..MY AGES 1-10
.054 .060 .053 .042 .031 .019 .020 .019 .014 .010	Vehicle	11-20
.015 .010 .009 .008 .007	Registrations	21-25
.038 .066 .077 .068 .082 .070 .068 .048 .050 .049		.LDGT1.MY AGES 1-10
.036 .048 .044 .039 .031 .021 .026 .024 .019 .013		11-20
.025 .016 .016 .013 .012		21-25
.037 .062 .059 .037 .065 .052 .055 .042 .051 .040		.LDGT2.MY AGES 1-10
.037 .075 .062 .064 .051 .045 .045 .035 .018 .011		11-20
.017 .011 .011 .009 .009		21-25
.021 .031 .027 .033 .047 .052 .048 .034 .043 .040		.HDGV..MY AGES 1-10
.053 .073 .057 .046 .036 .048 .047 .042 .034 .026		11-20
.049 .032 .031 .026 .025		21-25
.042 .077 .074 .069 .065 .068 .070 .051 .055 .058		.LDDV..MY AGES 1-10
.054 .060 .053 .042 .031 .019 .020 .019 .014 .010		11-20
.015 .010 .009 .008 .007		21-25
.038 .066 .077 .068 .082 .070 .068 .048 .050 .049		.LDDT..MY AGES 1-10
.036 .048 .044 .039 .031 .021 .026 .024 .019 .013		11-20
.025 .016 .016 .013 .012		21-25
.028 .024 .028 .046 .059 .087 .066 .042 .057 .075		.HDDV..MY AGES 1-10
.095 .054 .069 .050 .019 .023 .028 .032 .026 .015		11-20
.022 .015 .014 .012 .014		21-25
.024 .063 .044 .053 .102 .094 .068 .086 .103 .090		.MC...MY AGES 1-10
.074 .196 .000 .000 .000 .000 .000 .000 .000 .000		11-20
.000 .000 .000 .000 .000		21-25
87 20 73 95 03 03 096 1 1 2222 2211 220. 1.20 999.		2-Speed Idle
86 73 95 2222 11 096. 21112222		ATP
96 73 95 2222 11 096.		PRESSURE TEST
El Paso-03 66. 097. 7.8 7.8 92		LAP rec: CNME,MNTMP,MXTMP,RVP1,RVP2,RVP2SY
1 96 XXXX 86.6 20.6 27.3 20.6 7		RGN,CY,SPD,AMBTMP,PCCN,PCHC,PCCC

**1996 El Paso MOBILE5a Hybrid Motorist Choice ATP2
for 24-Hour US Vehicles Emission Rates**

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1 PROMPT
El Paso -- Hybrid -- [Central & Decentral]/Annual Idle/2500 (July-1996) - ATP2
1 TAMFLG - Default: Tampering Rates
1 SPDFLG - User input: one speed for all vehicle types
3 VMFLAG - User input: single Vmt mix for all scenario
3 MYMRFG - Default: AMAR, User input: Reg. Distributions
1 NEWFLG - Default Basic exhaust rates,new fmvcp, new evap. tst
22 INFLAG - One I/M program (2-Speed Idle), 100% TTC
1 ALHFLG - No additional correction factors
5 ATPFLG - ATP & Pressure Test
5 RLFLAG - Zero-out refueling emissions
2 LOCFLG - User input: one LAP record for all scenarios
1 TEMFLG - MOBILE5A calculates exhaust temperatures
3 QUTFMT - 112-column descriptive By model year output format
4 PRNFLG - Print HC emission factors only
1 IDLFLG - No idle emissions calculated or printed
3 NMHFLG - Print HC = Volatile organic compounds (VOC)
2 HCFLAG - Print Total HC (overridden by prtflg)
.686.197.053.020.003.001.036.004 VMT mix: LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV,MC
.042 .077 .074 .069 .065 .068 .070 .051 .055 .058 July,1990 .LDGV..MY AGES 1-10
.054 .060 .053 .042 .031 .019 .020 .019 .014 .010 Vehicle 11-20
.015 .010 .009 .008 .007 Registrations 21-25
.038 .066 .077 .068 .082 .070 .068 .048 .050 .049 .LDGT1.MY AGES 1-10
.036 .048 .044 .039 .031 .021 .026 .024 .019 .013 11-20
.025 .016 .016 .013 .012 21-25
.037 .062 .059 .037 .065 .052 .055 .042 .051 .040 .LDGT2.MY AGES 1-10
.037 .075 .062 .064 .051 .045 .045 .035 .018 .011 11-20
.017 .011 .011 .009 .009 21-25
.021 .031 .027 .033 .047 .052 .048 .034 .043 .040 .HDGV..MY AGES 1-10
.053 .073 .057 .046 .036 .048 .047 .042 .034 .026 11-20
.049 .032 .031 .026 .025 21-25
.042 .077 .074 .069 .065 .068 .070 .051 .055 .058 .LDDV..MY AGES 1-10
.054 .060 .053 .042 .031 .019 .020 .019 .014 .010 11-20
.015 .010 .009 .008 .007 21-25
.038 .066 .077 .068 .082 .070 .068 .048 .050 .049 .LDDT..MY AGES 1-10
.036 .048 .044 .039 .031 .021 .026 .024 .019 .013 11-20
.025 .016 .016 .013 .012 21-25
.028 .024 .028 .046 .059 .087 .066 .042 .057 .075 .HDDV..MY AGES 1-10
.095 .054 .069 .050 .019 .023 .028 .032 .026 .015 11-20
.022 .015 .014 .012 .014 21-25
.024 .063 .044 .053 .102 .094 .068 .086 .103 .090 .MC....MY AGES 1-10
.074 .196 .000 .000 .000 .000 .000 .000 .000 .000 11-20
.000 .000 .000 .000 .000 21-25
87 20 73 95 03 03 096 1 1 2222 2211 220. 1.20 999. 2-Speed Idle
86 81 95 2222 11 096. 12111111 ATP
96 73 95 2222 11 096. PRESSURE TEST
El Paso-03 66. 097. 7.8 7.8 92 LAP rec: CNME,MNTMP,MXTMP,RVP1,RVP2,RVP2SY
1 96 XXXX 86.6 20.6 27.3 20.6 7 RGN,CY,SPD,AMBTMP,PCCN,PCHC,PCCC

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**1996 El Paso MOBILE5a Hybrid Motorist Choice NO ATP
for 24-Hour US Vehicles Emission Rates**

1	PROMPT	
El Paso --	Hybrid --	[Central & Decentral]/Annual Idle/2500 (July1996) - No ATP
1	TAMFLG	- Default: Tampering Rates
1	SPDFLG	- User input: one speed for all vehicle types
3	VMFLAG	- User input: single Vmt mix for all scenario
3	MYMRFG	- Default: AMAR, User input: Reg. Distributions
1	NEWFLG	- Default Basic exhaust rates,new fmvcp, new evap. tst
22	IMFLAG	- One I/M program (2-Speed Idle), 100% TTC
1	ALHFLG	- No additional correction factors
3	ATPFLG	- Pressure Test
5	RLFLAG	- Zero-out refueling emissions
2	LOCFLG	- User input: one LAP record for all scenarios
1	TEMFLG	- MOBILE5A calculates exhaust temperatures
3	OUTFMT	- 112-column descriptive By model year output format
4	PRTFLG	- Print HC emission factors only
1	IDLFLG	- No idle emissions calculated or printed
3	NMHFLG	- Print HC = Volatile organic compounds (VOC)
2	HCFLAG	- Print Total HC (overridden by prtflg)
.686.197.053.020.003.001.036.004	VMT mix:	LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV,MC
.042 .077 .074 .069 .065 .068 .070 .051 .055 .058	July,1990	.LDGV..MY AGES 1-10
.054 .060 .053 .042 .031 .019 .020 .019 .014 .010	Vehicle	11-20
.015 .010 .009 .008 .007	Registrations	21-25
.038 .066 .077 .068 .082 .070 .068 .048 .050 .049	.LDGT1.MY AGES	1-10
.036 .048 .044 .039 .031 .021 .026 .024 .019 .013		11-20
.025 .016 .016 .013 .012		21-25
.037 .062 .059 .037 .065 .052 .055 .042 .051 .040	.LDGT2.MY AGES	1-10
.037 .075 .062 .064 .051 .045 .045 .035 .018 .011		11-20
.017 .011 .011 .009 .009		21-25
.021 .031 .027 .033 .047 .052 .048 .034 .043 .040	.HDGV..MY AGES	1-10
.053 .073 .057 .046 .036 .048 .047 .042 .034 .026		11-20
.049 .032 .031 .026 .025		21-25
.042 .077 .074 .069 .065 .068 .070 .051 .055 .058	.LDDV..MY AGES	1-10
.054 .060 .053 .042 .031 .019 .020 .019 .014 .010		11-20
.015 .010 .009 .008 .007		21-25
.038 .066 .077 .068 .082 .070 .068 .048 .050 .049	.LDDT..MY AGES	1-10
.036 .048 .044 .039 .031 .021 .026 .024 .019 .013		11-20
.025 .016 .016 .013 .012		21-25
.028 .024 .028 .046 .059 .087 .066 .042 .057 .075	.HDDV..MY AGES	1-10
.095 .054 .069 .050 .019 .023 .028 .032 .026 .015		11-20
.022 .015 .014 .012 .014		21-25
.024 .063 .044 .053 .102 .094 .068 .086 .103 .090	.MC...MY AGES	1-10
.074 .196 .000 .000 .000 .000 .000 .000 .000 .000		11-20
.000 .000 .000 .000 .000		21-25
87 20 73 95 03 03 096 1 1 2222 2211 220. 1.20 999.	2-Speed Idle	
96 73 95 2222 11 096.	PRESSURE TEST	
El Paso-03	66. 097. 7.8 7.8 92	LAP rec:SCNME,MNTMP,MXTMP,RVP1,RVP2,RVP2SY
1 96 XXXX 86.6 20.6 27.3 20.6 7		RGN,CY,SPD,AMBTMP,PCCN,PCHC,PCCC

**1996 El Paso MOBILE5a Juarez Input²
for 24-Hour Mexican Vehicle Emission Rates**

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1          PROMPT
1 El Paso, Ozone Season - 24 Hour 1996
1          TAMFLG - Default: Tampering Rates
1          SPDFLG - User input: one speed for all vehicle types
3          VMFLAG - User input: single VMT mix for all scenario
3          MYMRFG - Default: AMAR, User input: Reg. Distributions
5          NEWFLG - Dflt: Basic exhaust emis. rates, Disable new clean air act r
1          IMFLAG - no I/M
1          ALHFLG - No additional correction factors
1          ATPFLG - no atp
5          RLFLAG - Zero-out refueling emissions
2          LOCFLG - User input: one LAP record for all scenarios
1          TEMFLG - MOBILE5 calculates exhaust temperatures
4          OUTFMT - 80-column descriptive format
4          PRTFLG - Print all three pollutant emission factors
1          IDLFLG - No idle emissions calculated or printed
3          NMHFLG - Print HC = volatile organic compounds (VOC)
1          HCFLAG - Print total HC
.679.195.053.019.010.003.037.004 VMT mix: LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV
.0174.0577.0631.0560.0576.0532.0551.0560.0732.0740 LDGV El Paso
.0674.0629.0595.0503.0311.0251.0219.0173.0202.0165 LDGV
.0124.0083.0050.0057.0331 LDGV
.0206.0484.0628.0637.0532.0463.0436.0458.0569.0644 LDGT1
.0522.0603.0498.0447.0314.0311.0289.0210.0266.0235 LDGT1
.0196.0156.0107.0119.0670 LDGT1
.0197.0623.0774.0592.0380.0478.0471.0266.0387.0357 LDGT2
.0418.0463.0402.0395.0266.0304.0258.0349.0433.0380 LDGT2
.0289.0213.0144.0243.0918 LDGT2
.0097.0132.0607.0079.0079.0185.0379.0255.0299.0255 HDGV
.0361.0396.0449.0370.0290.0502.0273.0467.0687.0572 HDGV
.0431.0290.0370.0387.1788 HDGV
.0174.0577.0631.0560.0576.0532.0551.0560.0732.0740 LDDV
.0674.0629.0595.0503.0311.0251.0219.0173.0202.0165 LDDV
.0124.0083.0050.0057.0331 LDDV
.0206.0484.0628.0637.0532.0463.0436.0458.0569.0644 LDDT
.0522.0603.0498.0447.0314.0311.0289.0210.0266.0235 LDDT
.0196.0156.0107.0119.0670 LDDT
.0400.0550.0300.0575.0652.0650.0450.0587.0450.0525 HDDV
.0625.0650.0587.0600.0437.0350.0375.0225.0137.0200 HDDV
.0100.0050.0075.0100.0350 HDDV
.0297.1279.0894.0638.0615.0359.0256.0315.0303.0265 MC
.0315.4464.0000.0000.0000.0000.0000.0000.0000.0000 MC
.0000.0000.0000.0000.0000 MC
18.9 36.1 8.2 8.2 90 LAP rec: SCNME,MNTM
1 96 XXXX 30.1 20.6 27.3 20.6 7 RGN,CY,SPD,AMBTMP,P

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²Temperatures are in Celsius for MOBILE Juarez

**1996 Hidalgo MOBILE5a Input
for 24-Hour US Vehicle Emission Rates**

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1      PROMPT
1 Hidalgo, Ozone Season - 24 Hour 1996
1      TAMFLG - Default: Tampering Rates
1      SPDFLG - User input: one speed for all vehicle types
3      VMFLAG - User input: single VMT mix for all scenario
3      MYMRFG - Default: AMAR, User input: Reg. Distributions
5      NEWFLG - Dflt: Basic exhaust emis. rates, Disable new clean air act r
1      IMFLAG - no I/M
1      ALHFLG - No additional correction factors
1      ATPFLG - no atp
5      RLFLAG - Zero-out refueling emissions
2      LOCFLG - User input: one LAP record for all scenarios
1      TEMFLG - MOBILE5 calculates exhaust temperatures
4      OUTFMT - 80-column descriptive format
4      PRTFLG - Print all three pollutant emission factors
1      IDLFLG - No idle emissions calculated or printed
3      NMHFLG - Print HC = volatile organic compounds (VOC)
1      HCFLAG - Print total HC
.679.195.053.019.010.003.037.004 VMT mix: LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV
.0142.0477.0565.0513.0565.0586.0645.0692.0821.0807 LDGV Hidalgo
.0685.0683.0691.0547.0342.0288.0213.0150.0163.0113 LDGV
.0078.0044.0024.0023.0143 LDGV
.0284.0581.0604.0642.0513.0473.0521.0578.0681.0726 LDGT1
.0509.0555.0544.0500.0332.0371.0320.0180.0220.0183 LDGT1
.0145.0098.0061.0054.0325 LDGT1
.0304.0640.0695.0625.0554.0343.0242.0422.0406.0476 LDGT2
.0320.0429.0398.0422.0250.0437.0359.0273.0343.0234 LDGT2
.0180.0203.0180.0156.1109 LDGT2
.0022.0030.0448.0067.0052.0075.0194.0090.0075.0112 HDGV
.0231.0321.0351.0224.0269.0388.0433.0612.0724.0612 HDGV
.0597.0627.0649.0672.2125 HDGV
.0142.0477.0565.0513.0565.0586.0645.0692.0821.0807 LDDV
.0685.0683.0691.0547.0342.0288.0213.0150.0163.0113 LDDV
.0078.0044.0024.0023.0143 LDDV
.0284.0581.0604.0642.0513.0473.0521.0578.0681.0726 LDDT
.0509.0555.0544.0500.0332.0371.0320.0180.0220.0183 LDDT
.0145.0098.0061.0054.0325 LDDT
.0103.0447.0241.0733.0584.0458.0756.0481.0447.0389 HDDV
.0515.0550.0561.0619.0321.0515.1054.0241.0286.0103 HDDV
.0149.0103.0080.0092.0172 HDDV
.0364.0756.0720.0498.0631.0400.0267.0178.0240.0302 MC
.0364.5280.0000.0000.0000.0000.0000.0000.0000.0000 MC
.0000.0000.0000.0000.0000 MC
66.0 97.0 8.2 8.2 90 LAP rec: SCNME,MNTM
1 96 XXXX 86.7 20.6 27.3 20.6 7 RGN,CY,SPD,AMBTMP,P

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**1996 Hidalgo MOBILE5a Juarez Input³
for 24-Hour Mexican Vehicle Emission Rates**

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1 PROMPT
1 Hidalgo, Ozone Season - 24 Hour 1996
1 TAMFLG - Default: Tampering Rates
1 SPDFLG - User input: one speed for all vehicle types
3 VMFLAG - User input: single VMT mix for all scenario
3 MYMRFG - Default: AMAR, User input: Reg. Distributions
5 NEWFLG - Dflt: Basic exhaust emis. rates, Disable new clean air act r
1 IMFLAG - no I/M
1 ALHFLG - No additional correction factors
1 ATPFLG - no atp
5 RLFLAG - Zero-out refueling emissions
2 LOCFLG - User input: one LAP record for all scenarios
1 TEMFLG - MOBILE5 calculates exhaust temperatures
4 OUTFMT - 80-column descriptive format
4 PRNFLG - Print all three pollutant emission factors
1 IDLFLG - No idle emissions calculated or printed
3 NMHFLG - Print HC = volatile organic compounds (VOC)
1 HCFLAG - Print total HC
.679.195.053.019.010.003.037.004 VMT mix: LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV
.0142.0477.0565.0513.0565.0586.0645.0692.0821.0807 LDGV Hidalgo
.0685.0683.0691.0547.0342.0288.0213.0150.0163.0113 LDGV
.0078.0044.0024.0023.0143 LDGV
.0284.0581.0604.0642.0513.0473.0521.0578.0681.0726 LDGT1
.0509.0555.0544.0500.0332.0371.0320.0180.0220.0183 LDGT1
.0145.0098.0061.0054.0325 LDGT1
.0304.0640.0695.0625.0554.0343.0242.0422.0406.0476 LDGT2
.0320.0429.0398.0422.0250.0437.0359.0273.0343.0234 LDGT2
.0180.0203.0180.0156.1109 LDGT2
.0022.0030.0448.0067.0052.0075.0194.0090.0075.0112 HDGV
.0231.0321.0351.0224.0269.0388.0433.0612.0724.0612 HDGV
.0597.0627.0649.0672.2125 HDGV
.0142.0477.0565.0513.0565.0586.0645.0692.0821.0807 LDDV
.0685.0683.0691.0547.0342.0288.0213.0150.0163.0113 LDDV
.0078.0044.0024.0023.0143 LDDV
.0284.0581.0604.0642.0513.0473.0521.0578.0681.0726 LDDT
.0509.0555.0544.0500.0332.0371.0320.0180.0220.0183 LDDT
.0145.0098.0061.0054.0325 LDDT
.0103.0447.0241.0733.0584.0458.0756.0481.0447.0389 HDDV
.0515.0550.0561.0619.0321.0515.1054.0241.0286.0103 HDDV
.0149.0103.0080.0092.0172 HDDV
.0364.0756.0720.0498.0631.0400.0267.0178.0240.0302 MC
.0364.5280.0000.0000.0000.0000.0000.0000.0000.0000 MC
.0000.0000.0000.0000.0000 MC
18.9 36.1 8.2 8.2 90 LAP rec: SCNME,MNTM
1 96 XXXX 30.1 20.6 27.3 20.6 7 RGN,CY,SPD,AMBTMP,P

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³Temperatures are in Celsius for MOBILE Juarez

**1996 Webb MOBILE5a Input
for 24-Hour US Vehicle Emission Rates**

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1      PROMPT
1 Webb, Ozone Season - 24 Hour 1996
1      TAMFLG - Default: Tampering Rates
1      SPDFLG - User input: one speed for all vehicle types
3      VMFLAG - User input: single VMT mix for all scenario
3      MYMRFG - Default: AMAR, User input: Reg. Distributions
5      NEWFLG - Dflt: Basic exhaust emis. rates, Disable new clean air act r
1      IMFLAG - no I/M
1      ALHFLG - No additional correction factors
1      ATPFLG - no atp
5      RLFLAG - Zero-out refueling emissions
2      LOCFLG - User input: one LAP record for all scenarios
1      TEMFLG - MOBILE5 calculates exhaust temperatures
4      OUTFMT - 80-column descriptive format
4      PRTFLG - Print all three pollutant emission factors
1      IDLFLG - No idle emissions calculated or printed
3      NMHFLG - Print HC = volatile organic compounds (VOC)
1      HCFLAG - Print total HC
.679.195.053.019.010.003.037.004 VMT mix: LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV
.0135.0450.0622.0571.0591.0546.0592.0639.0763.0778 LDGV Webb
.0704.0716.0719.0560.0350.0273.0218.0150.0179.0112 LDGV
.0084.0043.0027.0027.0151 LDGV
.0301.0536.0714.0744.0600.0541.0523.0505.0630.0575 LDGT1
.0451.0587.0568.0467.0299.0366.0314.0187.0235.0181 LDGT1
.0150.0111.0057.0062.0296 LDGT1
.0158.0930.1540.0456.0211.0246.0439.0421.0667.0544 LDGT2
.0298.0544.0544.0298.0211.0298.0281.0211.0421.0281 LDGT2
.0211.0175.0088.0053.0474 LDGT2
.0000.0068.0524.0228.0091.0114.0251.0251.0342.0410 HDGV
.0433.0752.0524.0433.0114.0456.0319.0683.0615.0456 HDGV
.0364.0228.0387.0342.1615 HDGV
.0135.0450.0622.0571.0591.0546.0592.0639.0763.0778 LDDV
.0704.0716.0719.0560.0350.0273.0218.0150.0179.0112 LDDV
.0084.0043.0027.0027.0151 LDDV
.0301.0536.0714.0744.0600.0541.0523.0505.0630.0575 LDDT
.0451.0587.0568.0467.0299.0366.0314.0187.0235.0181 LDDT
.0150.0111.0057.0062.0296 LDDT
.0025.0178.0254.0791.0789.0356.0763.0407.0738.0382 HDDV
.0534.0280.0763.0585.0178.0662.0738.0356.0789.0051 HDDV
.0025.0025.0280.0000.0051 HDDV
.0000.0313.0719.0906.0750.0656.0344.0313.0594.0313 MC
.0344.4748.0000.0000.0000.0000.0000.0000.0000.0000 MC
.0000.0000.0000.0000.0000 MC
66.0 97.0 8.2 8.2 90
1 96 xxxx 86.7 20.6 27.3 20.6 7 LAP rec: SCNME,MNTM
RGN,CY,SPD,AMBTMP,P

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**1996 Webb MOBILE5a Juarez Input⁴
for 24-Hour Mexican Vehicle Emission Rates**

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1      PROMPT
1 Webb, Ozone Season - 24 Hour 1996 - Mexican Idle
1      TAMFLG - Default: Tampering Rates
1      SPDFLG - User input: one speed for all vehicle types
3      VMFLAG - User input: single VMT mix for all scenario
3      MYMRFG - Default: AMAR, User input: Reg. Distributions
5      NEWFLG - Dflt: Basic exhaust emis. rates, Disable new clean air act r
1      IMFLAG - no I/M
1      ALHFLG - No additional correction factors
1      ATPFLG - no atp
5      RLFLAG - Zero-out refueling emissions
2      LOCFLG - User input: one LAP record for all scenarios
1      TEMFLG - MOBILE5 calculates exhaust temperatures
4      OUTFMT - 80-column descriptive format
4      PRTFLG - Print all three pollutant emission factors
1      IDLFLG - No idle emissions calculated or printed
3      NMHFLG - Print HC = volatile organic compounds (VOC)
1      HCFLAG - Print total HC
.679.195.053.019.010.003.037.004 VMT mix: LDGV,LDGT1,LDGT2,HDGV,LDDV,LDDT,HDDV
.0135.0450.0622.0571.0591.0546.0592.0639.0763.0778 LDGV Webb
.0704.0716.0719.0560.0350.0273.0218.0150.0179.0112 LDGV
.0084.0043.0027.0027.0151 LDGV
.0301.0536.0714.0744.0600.0541.0523.0505.0630.0575 LDGT1
.0451.0587.0568.0467.0299.0366.0314.0187.0235.0181 LDGT1
.0150.0111.0057.0062.0296 LDGT1
.0158.0930.1540.0456.0211.0246.0439.0421.0667.0544 LDGT2
.0298.0544.0544.0298.0211.0298.0281.0211.0421.0281 LDGT2
.0211.0175.0088.0053.0474 LDGT2
.0000.0068.0524.0228.0091.0114.0251.0251.0342.0410 HDGV
.0433.0752.0524.0433.0114.0456.0319.0683.0615.0456 HDGV
.0364.0228.0387.0342.1615 HDGV
.0135.0450.0622.0571.0591.0546.0592.0639.0763.0778 LDDV
.0704.0716.0719.0560.0350.0273.0218.0150.0179.0112 LDDV
.0084.0043.0027.0027.0151 LDDV
.0301.0536.0714.0744.0600.0541.0523.0505.0630.0575 LDDT
.0451.0587.0568.0467.0299.0366.0314.0187.0235.0181 LDDT
.0150.0111.0057.0062.0296 LDDT
.0025.0178.0254.0791.0789.0356.0763.0407.0738.0382 HDDV
.0534.0280.0763.0585.0178.0662.0738.0356.0789.0051 HDDV
.0025.0025.0280.0000.0051 HDDV
.0000.0313.0719.0906.0750.0656.0344.0313.0594.0313 MC
.0344.4748.0000.0000.0000.0000.0000.0000.0000.0000 MC
.0000.0000.0000.0000.0000 MC
18.9 36.1 8.2 8.2 90 LAP rec: SCNME,MNTM
1 96 XXXX 30.1 20.6 27.3 20.6 7 RGN,CY,SPD,AMBTMP,P

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⁴Temperatures are in Celsius for MOBILE Juarez

Cameron 1996 VOC MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
3	21.22486	23.25776	33.22236	52.36642	1.680194	2.456182	5.427668	18.05890
4	14.74680	16.36213	23.40321	40.18781	1.595184	2.331911	5.153055	15.94908
5	11.32777	12.67582	18.07476	33.59577	1.515809	2.215877	4.896642	14.38645
6	9.243385	10.40656	14.75605	29.32280	1.441651	2.107470	4.657084	13.20699
7	7.850522	8.880369	12.50692	26.23077	1.372329	2.006131	4.433146	12.30134
8	7.057787	7.964256	11.13568	24.26031	1.307490	1.911347	4.223692	11.59499
9	6.450113	7.265779	10.09061	22.59902	1.246811	1.822644	4.027676	11.03617
10	5.952102	6.703001	9.252987	21.13651	1.189995	1.739587	3.844139	10.58817
11	5.533927	6.239260	8.567755	19.83840	1.136768	1.661778	3.672195	10.22455
12	5.175638	5.849806	7.997217	18.67896	1.086878	1.588846	3.511031	9.925914
13	4.863391	5.517334	7.514761	17.63822	1.040092	1.520453	3.359895	9.677820
14	4.587278	5.229397	7.101097	16.70017	.9961966	1.456284	3.218095	9.469378
15	4.340027	4.976820	6.741942	15.85170	.9549936	1.396052	3.084994	9.292255
16	4.116177	4.752710	6.426523	15.08190	.9163007	1.339489	2.960001	9.140014
17	3.911553	4.551794	6.146586	14.38155	.8799496	1.286349	2.842573	9.007624
18	3.722912	4.369987	5.895721	13.74280	.8457845	1.236405	2.732207	8.891138
19	3.547696	4.204083	5.668902	13.15889	.8136616	1.189446	2.628438	8.787428
20	3.395601	4.068481	5.483439	12.63529	.7834479	1.145279	2.530836	8.694019
21	3.279301	3.937556	5.304227	12.17258	.7550203	1.103722	2.439003	8.608947
22	3.172758	3.817461	5.140168	11.74927	.7282647	1.064610	2.352573	8.530663
23	3.074690	3.706745	4.989107	11.36141	.7030757	1.027787	2.271203	8.457949
24	2.984035	3.604227	4.849308	11.00556	.6793554	.9931118	2.194578	8.389861
25	2.899904	3.508946	4.719360	10.67862	.6570134	.9604513	2.122404	8.325676
26	2.821550	3.420112	4.598124	10.37789	.6359657	.9296826	2.054412	8.264857
27	2.748341	3.337073	4.484664	10.10094	.6161340	.9006919	1.990348	8.207015
28	2.679737	3.259291	4.378227	9.845600	.5974464	.8733735	1.929980	8.151876
29	2.615276	3.186310	4.278190	9.609954	.5798355	.8476292	1.873090	8.099272
30	2.554560	3.117748	4.184040	9.392273	.5632393	.8233680	1.819478	8.049097
31	2.497243	3.053275	4.095353	9.191010	.5475997	.8005055	1.768956	8.001320
32	2.443021	2.992605	4.011773	9.004779	.5328631	.7789629	1.721351	7.955933
33	2.391630	2.935486	3.932993	8.832333	.5189796	.7586672	1.676502	7.912968
34	2.342835	2.881694	3.858749	8.672550	.5059028	.7395510	1.634259	7.872472
35	2.296428	2.831024	3.788807	8.524424	.4935897	.7215512	1.594483	7.834495
36	2.252223	2.783290	3.722956	8.387040	.4820002	.7046091	1.557045	7.799094
37	2.210052	2.738317	3.660999	8.259582	.4710972	.6886707	1.521824	7.766309
38	2.169765	2.695943	3.602749	8.141306	.4608462	.6736854	1.488710	7.736177
39	2.131226	2.656011	3.548028	8.031547	.4512153	.6596063	1.457598	7.708713
40	2.094310	2.618371	3.496658	7.929697	.4421745	.6463902	1.428392	7.683904
41	2.058902	2.582879	3.448461	7.835212	.4336963	.6339964	1.401005	7.661718
42	2.024898	2.549388	3.403254	7.747600	.4257552	.6223878	1.375352	7.642084
43	1.992198	2.517756	3.360846	7.666417	.4183275	.6115296	1.351357	7.624905
44	1.960712	2.487833	3.321041	7.591257	.4113912	.6013898	1.328951	7.610027
45	1.930352	2.459467	3.283622	7.521762	.4049261	.5919388	1.308066	7.597267
46	1.901037	2.432497	3.248358	7.457606	.3989135	.5831493	1.288643	7.586373
47	1.872683	2.406747	3.214993	7.398497	.3933361	.5749961	1.270626	7.577036
48	1.845499	2.381814	3.182779	7.343331	.3881782	.5674560	1.253964	7.568891
49	1.836665	2.372478	3.169243	7.285714	.3834252	.5605078	1.238610	7.568891
50	1.828349	2.363691	3.156505	7.233376	.3790638	.5541322	1.224521	7.568891
51	1.820512	2.355409	3.144505	7.186053	.3750820	.5483114	1.211658	7.568891
52	1.813117	2.347595	3.133185	7.143511	.3714687	.5430293	1.199986	7.568891
53	1.806131	2.340214	3.122496	7.105542	.3682141	.5382717	1.189472	7.568891
54	1.799525	2.333234	3.112390	7.071970	.3653094	.5340253	1.180089	7.568891
55	1.793271	2.326627	3.102827	7.042639	.3627466	.5302790	1.171810	7.568891
56	1.841307	2.406275	3.220835	7.017419	.3605189	.5270225	1.164614	7.672871
57	1.889649	2.486245	3.339311	6.996202	.3586205	.5242472	1.158481	7.776852
58	1.938275	2.566516	3.458225	6.978901	.3570459	.5219455	1.153395	7.880831
59	1.987166	2.647067	3.577546	6.965448	.3557914	.5201116	1.149342	7.984813
60	2.036305	2.727880	3.697249	6.955799	.3548534	.5187402	1.146312	8.088793
61	2.085676	2.808939	3.817308	6.949924	.3542293	.5178281	1.144296	8.192774
62	2.135264	2.890228	3.937700	6.947816	.3539178	.5173726	1.143290	8.296753
63	2.185056	2.971730	4.058405	6.949487	.3539178	.5173726	1.143290	8.400734
64	2.235038	3.053436	4.179403	6.954965	.3542293	.5178281	1.144296	8.504715
65	2.285200	3.135331	4.300677	6.964304	.3548534	.5187402	1.146312	8.608694

Cameron 1996 CO MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HQGV	LDDV	LDDT	HDDV	MC
3	142.1627	183.2083	273.9937	520.0842	5.450415	6.343323	38.79225	181.0178
4	108.7354	140.3616	211.1866	475.1784	5.023172	5.846087	35.75144	144.3655
5	88.49777	113.9229	170.6750	435.1063	4.637854	5.397645	33.00901	117.9114
6	74.93896	96.04256	142.5355	399.2910	4.289892	4.992680	30.53247	98.39046
7	65.23349	83.20467	122.0239	367.2308	3.975266	4.626509	28.29317	83.69166
8	57.95269	73.58360	106.5373	338.4886	3.690425	4.295005	26.26587	72.41704
9	52.29529	66.13381	94.51817	312.6831	3.432235	3.994517	24.42826	63.62004
10	47.77691	60.21288	84.97643	289.4813	3.197923	3.721819	22.76059	56.64642
11	44.08749	55.40462	77.25432	268.5912	2.985036	3.474056	21.24541	51.03512
12	41.01941	51.42779	70.89925	249.7575	2.791396	3.248693	19.86721	46.45560
13	38.42850	48.08578	65.59077	232.7560	2.615072	3.043483	18.61226	42.66682
14	36.21152	45.23715	61.09668	217.3894	2.454349	2.856430	17.46835	39.49049
15	34.29270	42.77773	57.24512	203.4846	2.307701	2.685757	16.42461	36.79294
16	32.61516	40.62925	53.90685	190.8887	2.173767	2.529882	15.47136	34.47275
17	31.13542	38.73204	50.98310	179.4669	2.051337	2.387394	14.59999	32.45224
18	29.81975	37.03991	48.39754	169.1000	1.939328	2.257037	13.80279	30.67140
19	28.64155	35.51683	46.09049	159.6830	1.836776	2.137683	13.07289	29.08365
20	27.50491	34.33654	44.31138	151.1225	1.742815	2.028330	12.40414	27.65266
21	26.41095	33.07656	42.54974	143.3358	1.656673	1.928076	11.79105	26.35005
22	25.41437	31.91706	40.94167	136.2499	1.577658	1.836116	11.22867	25.15375
23	24.50230	30.84412	39.46480	129.7994	1.505149	1.751728	10.71260	24.04654
24	23.66410	29.84679	38.10119	123.9267	1.438587	1.674262	10.23886	23.01517
25	22.89094	28.91642	36.83645	118.5803	1.377474	1.603137	9.803904	22.04950
26	22.17542	28.04617	35.65906	113.7145	1.321360	1.537830	9.404522	21.14181
27	21.51132	27.23061	34.55969	109.2884	1.269841	1.477871	9.037844	20.28634
28	20.89335	26.46542	33.53087	105.2660	1.222553	1.422837	8.701284	19.47885
29	20.31701	25.74711	32.56648	101.6149	1.179171	1.372347	8.392518	18.71624
30	19.77843	25.07281	31.66156	98.30653	1.139400	1.326061	8.109455	17.99626
31	19.27423	24.44009	30.81200	95.31529	1.102976	1.283669	7.850213	17.31732
32	18.80149	23.84686	30.01438	92.61866	1.069661	1.244897	7.613102	16.67826
33	18.35764	23.29124	29.26575	90.19649	1.039242	1.209495	7.396602	16.07817
34	17.94040	22.77152	28.56358	88.03114	1.011528	1.177240	7.199349	15.51634
35	17.54773	22.28610	27.90560	86.10698	.9863458	1.147933	7.020123	14.99204
36	17.17783	21.83344	27.28973	84.41040	.9635428	1.121394	6.857828	14.50458
37	16.82904	21.41206	26.71405	82.92948	.9429817	1.097465	6.711488	14.05319
38	16.49989	21.02048	26.17671	81.65399	.9245405	1.076002	6.580236	13.63691
39	16.18900	20.65725	25.67591	80.57518	.9081113	1.056882	6.463305	13.25471
40	15.89513	20.32088	25.20983	79.68575	.8935989	1.039992	6.360014	12.90530
41	15.61711	20.00985	24.77666	78.97968	.8809201	1.025236	6.269776	12.58714
42	15.35387	19.72259	24.37451	78.45229	.8700032	1.012530	6.192078	12.29856
43	15.10437	19.45740	24.00141	78.10004	.8607869	1.001804	6.126482	12.03749
44	14.86764	19.21243	23.65522	77.92061	.8532196	.9929973	6.072623	11.80159
45	14.64272	18.98562	23.33368	77.91283	.8472594	.9860609	6.030202	11.58816
46	14.42865	18.77460	23.03426	78.07661	.8428736	.9809562	5.998988	11.39412
47	14.22449	18.57667	22.75424	78.41307	.8400378	.9776561	5.978805	11.21587
48	14.02926	18.38871	22.49048	78.92442	.8387368	.9761419	5.969545	11.04940
49	14.02926	18.38871	22.49048	79.61406	.8389632	.9764054	5.971156	11.04940
50	14.02926	18.38871	22.49048	80.48659	.8407186	.9784484	5.983649	11.04940
51	14.02926	18.38871	22.49048	81.54790	.8440123	.9822816	6.007092	11.04940
52	14.02926	18.38871	22.49048	82.80518	.8488623	.9879261	6.041611	11.04940
53	14.02926	18.38871	22.49048	84.26703	.8552955	.9954132	6.087398	11.04940
54	14.02926	18.38871	22.49048	85.94353	.8633472	1.004784	6.144705	11.04940
55	14.02926	18.38871	22.49048	87.84648	.8730624	1.016091	6.213850	11.04940
56	16.11958	21.81234	27.13451	89.98928	.8844950	1.029397	6.295221	13.71042
57	18.20989	25.23598	31.77854	92.38739	.8977100	1.044776	6.389274	16.37143
58	20.30021	28.65963	36.42257	95.05832	.9127819	1.062317	6.496547	19.03245
59	22.39052	32.08326	41.06660	98.02187	.9297975	1.082121	6.617653	21.69347
60	24.48083	35.50690	45.71063	101.3004	.9488560	1.104301	6.753297	24.35449
61	26.57115	38.93054	50.35467	104.9192	.9700688	1.128989	6.904274	27.01550
62	28.66146	42.35418	54.99870	108.9066	.9935625	1.156332	7.071487	29.67652
63	30.75178	45.77782	59.64272	113.2945	1.019479	1.186494	7.255941	32.33754
64	32.84209	49.20145	64.28676	118.1188	1.047977	1.219661	7.458771	34.99856
65	34.93240	52.62509	68.93080	123.4197	1.079234	1.256038	7.681237	37.65958

Cameron 1996 NOx MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
3	2.799144	3.083797	3.182453	4.721006	2.844705	3.328282	25.35917	.8271292
4	2.567753	2.832544	2.964019	4.769860	2.724893	3.188103	24.29111	.7911367
5	2.427990	2.681005	2.833326	4.818713	2.613837	3.058169	23.30109	.7612685
6	2.334195	2.579759	2.746912	4.867567	2.510870	2.937698	22.38319	.7370554
7	2.266785	2.507580	2.686102	4.916420	2.415387	2.825983	21.53200	.7180440
8	2.215958	2.453818	2.641518	4.965273	2.326836	2.722379	20.74261	.7037983
9	2.176259	2.412522	2.607915	5.014126	2.244717	2.626301	20.01057	.6938979
10	2.144410	2.380095	2.582119	5.062980	2.168573	2.537213	19.33178	.6879393
11	2.118315	2.354225	2.562085	5.111833	2.097989	2.454630	18.70256	.6855354
12	2.096573	2.333350	2.546429	5.160686	2.032587	2.378110	18.11953	.6863158
13	2.078209	2.316371	2.534176	5.209540	1.972022	2.307250	17.57962	.6899261
14	2.062522	2.302489	2.524614	5.258392	1.915980	2.241681	17.08004	.6960289
15	2.048997	2.291104	2.517209	5.307246	1.864176	2.181071	16.61823	.7043028
16	2.037242	2.281757	2.511550	5.356100	1.816350	2.125115	16.19189	.7144433
17	2.026956	2.274086	2.507315	5.404953	1.772267	2.073538	15.79890	.7261623
18	2.017901	2.267800	2.504244	5.453806	1.731710	2.026087	15.43736	.7391877
19	2.009891	2.262667	2.502127	5.502660	1.694486	1.982535	15.10552	.7532646
20	2.011883	2.263459	2.506248	5.551513	1.660418	1.942675	14.80182	.7681543
21	2.024791	2.282326	2.526652	5.600367	1.629347	1.906323	14.52484	.7836343
22	2.036613	2.299833	2.545658	5.649220	1.601129	1.873309	14.27330	.7994988
23	2.047492	2.316128	2.563417	5.698072	1.575636	1.843482	14.04604	.8155586
24	2.057546	2.331332	2.580053	5.746926	1.552753	1.816708	13.84204	.8316410
25	2.066874	2.345549	2.595671	5.795780	1.532376	1.792867	13.66039	.8475895
26	2.075561	2.358863	2.610360	5.844633	1.514415	1.771853	13.50028	.8632642
27	2.083677	2.371346	2.624200	5.893486	1.498792	1.753574	13.36101	.8785417
28	2.091285	2.383062	2.637259	5.942340	1.485437	1.737950	13.24196	.8933153
29	2.098437	2.394066	2.649601	5.991193	1.474294	1.724912	13.14262	.9074945
30	2.105180	2.404407	2.661282	6.040047	1.465314	1.714405	13.06256	.9210051
31	2.111554	2.414131	2.672356	6.088899	1.458457	1.706383	13.00144	.9337896
32	2.117598	2.423279	2.682876	6.137753	1.453696	1.700813	12.95900	.9458078
33	2.123343	2.431893	2.692892	6.186606	1.451009	1.697669	12.93505	.9570344
34	2.128820	2.440009	2.702454	6.235458	1.450385	1.696939	12.92949	.9674616
35	2.134057	2.447667	2.711610	6.284313	1.451822	1.698620	12.94229	.9770982
36	2.139078	2.454903	2.720413	6.333166	1.455325	1.702718	12.97352	.9859686
37	2.143907	2.461756	2.728912	6.382019	1.460910	1.709253	13.02330	.9941140
38	2.148569	2.468264	2.737160	6.430873	1.468600	1.718250	13.09186	1.001593
39	2.153083	2.474467	2.745212	6.479725	1.478428	1.729749	13.17947	1.008481
40	2.157471	2.480405	2.753123	6.528579	1.490437	1.743799	13.28653	1.014866
41	2.161754	2.486122	2.760953	6.577433	1.504678	1.760462	13.41348	1.020858
42	2.165951	2.491661	2.768762	6.626286	1.521215	1.779809	13.56090	1.026580
43	2.170082	2.497067	2.776613	6.675138	1.540118	1.801926	13.72941	1.032171
44	2.174167	2.502390	2.784572	6.723993	1.561473	1.826910	13.91977	1.037790
45	2.178226	2.507679	2.792709	6.772846	1.585372	1.854873	14.13283	1.043609
46	2.182277	2.512988	2.801095	6.821700	1.611925	1.885940	14.36954	1.049818
47	2.186342	2.518370	2.809806	6.870553	1.641252	1.920251	14.63097	1.056623
48	2.190441	2.523883	2.818920	6.919406	1.673487	1.957966	14.91833	1.064247
49	2.275220	2.626201	2.939662	6.968259	1.708779	1.999258	15.23294	1.098901
50	2.360001	2.728518	3.060404	7.017112	1.747296	2.044322	15.57630	1.133556
51	2.444780	2.830836	3.181146	7.065966	1.789219	2.093372	15.95002	1.168210
52	2.529560	2.933153	3.301888	7.114819	1.834752	2.146645	16.35593	1.202865
53	2.614340	3.035471	3.422630	7.163672	1.884117	2.204402	16.79599	1.237520
54	2.699120	3.137788	3.543373	7.212526	1.937560	2.266929	17.27241	1.272174
55	2.783900	3.240106	3.664115	7.261378	1.995349	2.334543	17.78758	1.306828
56	2.868680	3.342423	3.784857	7.310232	2.057783	2.407590	18.34414	1.341483
57	2.953460	3.444741	3.905599	7.359086	2.125186	2.486450	18.94500	1.376138
58	3.038239	3.547059	4.026341	7.407939	2.197916	2.571543	19.59335	1.410792
59	3.123019	3.649376	4.147083	7.456792	2.276363	2.663327	20.29268	1.445447
60	3.207799	3.751693	4.267825	7.505645	2.360962	2.762307	21.04684	1.480101
61	3.292579	3.854011	4.388568	7.554500	2.452185	2.869037	21.86004	1.514756
62	3.377359	3.956328	4.509310	7.603352	2.550551	2.984124	22.73693	1.549410
63	3.462139	4.058646	4.630052	7.652205	2.656632	3.108239	23.68259	1.584065
64	3.546918	4.160963	4.750794	7.701059	2.771058	3.242115	24.70265	1.618719
65	3.631698	4.263281	4.871537	7.749912	2.894520	3.386565	25.80325	1.653374

Cameron 1996 VOC MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV	MC
3	32.69744	37.37788	54.50719	71.74557	1.263456	1.701895	6.181769	20.88094
4	22.39355	23.33808	35.46884	55.09103	1.199859	1.616228	5.870606	18.24039
5	17.52216	18.32521	27.56983	46.31823	1.140456	1.536211	5.579958	16.28224
6	14.31452	15.00497	22.37024	40.28490	1.081589	1.456917	5.291939	14.72268
7	12.27336	12.88600	19.07192	36.17158	1.029887	1.387274	5.038977	13.60347
8	10.99588	11.53369	17.03284	33.49270	.9815108	1.322110	4.802283	12.72905
9	10.00437	10.48989	15.46655	31.20806	.9362212	1.261104	4.580691	12.03618
10	9.198514	9.650367	14.21244	29.19445	.8937985	1.203960	4.373128	11.47995
11	8.528227	8.960526	13.18863	27.40625	.8540412	1.150406	4.178606	11.02792
12	7.959838	8.383236	12.33866	25.80906	.8167626	1.100192	3.996212	10.65625
13	7.469889	7.892400	11.62247	24.37593	.7817913	1.053085	3.825106	10.34719
14	7.041542	7.469164	11.01089	23.08519	.7489688	1.008872	3.664514	10.08730
15	6.662405	7.099593	10.48224	21.91896	.7181489	.9673574	3.513720	9.866301
16	6.323157	6.773177	10.02013	20.86233	.6891968	.9283584	3.372065	9.676229
17	5.998461	6.464681	9.588005	19.84561	.6603422	.8894908	3.230887	9.501238
18	5.720714	6.203874	9.226479	18.97707	.6348590	.8551646	3.106204	9.356791
19	5.465549	5.966769	8.900990	18.18475	.6108905	.8228787	2.988932	9.228069
20	5.238003	5.793129	8.641987	17.46748	.5883387	.7925010	2.878591	9.112041
21	5.055398	5.611998	8.384781	16.82108	.5671126	.7639092	2.774738	9.006300
22	4.888256	5.445519	8.149191	16.22964	.5471283	.7369900	2.676959	8.908942
23	4.734548	5.291715	7.932106	15.68775	.5283077	.7116383	2.584875	8.818476
24	4.592590	5.148982	7.731018	15.19059	.5105785	.6877570	2.498131	8.733733
25	4.460987	5.016032	7.543908	14.73392	.4938740	.6652557	2.416400	8.653829
26	4.338563	4.891817	7.369142	14.31394	.4781318	.6440507	2.339377	8.578096
27	4.224333	4.775484	7.205408	13.92730	.4632944	.6240645	2.266781	8.506054
28	4.111004	4.659737	7.042339	13.54966	.4484612	.6040841	2.194207	8.433179
29	4.011156	4.557586	6.898218	13.22263	.4353251	.5863894	2.129935	8.367817
30	3.917293	4.461530	6.762467	12.92069	.4229417	.5697089	2.069346	8.305464
31	3.828883	4.371160	6.634514	12.64170	.4112682	.5539845	2.012231	8.246074
32	3.745466	4.286125	6.513892	12.38372	.4002652	.5391633	1.958396	8.189642
33	3.666637	4.206117	6.400203	12.14504	.3898956	.5251954	1.907660	8.136206
34	3.592035	4.130859	6.293105	11.92409	.3801253	.5120345	1.859857	8.085822
35	3.521343	4.060099	6.192302	11.71947	.3709225	.4996382	1.814830	8.038559
36	3.454271	3.993601	6.097520	11.52990	.3622576	.4879664	1.772434	7.994478
37	3.390562	3.931144	6.008508	11.35425	.3541030	.4769821	1.732536	7.953636
38	3.329980	3.872515	5.925023	11.19149	.3464334	.4666511	1.695011	7.916075
39	3.268798	3.814184	5.842112	11.03163	.3387893	.4563542	1.657609	7.879780
40	3.214004	3.762799	5.769278	10.89259	.3320467	.4472719	1.624620	7.849007
41	3.161727	3.714614	5.701235	10.76385	.3257216	.4387519	1.593673	7.821476
42	3.111796	3.669422	5.637728	10.64472	.3197952	.4307690	1.564677	7.797106
43	3.064047	3.627005	5.578480	10.53460	.3142500	.4232995	1.537545	7.775764
44	3.018323	3.587143	5.523200	10.43291	.3090698	.4163216	1.512200	7.757273
45	2.974472	3.549591	5.471557	10.33915	.3042396	.4098152	1.488567	7.741397
46	2.932345	3.514093	5.423207	10.25288	.2997456	.4037618	1.466578	7.727830
47	2.891793	3.480360	5.377742	10.17369	.2955750	.3981439	1.446173	7.716197
48	2.852878	3.447875	5.334072	10.10010	.2917162	.3929461	1.427293	7.706039
49	2.843322	3.437464	5.314171	10.02100	.2881584	.3881538	1.409886	7.705851
50	2.834823	3.428113	5.296012	9.949213	.2848919	.3837537	1.393903	7.705851
51	2.826325	3.418763	5.277865	9.880534	.2817302	.3794948	1.378434	7.705851
52	2.818790	3.410474	5.261782	9.822714	.2790369	.3758669	1.365257	7.705851
53	2.811670	3.402641	5.246592	9.771224	.2766099	.3725976	1.353382	7.705851
54	2.804935	3.395233	5.232229	9.725821	.2744427	.3696784	1.342778	7.705851
55	2.798940	3.388695	5.219261	9.686298	.2725295	.3671014	1.333418	7.706255
56	2.915481	3.534564	5.406282	9.652479	.2708654	.3648597	1.325275	7.835610
57	3.032332	3.680774	5.593972	9.624224	.2694457	.3629473	1.318329	7.964965
58	3.149471	3.827302	5.782280	9.601412	.2682667	.3613594	1.312561	8.094320
59	3.266881	3.974126	5.971168	9.583959	.2673255	.3600915	1.307956	8.223677
60	3.384541	4.121228	6.160595	9.571804	.2666195	.3591405	1.304501	8.353032
61	3.502438	4.268590	6.350530	9.564911	.2661468	.3585038	1.302189	8.482388
62	3.642725	4.443896	6.576690	9.563559	.2658870	.3581537	1.300917	8.635997
63	3.716678	4.536291	6.695971	9.565833	.2658814	.3581462	1.300890	8.716844
64	3.864811	4.721334	6.935026	9.576626	.2661413	.3584963	1.302162	8.878537
65	4.013229	4.906688	7.174690	9.595860	.2667640	.3593351	1.305208	9.040232

Cameron 1996 CO MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
3	285.3801	325.0626	426.9785	679.2717	4.650610	5.302702	41.50069	182.2509
4	212.9957	220.3595	302.2074	617.4169	4.287868	4.889097	38.26368	145.4620
5	171.9027	177.3125	243.6524	565.5972	3.960540	4.515873	35.34271	118.8744
6	142.9209	146.5950	200.6649	516.5255	3.647274	4.158683	32.54721	98.18335
7	123.5593	125.9854	171.3501	475.3014	3.381377	3.855501	30.17441	83.62997
8	108.9965	110.4915	149.1383	438.3200	3.140511	3.580861	28.02500	72.44576
9	97.65992	98.46998	131.8577	405.0963	2.922056	3.331776	26.07558	63.70464
10	88.59392	88.90346	118.1166	375.2062	2.723695	3.105602	24.30546	56.76502
11	81.18413	81.12880	106.9844	348.2784	2.543372	2.899995	22.69631	51.17378
12	75.01775	74.69573	97.81715	323.9872	2.379266	2.712878	21.23188	46.60537
13	69.80724	69.28821	90.15718	302.0466	2.229758	2.542407	19.89771	42.82202
14	65.34628	64.67819	83.67151	282.2052	2.093409	2.386939	18.68097	39.64756
15	61.48311	60.69728	78.11305	264.2412	1.968937	2.245015	17.57022	36.94967
16	58.10363	57.21877	73.29544	247.9597	1.855202	2.115333	16.55529	34.62785
17	54.94566	53.96542	68.82947	232.3114	1.744987	1.989663	15.57176	32.48710
18	52.30980	51.24167	65.12508	218.9776	1.650303	1.881703	14.72682	30.71696
19	49.94611	48.78684	61.81712	206.8586	1.563568	1.782806	13.95283	29.13731
20	47.95348	47.25558	59.44022	195.8359	1.484060	1.692150	13.24332	27.71252
21	46.22120	45.70430	57.15144	185.8043	1.411133	1.608997	12.59254	26.41473
22	44.63956	44.26848	55.05857	176.6705	1.344206	1.532686	11.99530	25.22220
23	43.18860	42.93176	53.13248	168.3516	1.282760	1.462624	11.44697	24.11802
24	41.85195	41.68152	51.34995	160.7737	1.226328	1.398279	10.94339	23.08907
25	40.61610	40.50816	49.69249	153.8713	1.174490	1.339172	10.48080	22.12536
26	39.46980	39.40435	48.14545	147.5860	1.126869	1.284875	10.05585	21.21923
27	38.40368	38.36462	46.69718	141.8656	1.083127	1.234999	9.665508	20.36500
28	37.34995	37.32543	45.25629	136.3552	1.040560	1.186464	9.285654	19.50952
29	36.42553	36.40576	43.98457	131.6596	1.003887	1.144649	8.958399	18.75024
30	35.56060	35.54018	42.78883	127.4026	.9702521	1.106297	8.658249	18.03320
31	34.75021	34.72671	41.66432	123.5517	.9394327	1.071157	8.383224	17.35683
32	33.99009	33.96365	40.60723	120.0781	.9112310	1.039001	8.131561	16.71998
33	33.27644	33.24946	39.61437	116.9564	.8854680	1.009625	7.901658	16.12176
34	32.60592	32.58264	38.68296	114.1638	.8619831	.9828473	7.692087	15.56148
35	31.97550	31.96177	37.81056	111.6807	.8406328	.9585034	7.501563	15.03843
36	31.38245	31.38533	36.99495	109.4895	.8212882	.9364462	7.328936	14.55192
37	30.82429	30.85180	36.23400	107.5751	.8038338	.9165445	7.173178	14.10116
38	30.29873	30.35954	35.52562	105.9243	.7881676	.8986817	7.033378	13.68528
39	29.77369	29.87986	34.82822	104.4468	.7733804	.8818210	6.901421	13.28040
40	29.30883	29.46723	34.22159	103.3065	.7611275	.8678502	6.792082	12.93285
41	28.87050	29.09027	33.66085	102.4012	.7504183	.8556395	6.696516	12.61629
42	28.45691	28.74679	33.14358	101.7249	.7411926	.8451200	6.614187	12.32897
43	28.06631	28.43436	32.66706	101.2731	.7333989	.8362334	6.544638	12.06892
44	27.69699	28.15023	32.22843	101.0429	.7269943	.8289309	6.487486	11.83383
45	27.34723	27.89123	31.82440	101.0328	.7219439	.8231722	6.442417	11.62100
46	27.01523	27.65362	31.45130	101.2427	.7182198	.8189259	6.409185	11.42742
47	26.69910	27.43302	31.10498	101.6740	.7158021	.8161693	6.387609	11.24950
48	26.39684	27.22424	30.78073	102.3295	.7146776	.8148872	6.377574	11.08334
49	26.39092	27.22016	30.77441	103.2135	.7148402	.8150724	6.379025	11.08010
50	26.39092	27.22016	30.77441	104.3318	.7162906	.8167263	6.391969	11.08010
51	26.39092	27.22016	30.77441	105.7852	.7192521	.8201030	6.418395	11.08010
52	26.39092	27.22016	30.77441	107.4123	.7233917	.8248231	6.455337	11.08010
53	26.39092	27.22016	30.77441	109.3020	.7288657	.8310647	6.504184	11.08010
54	26.39092	27.22016	30.77441	111.4671	.7357041	.8388618	6.565208	11.08010
55	26.40662	27.23825	30.79595	113.9227	.7439442	.8482574	6.638741	11.08840
56	31.42673	33.02301	37.68674	116.6859	.7536317	.8593033	6.725190	13.74188
57	36.44686	38.80780	44.57756	119.7764	.7648206	.8720610	6.825037	16.39537
58	41.46700	44.59259	51.46838	123.2166	.7775737	.8866023	6.938841	19.04885
59	46.48712	50.37739	58.35920	127.0316	.7919636	.9030098	7.067253	21.70234
60	51.50722	56.16216	65.24998	131.2500	.8080726	.9213777	7.211004	24.35582
61	56.52736	61.94695	72.14081	135.9037	.8259946	.9418126	7.370934	27.00931
62	62.48876	68.81639	80.32367	142.0457	.8497778	.9689306	7.583170	30.16033
63	65.62634	72.43185	84.63039	145.5682	.8634490	.9845186	7.705167	31.81875
64	71.90148	79.66283	93.24388	153.2678	.8933365	1.018597	7.971875	35.13560
65	78.17665	86.89383	101.8574	161.9242	.9268614	1.056823	8.271042	38.45247

Cameron 1996 NOx MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV	MC
3	3.427547	3.741192	3.769476	5.086312	2.047870	2.438940	30.77855	.8277881
4	3.011678	3.261846	3.420880	5.132987	1.962038	2.336716	29.48852	.7918732
5	2.859130	3.099102	3.287332	5.185278	1.882443	2.241922	28.29225	.7620248
6	2.749715	2.983719	3.191713	5.240836	1.804183	2.148717	27.11604	.7364417
7	2.675182	2.906504	3.127436	5.293126	1.736013	2.067529	26.09147	.7176646
8	2.618042	2.848689	3.079399	5.345417	1.672766	1.992205	25.14091	.7035900
9	2.572758	2.804248	3.042812	5.397707	1.614089	1.922321	24.25900	.6938053
10	2.535977	2.769496	3.014707	5.449998	1.559657	1.857496	23.44093	.6879138
11	2.505537	2.742038	2.993125	5.502288	1.509179	1.797379	22.68227	.6855350
12	2.479980	2.720229	2.976699	5.554579	1.462387	1.741651	21.97900	.6863047
13	2.458281	2.702898	2.964431	5.606870	1.419037	1.690022	21.32747	.6898744
14	2.439694	2.689178	2.955567	5.659159	1.378906	1.642228	20.72433	.6959121
15	2.423664	2.678405	2.949516	5.711451	1.341794	1.598028	20.16654	.7041019
16	2.409765	2.670061	2.945802	5.763741	1.307514	1.557203	19.65134	.7141438
17	2.396961	2.663392	2.943985	5.819299	1.274011	1.517301	19.14779	.7265254
18	2.386481	2.658830	2.943935	5.871589	1.245064	1.482826	18.71273	.7395090
19	2.377308	2.655645	2.945219	5.923880	1.218484	1.451171	18.31325	.7535266
20	2.373502	2.666367	2.957359	5.976170	1.194148	1.422187	17.94749	.7683435
21	2.385098	2.697467	2.985145	6.028461	1.171942	1.395740	17.61374	.7837417
22	2.395877	2.726435	3.011439	6.080750	1.151765	1.371710	17.31049	.7995186
23	2.405959	2.753502	3.036378	6.133041	1.133526	1.349988	17.03637	.8154886
24	2.415441	2.778860	3.060071	6.185332	1.117143	1.330477	16.79014	.8314815
25	2.424401	2.802667	3.082607	6.237621	1.102544	1.313091	16.57073	.8473434
26	2.432909	2.825053	3.104061	6.289913	1.089665	1.297752	16.37717	.8629366
27	2.441023	2.846134	3.124497	6.342204	1.078450	1.284395	16.20860	.8781396
28	2.449267	2.867211	3.145161	6.397762	1.068303	1.272310	16.05609	.8937473
29	2.456719	2.885895	3.163677	6.450051	1.060374	1.262867	15.93692	.9078298
30	2.463914	2.903543	3.181344	6.502343	1.053982	1.255255	15.84087	.9212502
31	2.470887	2.920225	3.198213	6.554633	1.049102	1.249443	15.76751	.9339519
32	2.477670	2.936011	3.214341	6.606925	1.045711	1.245404	15.71655	.9458943
33	2.484298	2.950967	3.229784	6.659214	1.043796	1.243123	15.68777	.9570547
34	2.490799	2.965158	3.244601	6.711504	1.043348	1.242590	15.68104	.9674243
35	2.497204	2.978648	3.258860	6.763795	1.044366	1.243803	15.69634	.9770116
36	2.503542	2.991502	3.272631	6.816085	1.046854	1.246766	15.73373	.9858418
37	2.509843	3.003789	3.285991	6.868376	1.050823	1.251492	15.79338	.9939544
38	2.516137	3.015577	3.299021	6.920666	1.056288	1.258001	15.87552	1.001406
39	2.522850	3.027635	3.312606	6.976223	1.063762	1.266902	15.98785	1.008682
40	2.529226	3.038624	3.325249	7.028515	1.072396	1.277185	16.11761	1.015020
41	2.535692	3.049345	3.337860	7.080806	1.082619	1.289361	16.27127	1.020971
42	2.542282	3.059880	3.350550	7.133096	1.094476	1.303481	16.44946	1.026656
43	2.549031	3.070316	3.363440	7.185386	1.108017	1.319608	16.65298	1.032216
44	2.555978	3.080744	3.376658	7.237677	1.123302	1.337812	16.88270	1.037804
45	2.563159	3.091261	3.390340	7.289967	1.140397	1.358172	17.13964	1.043590
46	2.570617	3.101966	3.404629	7.342256	1.159380	1.380780	17.42495	1.049761
47	2.578395	3.112967	3.419680	7.394548	1.180335	1.405737	17.73989	1.056520
48	2.586536	3.124374	3.435654	7.446838	1.203357	1.433155	18.08591	1.064085
49	2.698760	3.252248	3.583289	7.499128	1.228553	1.463162	18.46458	1.098018
50	2.813103	3.382492	3.733599	7.551419	1.256038	1.495896	18.87767	1.132479
51	2.934592	3.520877	3.893305	7.606978	1.287895	1.533836	19.35646	1.169093
52	3.048935	3.651122	4.043615	7.659268	1.320526	1.572699	19.84690	1.203554
53	3.163278	3.781368	4.193928	7.711559	1.355887	1.614813	20.37836	1.238015
54	3.277621	3.911613	4.344239	7.763848	1.394151	1.660384	20.95345	1.272476
55	3.391965	4.041857	4.494550	7.816139	1.435509	1.709640	21.57504	1.306936
56	3.506307	4.172102	4.644860	7.868429	1.480171	1.762831	22.24629	1.341397
57	3.620651	4.302347	4.795172	7.920720	1.528367	1.820231	22.97066	1.375857
58	3.734993	4.432592	4.945483	7.973010	1.580350	1.882140	23.75193	1.410318
59	3.849337	4.562837	5.095795	8.025301	1.636397	1.948890	24.59430	1.444779
60	3.963679	4.693082	5.246106	8.077591	1.696813	2.020843	25.50232	1.479240
61	4.078022	4.823327	5.396417	8.129881	1.761932	2.098397	26.48102	1.513700
62	4.213805	4.977993	5.574911	8.191977	1.845877	2.198373	27.74268	1.554622
63	4.285270	5.059396	5.668856	8.224659	1.893158	2.254683	28.45329	1.576160
64	4.428198	5.222201	5.856744	8.290022	1.994665	2.375574	29.97888	1.619236
65	4.571128	5.385008	6.044634	8.355385	2.106230	2.508444	31.65566	1.662312

El Paso 1996 VOC 24 Hour Motorist Choice Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HQGV	LDDV	LDDT	HDDV	MC
3	12.09381	12.94879	19.38739	30.40351	1.667511	2.373856	5.373115	16.30799
4	8.639574	9.352945	13.78901	23.28727	1.583143	2.253750	5.101262	14.31910
5	6.764676	7.375148	10.73846	19.42981	1.504367	2.141605	4.847426	12.84604
6	5.597198	6.131807	8.833594	16.92983	1.430769	2.036832	4.610276	11.73418
7	4.804307	5.282385	7.538720	15.12267	1.361970	1.938890	4.388589	10.88044
8	4.344387	4.758976	6.738530	13.98359	1.297620	1.847282	4.181240	10.21458
9	3.988250	4.356580	6.126034	13.02313	1.237400	1.761553	3.987195	9.687786
10	3.693795	4.030471	5.632646	12.17597	1.181012	1.681280	3.805502	9.265470
11	3.444292	3.760088	5.226303	11.42245	1.128187	1.606079	3.635287	8.922691
12	3.228504	3.531495	4.885323	10.74794	1.078673	1.535591	3.475741	8.641168
13	3.038614	3.334925	4.594522	10.14100	1.032241	1.469490	3.326125	8.407295
14	2.869015	3.163338	4.342980	9.592516	.9886768	1.407472	3.185750	8.210800
15	2.715589	3.011540	4.122648	9.095024	.9477846	1.349259	3.053987	8.043830
16	2.575237	2.875623	3.927470	8.642307	.9093839	1.294592	2.930250	7.900314
17	2.445597	2.752605	3.752822	8.229111	.8733072	1.243233	2.814003	7.775515
18	2.324830	2.640172	3.595109	7.850965	.8394000	1.194963	2.704746	7.665704
19	2.211490	2.536518	3.451514	7.504018	.8075197	1.149579	2.602020	7.567938
20	2.114207	2.450333	3.339562	7.196365	.7775340	1.106892	2.505399	7.479883
21	2.043470	2.372543	3.230371	6.930819	.7493209	1.066728	2.414490	7.399688
22	1.978360	2.300914	3.130476	6.687680	.7227674	1.028926	2.328928	7.325890
23	1.918134	2.234617	3.038611	6.464715	.6977684	.9933379	2.248375	7.257343
24	1.862178	2.172983	2.953742	6.259947	.6742272	.9598249	2.172520	7.193159
25	1.809983	2.115466	2.875020	6.071634	.6520540	.9282590	2.101072	7.132652
26	1.761125	2.061628	2.801744	5.898222	.6311650	.8985216	2.033763	7.075321
27	1.715247	2.011109	2.733332	5.738335	.6114832	.8705027	1.970343	7.020793
28	1.672047	1.963613	2.669295	5.590743	.5929366	.8440998	1.910582	6.968816
29	1.631267	1.918898	2.609220	5.454350	.5754586	.8192185	1.854264	6.919225
30	1.592689	1.876753	2.552764	5.328175	.5589876	.7957705	1.801190	6.871927
31	1.556118	1.837006	2.499627	5.211336	.5434661	.7736741	1.751176	6.826888
32	1.521391	1.799501	2.449555	5.103046	.5288408	.7528537	1.704050	6.784102
33	1.488359	1.764105	2.402323	5.002596	.5150620	.7332385	1.659652	6.743600
34	1.456894	1.730694	2.357734	4.909348	.5020839	.7147628	1.617833	6.705425
35	1.426879	1.699162	2.315613	4.822729	.4898638	.6973664	1.578457	6.669626
36	1.398210	1.669403	2.275802	4.742219	.4783618	.6809921	1.541395	6.636253
37	1.370795	1.641319	2.238157	4.667356	.4675412	.6655881	1.506528	6.605346
38	1.344544	1.614817	2.202542	4.597713	.4573675	.6511050	1.473747	6.576944
39	1.319379	1.589809	2.168834	4.532913	.4478092	.6374978	1.442948	6.551052
40	1.295224	1.566206	2.136914	4.472612	.4388368	.6247246	1.414036	6.527667
41	1.272015	1.543920	2.106670	4.416500	.4304225	.6127462	1.386923	6.506752
42	1.249682	1.522863	2.077993	4.364297	.4225414	.6015267	1.361528	6.488243
43	1.228166	1.502945	2.050774	4.315746	.4151697	.5910324	1.337775	6.472048
44	1.207405	1.484071	2.024906	4.270625	.4082858	.5812325	1.315593	6.458024
45	1.187340	1.466144	2.000282	4.228724	.4018695	.5720983	1.294919	6.445994
46	1.167913	1.449055	1.976792	4.189859	.3959023	.5636034	1.275691	6.435725
47	1.149065	1.432690	1.954317	4.153863	.3903670	.5557234	1.257855	6.426924
48	1.131192	1.417013	1.932674	4.120327	.3852480	.5484362	1.241360	6.419245
49	1.127073	1.412735	1.925799	4.087343	.3805309	.5417209	1.226161	6.419245
50	1.123192	1.408703	1.919329	4.057369	.3762023	.5355589	1.212213	6.419245
51	1.119530	1.404900	1.913228	4.030257	.3722506	.5299332	1.199480	6.419245
52	1.116072	1.401309	1.907471	4.005870	.3686647	.5248282	1.187925	6.419245
53	1.112801	1.397912	1.902030	3.984092	.3654346	.5202299	1.177517	6.419245
54	1.109706	1.394698	1.896886	3.964822	.3625518	.5161260	1.168228	6.419245
55	1.106772	1.391652	1.892012	3.947970	.3600084	.5125052	1.160033	6.419245
56	1.136040	1.436912	1.964659	3.933462	.3577976	.5093579	1.152909	6.517264
57	1.165448	1.482317	2.037542	3.921233	.3559134	.5066756	1.146837	6.615286
58	1.194989	1.527859	2.110645	3.911240	.3543507	.5044510	1.141802	6.713305
59	1.224651	1.573527	2.183952	3.903437	.3531057	.5026786	1.137790	6.811327
60	1.254427	1.619316	2.257454	3.897803	.3521747	.5013531	1.134790	6.909347
61	1.284311	1.665215	2.331136	3.894317	.3515554	.5004717	1.132795	7.007368
62	1.314296	1.711219	2.404986	3.892981	.3512462	.5000314	1.131799	7.105388
63	1.344373	1.757321	2.478994	3.893792	.3512462	.5000314	1.131799	7.203408
64	1.374540	1.803514	2.553152	3.896775	.3515554	.5004717	1.132795	7.301429
65	1.404791	1.849795	2.627447	3.901955	.3521747	.5013531	1.134790	7.399449

El Paso 1996 CO 24 Hour Motorist Choice Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
3	77.57043	99.05020	148.6742	273.0614	5.421545	6.250803	38.41466	178.5660
4	59.59108	76.33119	113.3544	249.4844	4.996567	5.760820	35.40344	142.4101
5	48.63763	62.25664	91.51244	228.4452	4.613288	5.318918	32.68771	116.3144
6	41.27639	52.72250	76.70061	209.6410	4.267170	4.919859	30.23527	97.05781
7	36.00209	45.87577	66.03589	192.8083	3.954210	4.559030	28.01778	82.55811
8	32.04692	40.74813	58.02162	177.7177	3.670878	4.232361	26.01021	71.43619
9	28.97731	36.78243	51.80003	164.1690	3.414055	3.936256	24.19048	62.75835
10	26.52974	33.63516	46.84365	151.9871	3.180985	3.667536	22.53905	55.87917
11	24.53486	31.08325	42.81053	141.0193	2.969225	3.423386	21.03860	50.34388
12	22.87892	28.97568	39.46961	131.1310	2.776610	3.201310	19.67382	45.82638
13	21.48277	27.20674	36.65935	122.2046	2.601221	2.999093	18.43109	42.08892
14	20.28963	25.70028	34.26374	114.1367	2.441350	2.814768	17.29832	38.95562
15	19.25779	24.40022	32.19734	106.8362	2.295478	2.646585	16.26473	36.29460
16	18.35595	23.26441	30.39614	100.2229	2.162253	2.492983	15.32076	34.00583
17	17.56019	22.26069	28.81114	94.22603	2.040471	2.352573	14.45787	32.01269
18	16.85195	21.36425	27.40445	88.78312	1.929056	2.224117	13.66844	30.25597
19	16.21671	20.55577	26.14631	83.83884	1.827047	2.106504	12.94564	28.68973
20	15.56187	19.85551	25.25100	79.34428	1.733584	1.998746	12.28340	27.27812
21	14.89074	19.06541	24.31981	75.25608	1.647899	1.899954	11.67628	25.99315
22	14.27799	18.33758	23.47073	71.53569	1.569302	1.809336	11.11938	24.81305
23	13.71586	17.66340	22.69253	68.14899	1.497176	1.726178	10.60833	23.72084
24	13.19796	17.03611	21.97605	65.06563	1.430968	1.649843	10.13920	22.70344
25	12.71905	16.45038	21.31376	62.25860	1.370178	1.579755	9.708473	21.75085
26	12.27479	15.90204	20.69946	59.70386	1.314361	1.515401	9.312979	20.85545
27	11.86157	15.38782	20.12804	57.38005	1.263115	1.456316	8.949872	20.01157
28	11.47637	14.90509	19.59519	55.26813	1.216078	1.402084	8.616587	19.21502
29	11.11658	14.45173	19.09735	53.35120	1.172925	1.352331	8.310827	18.46273
30	10.78003	14.02607	18.63146	51.61418	1.133365	1.306720	8.030518	17.75251
31	10.46482	13.62662	18.19495	50.04369	1.097134	1.264946	7.773800	17.08277
32	10.16928	13.25215	17.78556	48.62786	1.063995	1.226740	7.538997	16.45237
33	9.891982	12.90151	17.40137	47.35614	1.033738	1.191854	7.324604	15.86040
34	9.631604	12.57368	17.04064	46.21926	1.006170	1.160070	7.129272	15.30618
35	9.386994	12.26767	16.70183	45.20901	.9811214	1.131190	6.951790	14.78898
36	9.157096	11.98255	16.38359	44.31825	.9584392	1.105038	6.791075	14.30812
37	8.940948	11.71737	16.08462	43.54072	.9379871	1.081458	6.646159	13.86285
38	8.737656	11.47123	15.80376	42.87104	.9196436	1.060308	6.516185	13.45221
39	8.546398	11.24318	15.53992	42.30464	.9033014	1.041467	6.400392	13.07519
40	8.366398	11.03232	15.29207	41.83764	.8888657	1.024823	6.298107	12.73050
41	8.196925	10.83764	15.05919	41.46694	.8762541	1.010282	6.208747	12.41665
42	8.037263	10.65816	14.84030	41.19005	.8653951	.9977623	6.131804	12.13198
43	7.886732	10.49277	14.63448	41.00509	.8562276	.9871925	6.066847	11.87444
44	7.744642	10.34027	14.44074	40.91089	.8487004	.9785141	6.013514	11.64174
45	7.610295	10.19930	14.25810	40.90682	.8427718	.9716787	5.971505	11.43121
46	7.482958	10.06832	14.08554	40.99280	.8384091	.9666488	5.940594	11.23979
47	7.361866	9.945550	13.92201	41.16944	.8355883	.9633965	5.920608	11.06396
48	7.246189	9.828920	13.76635	41.43792	.8342942	.9619045	5.911438	10.89974
49	7.246189	9.828920	13.76635	41.80001	.8345196	.9621643	5.913034	10.89974
50	7.246189	9.828920	13.76635	42.25810	.8362654	.9641774	5.925406	10.89974
51	7.246189	9.828920	13.76635	42.81535	.8395418	.9679546	5.948619	10.89974
52	7.246189	9.828920	13.76635	43.47546	.8443661	.9735169	5.982803	10.89974
53	7.246189	9.828920	13.76635	44.24297	.8507650	.9808947	6.028144	10.89974
54	7.246189	9.828920	13.76635	45.12319	.8587744	.9901290	6.084893	10.89974
55	7.246189	9.828920	13.76635	46.12230	.8684379	1.001271	6.153365	10.89974
56	8.327906	11.56995	16.42534	47.24735	.8798102	1.014382	6.233944	13.52472
57	9.409623	13.31098	19.08433	48.50645	.8929551	1.029538	6.327082	16.14969
58	10.49134	15.05200	21.74332	49.90876	.9079472	1.046823	6.433310	18.77467
59	11.57305	16.79303	24.40231	51.46472	.9248726	1.066338	6.553236	21.39964
60	12.65477	18.53406	27.06129	53.18607	.9438301	1.088194	6.687561	24.02462
61	13.73649	20.27508	29.72027	55.08605	.9649307	1.112522	6.837069	26.64959
62	14.81820	22.01612	32.37927	57.17956	.9883000	1.139466	7.002654	29.27457
63	15.89992	23.75715	35.03825	59.48336	1.014079	1.169188	7.185314	31.89955
64	16.98165	25.49816	37.69726	62.01626	1.042426	1.201872	7.386168	34.52452
65	18.06336	27.23920	40.35624	64.79941	1.073518	1.237719	7.606469	37.14949

El Paso 1996 NOx 24 Hour Motorist Choice Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV	MC
3	2.125516	2.333177	2.909014	4.468934	2.790057	3.209465	24.81077	.8271292
4	1.953295	2.145667	2.682679	4.515180	2.672546	3.074290	23.76581	.7911366
5	1.849129	2.032600	2.546993	4.561425	2.563623	2.948994	22.79720	.7612685
6	1.779175	1.957140	2.456815	4.607669	2.462635	2.832824	21.89915	.7370552
7	1.728911	1.903457	2.392780	4.653914	2.368985	2.725097	21.06637	.7180441
8	1.691062	1.863605	2.345181	4.700159	2.282135	2.625192	20.29405	.7037983
9	1.661575	1.833135	2.308617	4.746404	2.201594	2.532543	19.57783	.6938978
10	1.638007	1.809359	2.279828	4.792648	2.126913	2.446636	18.91372	.6879393
11	1.618797	1.790542	2.256734	4.838894	2.057685	2.367002	18.29811	.6855354
12	1.602894	1.775507	2.237938	4.885139	1.993540	2.293213	17.72769	.6863158
13	1.589567	1.763433	2.222463	4.931383	1.934138	2.224882	17.19946	.6899261
14	1.578287	1.753710	2.209606	4.977628	1.879173	2.161655	16.71068	.6960288
15	1.568662	1.745884	2.198847	5.023872	1.828364	2.103209	16.25886	.7043028
16	1.560394	1.739605	2.189791	5.070117	1.781457	2.049250	15.84173	.7144433
17	1.553253	1.734597	2.182130	5.116363	1.738220	1.999514	15.45724	.7261623
18	1.547056	1.730635	2.175625	5.162608	1.698443	1.953757	15.10352	.7391878
19	1.541655	1.727539	2.170082	5.208852	1.661934	1.911759	14.77886	.7532647
20	1.543610	1.727359	2.171651	5.255097	1.628520	1.873323	14.48173	.7681543
21	1.553171	1.740068	2.190671	5.301342	1.598046	1.838268	14.21074	.7836343
22	1.561986	1.751945	2.208164	5.347587	1.570371	1.806433	13.96463	.7994989
23	1.570150	1.763070	2.224320	5.393831	1.545367	1.777671	13.74229	.8155587
24	1.577739	1.773511	2.239292	5.440076	1.522923	1.751853	13.54270	.8316411
25	1.584820	1.783322	2.253210	5.486321	1.502938	1.728863	13.36498	.8475897
26	1.591446	1.792551	2.266186	5.532566	1.485322	1.708600	13.20833	.8632642
27	1.597667	1.801235	2.278316	5.578811	1.469999	1.690973	13.07207	.8785417
28	1.603523	1.809410	2.289680	5.625056	1.456901	1.675906	12.95560	.8933153
29	1.609046	1.817106	2.300352	5.671301	1.445972	1.663334	12.85841	.9074944
30	1.614273	1.824354	2.310397	5.717546	1.437164	1.653202	12.78008	.9210051
31	1.619227	1.831176	2.319875	5.763790	1.430439	1.645467	12.72028	.9378977
32	1.623936	1.837602	2.328834	5.810036	1.425770	1.640095	12.67876	.9458077
33	1.628425	1.843654	2.337326	5.856280	1.423134	1.637063	12.65532	.9570343
34	1.632713	1.849359	2.345397	5.902524	1.422522	1.636360	12.64988	.9674616
35	1.636823	1.854743	2.353089	5.948770	1.423931	1.637980	12.66241	.9790981
36	1.640774	1.859833	2.360443	5.995015	1.427367	1.641933	12.69296	.9859685
37	1.644587	1.864655	2.367497	6.041259	1.432845	1.648233	12.74167	.9941142
38	1.648280	1.869242	2.374292	6.087504	1.440387	1.656909	12.80874	1.001593
39	1.651873	1.873620	2.380863	6.133749	1.450027	1.667998	12.89446	1.008481
40	1.655385	1.877825	2.387249	6.179994	1.461805	1.681547	12.99920	1.014867
41	1.658835	1.881889	2.393486	6.226240	1.475773	1.697614	13.12341	1.020858
42	1.662242	1.885851	2.399615	6.272483	1.491991	1.716271	13.26764	1.026579
43	1.665628	1.889747	2.405668	6.318729	1.510532	1.737599	13.43251	1.032171
44	1.669013	1.893620	2.411686	6.364973	1.531476	1.761691	13.61875	1.037790
45	1.672416	1.897510	2.417707	6.411219	1.554916	1.788655	13.82720	1.043609
46	1.675862	1.901465	2.423770	6.457463	1.580959	1.818613	14.05879	1.049818
47	1.679371	1.905532	2.429916	6.503708	1.609722	1.851700	14.31457	1.056623
48	1.682968	1.909761	2.436187	6.549953	1.641338	1.888068	14.59571	1.064247
49	1.745999	1.985724	2.538602	6.596198	1.675953	1.927886	14.90353	1.098901
50	1.809028	2.061686	2.641016	6.642443	1.713729	1.971341	15.23946	1.133556
51	1.872059	2.137648	2.743430	6.688687	1.754847	2.018640	15.60510	1.168210
52	1.935089	2.213610	2.845843	6.734933	1.799505	2.070011	16.00222	1.202865
53	1.998118	2.289572	2.948259	6.781178	1.847922	2.125706	16.43278	1.237519
54	2.061149	2.365534	3.050672	6.827423	1.900338	2.186001	16.89889	1.272174
55	2.124179	2.441496	3.153087	6.873667	1.957018	2.251201	17.40292	1.306828
56	2.187209	2.517458	3.255500	6.919911	2.018252	2.321640	17.94745	1.341483
57	2.250238	2.593421	3.357914	6.966157	2.084360	2.397686	18.53532	1.376138
58	2.313269	2.669383	3.460329	7.012401	2.155692	2.479741	19.16964	1.410792
59	2.376298	2.745344	3.562743	7.058646	2.232633	2.568248	19.85385	1.445447
60	2.439330	2.821307	3.665157	7.104892	2.315607	2.663694	20.59169	1.480101
61	2.502359	2.897268	3.767571	7.151136	2.405077	2.766613	21.38731	1.514756
62	2.565388	2.973232	3.869986	7.197381	2.501553	2.877593	22.24524	1.549410
63	2.628419	3.049193	3.972400	7.243626	2.605597	2.997277	23.17045	1.584065
64	2.691449	3.125156	4.074815	7.289871	2.717825	3.126374	24.16844	1.618719
65	2.754480	3.201118	4.177229	7.336116	2.838915	3.265667	25.24525	1.653374

El Paso 1996 VOC MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
3	31.59581	37.09775	56.11436	73.28284	1.197549	1.628617	5.975986	18.21062
4	21.71505	23.53563	37.14888	55.94429	1.137270	1.546639	5.675181	15.93538
5	17.00362	18.50614	28.95449	46.90622	1.080965	1.470067	5.394209	14.24814
6	13.89486	15.16536	23.51600	40.72303	1.025169	1.394186	5.115777	12.90434
7	11.91427	13.02959	20.04715	36.52621	.9761643	1.327542	4.871236	11.93997
8	10.67944	11.66959	17.88174	33.81511	.9303115	1.265184	4.642421	11.18653
9	9.720713	10.61964	16.21695	31.50756	.8873841	1.206805	4.428206	10.58952
10	8.941303	9.775450	14.88518	29.47593	.8471745	1.152121	4.227552	10.11024
11	8.293070	9.082367	13.79961	27.67330	.8094910	1.100873	4.039505	9.720744
12	7.743505	8.503040	12.90004	26.06441	.7741570	1.052821	3.863183	9.400498
13	7.269888	8.011110	12.14355	24.62169	.7410100	1.007742	3.697773	9.134193
14	6.855866	7.587469	11.49880	23.32303	.7098997	.9654335	3.542527	8.910258
15	6.489376	7.217958	10.94247	22.15024	.6806874	.9257061	3.396753	8.719833
16	6.161339	6.891887	10.45689	21.08815	.6532456	.8883863	3.259813	8.556058
17	5.847178	6.583908	10.00335	20.06664	.6258963	.8511924	3.123334	8.405276
18	5.578198	6.323607	9.624201	19.19439	.6017423	.8183440	3.002802	8.280813
19	5.330805	6.086942	9.282942	18.39901	.5790241	.7874482	2.889434	8.169900
20	5.111256	5.908644	9.007443	17.67828	.5576487	.7583785	2.782767	8.069924
21	4.936217	5.726700	8.736376	17.02754	.5375298	.7310178	2.682370	7.978812
22	4.775779	5.559282	8.487772	16.43220	.5185879	.7052576	2.587847	7.894923
23	4.628000	5.404392	8.258335	15.88676	.5007491	.6809975	2.498827	7.816973
24	4.491284	5.260427	8.045422	15.38638	.4839448	.6581444	2.414971	7.743953
25	4.364311	5.126101	7.846919	14.92676	.4681115	.6366119	2.335961	7.675104
26	4.245981	5.000387	7.661144	14.50410	.4531906	.6163200	2.261502	7.609850
27	4.135376	4.882451	7.486753	14.11500	.4391271	.5971943	2.191323	7.547773
28	4.025457	4.764918	7.312747	13.73496	.4250678	.5780741	2.121164	7.484980
29	3.928471	4.661042	7.158703	13.40586	.4126169	.5611415	2.059032	7.428662
30	3.837187	4.563249	7.013410	13.10202	.4008794	.5451791	2.000460	7.374935
31	3.751129	4.471161	6.876326	12.82126	.3898149	.5301318	1.945246	7.323762
32	3.669881	4.384461	6.747010	12.56167	.3793859	.5159487	1.893203	7.275136
33	3.593081	4.302870	6.625101	12.32148	.3695572	.5025821	1.844157	7.229094
34	3.520409	4.226137	6.510286	12.09914	.3602965	.4899880	1.797944	7.185679
35	3.451577	4.154034	6.402295	11.89323	.3515738	.4781254	1.754416	7.144956
36	3.386329	4.086347	6.300876	11.70247	.3433608	.4669562	1.713432	7.106973
37	3.324429	4.022872	6.205796	11.52571	.3356316	.4564448	1.674862	7.071781
38	3.265663	3.963408	6.116822	11.36192	.3283622	.4465586	1.638586	7.039417
39	3.206435	3.904404	6.028718	11.20104	.3211167	.4367051	1.602430	7.008145
40	3.153517	3.852591	5.951594	11.06111	.3147258	.4280138	1.570538	6.981627
41	3.103159	3.804178	5.879831	10.93155	.3087307	.4198607	1.540622	6.957906
42	3.055192	3.758953	5.813150	10.81166	.3031135	.4122215	1.512591	6.936906
43	3.009451	3.716694	5.751251	10.70083	.2978575	.4050736	1.486362	6.918519
44	2.965775	3.677160	5.693799	10.59848	.2929475	.3983962	1.461861	6.902585
45	2.924000	3.640088	5.640418	10.50412	.2883692	.3921699	1.439014	6.888906
46	2.883961	3.605194	5.590701	10.41728	.2841097	.3863771	1.417758	6.877215
47	2.845486	3.572156	5.544164	10.33756	.2801567	.3810012	1.398032	6.867192
48	2.808612	3.540397	5.499614	10.26340	.2764992	.3760272	1.379781	6.858439
49	2.799153	3.529672	5.479407	10.18283	.2731270	.3714412	1.362953	6.858276
50	2.790708	3.520008	5.460974	10.10965	.2700308	.3672305	1.347502	6.858276
51	2.782263	3.510348	5.442554	10.03959	.2670341	.3631550	1.332548	6.858276
52	2.774776	3.501781	5.426228	9.980555	.2644812	.3596833	1.319809	6.858276
53	2.767700	3.493688	5.410809	9.927916	.2621808	.3565548	1.308329	6.858276
54	2.761007	3.486034	5.396231	9.881432	.2601267	.3537613	1.298079	6.858276
55	2.755033	3.479262	5.383099	9.840889	.2583133	.3512952	1.289030	6.858625
56	2.865695	3.624901	5.583129	9.806108	.2567359	.3491500	1.281158	6.970085
57	2.976665	3.770893	5.783837	9.776947	.2553903	.3473200	1.274444	7.081543
58	3.087923	3.917212	5.985172	9.753279	.2542729	.3458004	1.268867	7.193004
59	3.199447	4.063840	6.187098	9.735015	.2533808	.3445871	1.264415	7.304463
60	3.311222	4.210753	6.389569	9.722095	.2527116	.3436770	1.261076	7.415921
61	3.423230	4.357935	6.592556	9.714482	.2522636	.3430678	1.258881	7.527381
62	3.556525	4.533038	6.834225	9.712321	.2520173	.3427328	1.257612	7.659740
63	3.626796	4.625331	6.961674	9.714195	.2520120	.3427256	1.257585	7.729401
64	3.767565	4.810177	7.217069	9.724224	.2522583	.3430607	1.258814	7.868725
65	3.908617	4.995345	7.473083	9.742746	.2528485	.3438633	1.261760	8.008050

El Paso 1996 CO MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV	MC
3	272.2861	319.3721	449.6784	679.4927	4.542291	5.173406	40.58160	174.9650
4	204.0020	220.2492	324.2112	616.9802	4.187997	4.769885	37.41628	139.6468
5	164.8121	177.6271	261.8060	565.1974	3.868293	4.405762	34.56000	114.1221
6	137.0123	146.9763	215.6027	516.1603	3.562324	4.057281	31.82641	94.25822
7	118.3872	126.3294	183.9684	474.9654	3.302619	3.761491	29.50617	80.28667
8	104.3665	110.7854	159.9701	438.0102	3.067363	3.493549	27.40435	69.54956
9	93.45627	98.72672	141.3071	404.8099	2.853997	3.250537	25.49810	61.15789
10	84.74129	89.14154	126.4882	374.9409	2.660256	3.029877	23.76718	54.49570
11	77.62962	81.36523	114.5073	348.0321	2.484133	2.829283	22.19367	49.12799
12	71.72173	74.94395	104.6648	323.7582	2.323849	2.646729	20.76167	44.74221
13	66.73834	69.55771	96.46126	301.8331	2.177824	2.480415	19.45705	41.11011
14	62.47857	64.97501	89.53229	282.0056	2.044650	2.328737	18.26725	38.06255
15	58.79442	61.02454	83.60724	264.0544	1.923078	2.190274	17.18111	35.47251
16	55.57455	57.57730	78.48178	247.7844	1.811992	2.063754	16.18865	33.24352
17	52.56726	54.35609	73.73782	232.1472	1.704344	1.941148	15.22690	31.18835
18	50.05721	51.66017	69.80704	218.8228	1.611865	1.835821	14.40068	29.48898
19	47.80528	49.22993	66.29875	206.7124	1.527150	1.739336	13.64382	27.97247
20	45.89025	47.62836	63.69615	195.6974	1.449494	1.650890	12.95003	26.60464
21	44.21519	46.02048	61.19603	185.6730	1.378265	1.569764	12.31366	25.35874
22	42.68297	44.53046	58.90797	176.5456	1.312897	1.495314	11.72965	24.21388
23	41.27438	43.14124	56.79972	168.2325	1.252882	1.426960	11.19347	23.15384
24	39.97376	41.83968	54.84582	160.6600	1.197764	1.364184	10.70103	22.16603
25	38.76833	40.61600	53.02614	153.7625	1.147134	1.306519	10.24869	21.24085
26	37.64762	39.46282	51.32495	147.4816	1.100623	1.253545	9.833153	20.37094
27	36.60299	38.37474	49.72982	141.7653	1.057899	1.204886	9.451456	19.55086
28	35.56839	37.28552	48.14047	136.2588	1.016324	1.157534	9.080012	18.72958
29	34.65922	36.32026	46.73594	131.5665	.9805055	1.116739	8.760004	18.00065
30	33.80751	35.41084	45.41402	127.3125	.9476534	1.079322	8.466500	17.31227
31	33.00893	34.55554	44.17008	123.4643	.9175519	1.045038	8.197569	16.66295
32	32.25973	33.75296	43.00041	119.9932	.8900071	1.013666	7.951478	16.05156
33	31.55657	33.00181	41.90196	116.8737	.8648440	.9850073	7.726666	15.47726
34	30.89653	32.30082	40.87213	114.0831	.8419062	.9588825	7.521736	14.93937
35	30.27695	31.64875	39.90861	111.6018	.8210533	.9351320	7.335433	14.43724
36	29.69538	31.04425	39.00926	109.4121	.8021591	.9136126	7.166628	13.97017
37	29.14958	30.48590	38.17200	107.4990	.7851112	.8941962	7.014319	13.53743
38	28.63746	29.97214	37.39476	105.8494	.7698100	.8767690	6.877614	13.13817
39	28.12801	29.47325	36.63225	104.3729	.7553672	.8603194	6.748580	12.74948
40	27.67916	29.04593	35.97179	103.2335	.7433998	.8466892	6.641662	12.41582
41	27.25815	28.65748	35.36423	102.3288	.7329401	.8347762	6.548213	12.11192
42	26.86315	28.30558	34.80686	101.6530	.7239292	.8245132	6.467708	11.83609
43	26.49233	27.98758	34.29657	101.2015	.7163169	.8158434	6.399699	11.58643
44	26.14385	27.70046	33.83003	100.9715	.7100616	.8087189	6.343812	11.36074
45	25.81573	27.44073	33.40334	100.9613	.7051287	.8031006	6.299741	11.15642
46	25.50587	27.20418	33.01210	101.1711	.7014914	.7989580	6.267245	10.97058
47	25.21199	26.98591	32.65129	101.6021	.6991300	.7962685	6.246148	10.79977
48	24.93158	26.78007	32.31517	102.2571	.6980316	.7950176	6.236335	10.64025
49	24.92609	26.77604	32.30862	103.1405	.6981905	.7951984	6.237754	10.63715
50	24.92609	26.77604	32.30862	104.2581	.6996071	.7968119	6.250411	10.63715
51	24.92609	26.77604	32.30862	105.7104	.7024995	.8001062	6.276253	10.63715
52	24.92609	26.77604	32.30862	107.3364	.7065428	.8047113	6.312375	10.63715
53	24.92609	26.77604	32.30862	109.2247	.7118894	.8108008	6.360143	10.63715
54	24.92609	26.77604	32.30862	111.3883	.7185683	.8184077	6.419813	10.63715
55	24.94088	26.79395	32.33139	113.8421	.7266166	.8275742	6.491719	10.64511
56	29.66978	32.51979	39.61480	116.6034	.7360785	.8383507	6.576252	13.19251
57	34.39869	38.24567	46.89822	119.6917	.7470068	.8507974	6.673888	15.73992
58	39.12761	43.97154	54.18164	123.1295	.7594628	.8649840	6.785173	18.28733
59	43.85653	49.69741	61.46507	126.9418	.7735175	.8809916	6.910739	20.83474
60	48.58543	55.42326	68.74845	131.1572	.7892514	.8989115	7.051308	23.38214
61	53.31435	61.14913	76.03188	135.8076	.8067560	.9188482	7.207697	25.92955
62	58.92993	67.94861	84.68094	141.9453	.8299853	.9453051	7.415232	28.95459
63	61.88550	71.52725	89.23306	145.4653	.8433379	.9605129	7.534526	30.54672
64	67.79663	78.68459	98.33732	153.1595	.8725293	.9937603	7.795329	33.73098
65	73.70778	85.84193	107.4416	161.8097	.9052735	1.031054	8.087870	36.91524

El Paso 1996 NOx MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HOGV	LDDV	LDDT	HDDV	MC
3	3.242930	3.671082	3.885342	5.191803	1.981092	2.361214	29.67008	.8277882
4	2.857865	3.207689	3.545480	5.238405	1.898058	2.262248	28.42651	.7918732
5	2.715928	3.051108	3.416008	5.291770	1.821059	2.170475	27.27333	.7620248
6	2.614157	2.940123	3.324046	5.348469	1.745351	2.080241	26.13948	.7364417
7	2.544976	2.866032	3.262995	5.401833	1.679404	2.001640	25.15181	.7176646
8	2.492145	2.810824	3.218159	5.455197	1.618220	1.928715	24.23548	.7035900
9	2.450522	2.768716	3.184827	5.508562	1.561455	1.861059	23.38533	.6938053
10	2.416979	2.736156	3.160065	5.561927	1.508799	1.798300	22.59672	.6879138
11	2.389495	2.710822	3.141923	5.615291	1.459967	1.740098	21.86538	.6855351
12	2.366697	2.691117	3.129029	5.668655	1.414701	1.686146	21.18745	.6863047
13	2.347615	2.675889	3.120373	5.722020	1.372764	1.636163	20.55938	.6898744
14	2.331539	2.664280	3.115181	5.775383	1.333942	1.589892	19.97796	.6959122
15	2.317933	2.655630	3.112844	5.828748	1.298039	1.547101	19.44026	.7041019
16	2.306385	2.649418	3.112867	5.882113	1.264878	1.507577	18.94361	.7141438
17	2.296005	2.645016	3.115018	5.938811	1.232467	1.468946	18.45819	.7265255
18	2.287740	2.642579	3.118684	5.992176	1.204464	1.435570	18.03881	.7395090
19	2.280719	2.641504	3.123642	6.045540	1.178751	1.404924	17.65371	.7535266
20	2.279428	2.653064	3.138934	6.098905	1.155208	1.376863	17.30112	.7683436
21	2.291978	2.683975	3.169069	6.152269	1.133726	1.351260	16.97939	.7837417
22	2.303736	2.712909	3.197727	6.205634	1.114207	1.327996	16.68707	.7995187
23	2.314802	2.740063	3.225019	6.258997	1.096563	1.306966	16.42282	.8154886
24	2.325261	2.765597	3.251027	6.312363	1.080714	1.288077	16.18546	.8314815
25	2.335179	2.789643	3.275821	6.365727	1.066592	1.271244	15.97395	.8473433
26	2.344614	2.812311	3.299459	6.419091	1.054133	1.256394	15.78735	.8629367
27	2.353614	2.833694	3.321989	6.472456	1.043283	1.243463	15.62486	.8781396
28	2.362749	2.855096	3.344766	6.529155	1.033467	1.231763	15.47784	.8937473
29	2.370983	2.874079	3.365160	6.582520	1.025796	1.222621	15.36297	.9078299
30	2.378901	2.892003	3.384587	6.635883	1.019613	1.215252	15.27037	.9212501
31	2.386534	2.908932	3.403097	6.689248	1.014892	1.209624	15.19966	.9339518
32	2.393913	2.924928	3.420743	6.742612	1.011612	1.205715	15.15053	.9458945
33	2.401070	2.940053	3.437583	6.795976	1.009759	1.203507	15.12279	.9570547
34	2.408033	2.954367	3.453680	6.849340	1.009326	1.202991	15.11630	.9674243
35	2.414835	2.967934	3.469106	6.902704	1.010311	1.204164	15.13105	.9770116
36	2.421506	2.980821	3.483939	6.956068	1.012718	1.207033	15.16710	.9858418
37	2.428081	2.993096	3.498265	7.009434	1.016557	1.211608	15.22459	.9939542
38	2.434592	3.004832	3.512177	7.062798	1.021844	1.217910	15.30378	1.001406
39	2.441481	3.016798	3.526623	7.119498	1.029074	1.226527	15.41206	1.008682
40	2.447979	3.027671	3.540020	7.172861	1.037426	1.236483	15.53715	1.015020
41	2.454531	3.038258	3.553349	7.226225	1.047316	1.248270	15.68527	1.020971
42	2.461179	3.048649	3.566744	7.279590	1.058786	1.261941	15.85705	1.026657
43	2.467969	3.058943	3.580343	7.332955	1.071886	1.277554	16.05324	1.032216
44	2.474950	3.069245	3.594301	7.386320	1.086672	1.295177	16.27468	1.037804
45	2.482170	3.079665	3.608778	7.439684	1.103210	1.314889	16.52237	1.043590
46	2.489685	3.090317	3.623947	7.493047	1.121574	1.336776	16.79740	1.049762
47	2.497550	3.101328	3.639991	7.546412	1.141846	1.360938	17.10100	1.056520
48	2.505825	3.112824	3.657104	7.599776	1.164117	1.387482	17.43456	1.064085
49	2.512096	3.239721	3.814223	7.653141	1.188491	1.416533	17.79959	1.098018
50	2.720362	3.368966	3.974186	7.706505	1.215080	1.448223	18.19780	1.132479
51	2.835394	3.506290	4.144147	7.763205	1.245898	1.484955	18.65935	1.169093
52	2.943660	3.635537	4.304110	7.816568	1.277465	1.522579	19.13213	1.203554
53	3.051927	3.764784	4.464073	7.869933	1.311673	1.563351	19.64445	1.238015
54	3.160192	3.894029	4.624037	7.923298	1.348690	1.607470	20.19882	1.272476
55	3.268458	4.023276	4.784000	7.976662	1.388699	1.655156	20.79803	1.306936
56	3.376724	4.152522	4.943964	8.030026	1.431905	1.706651	21.44511	1.341397
57	3.484991	4.281768	5.103928	8.083389	1.478529	1.762222	22.14338	1.375857
58	3.593257	4.411015	5.263890	8.136754	1.528817	1.822159	22.89652	1.410318
59	3.701523	4.540261	5.423854	8.190119	1.583037	1.886782	23.70855	1.444779
60	3.809788	4.669507	5.583817	8.243484	1.641482	1.956442	24.58387	1.479240
61	3.918055	4.798753	5.743781	8.296848	1.704477	2.031524	25.52732	1.513701
62	4.046620	4.952233	5.933738	8.360217	1.785685	2.128314	26.74354	1.554622
63	4.114287	5.033011	6.033714	8.393571	1.831424	2.182829	27.42857	1.576160
64	4.249619	5.194569	6.233669	8.460276	1.929621	2.299867	28.89922	1.619236
65	4.384952	5.356127	6.433623	8.526981	2.037549	2.428503	30.51561	1.662312

Hidalgo 1996 VOC MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
3	20.47841	21.84354	35.43047	67.51645	1.676516	2.416521	5.396361	17.66112
4	14.22932	15.34897	25.03226	52.26675	1.591693	2.294256	5.123332	15.60240
5	10.93208	11.88400	19.36435	43.96885	1.512491	2.180095	4.868398	14.07763
6	8.922379	9.754193	15.82189	38.55783	1.438496	2.073439	4.630222	12.92674
7	7.579675	8.323364	13.41514	34.61987	1.369325	1.973737	4.407576	12.04302
8	6.818653	7.468854	11.93945	32.06900	1.304628	1.880483	4.199329	11.35379
9	6.235059	6.817373	10.81407	29.91339	1.244082	1.793212	4.004444	10.80850
10	5.756212	6.291998	9.912605	28.01598	1.187390	1.711497	3.821966	10.37136
11	5.353623	5.858645	9.175838	26.33272	1.134280	1.634944	3.651014	10.01654
12	5.008238	5.494321	8.563130	24.83048	1.084499	1.563190	3.490779	9.725136
13	4.706833	5.182954	8.045718	23.48345	1.037815	1.495901	3.340515	9.483052
14	4.439940	4.912988	7.602725	22.27089	.9940159	1.432769	3.199533	9.279659
15	4.200613	4.675908	7.218673	21.17577	.9529031	1.373509	3.067199	9.106826
16	3.983633	4.465316	6.881878	20.18389	.9142950	1.317859	2.942928	8.958271
17	3.785012	4.276320	6.583380	19.28322	.8780235	1.265578	2.826177	8.829092
18	3.601652	4.105125	6.316220	18.46351	.8439332	1.216440	2.716447	8.715425
19	3.431108	3.948757	6.074941	17.71590	.8118806	1.170240	2.613277	8.614227
20	3.283055	3.820133	5.876674	17.04018	.7817330	1.126785	2.516238	8.523081
21	3.170253	3.696715	5.685131	16.43339	.7533677	1.085900	2.424935	8.440070
22	3.066885	3.583546	5.509756	15.87846	.7266706	1.047419	2.339003	8.363682
23	2.971713	3.479252	5.348226	15.37024	.7015368	1.011191	2.258103	8.292728
24	2.883706	3.382717	5.198668	14.90415	.6778685	.9770754	2.181920	8.226292
25	2.802008	3.293029	5.059569	14.47619	.6555754	.9449424	2.110162	8.163661
26	2.725895	3.209437	4.929709	14.08274	.6345736	.9146706	2.042562	8.104315
27	2.654757	3.131321	4.808094	13.72064	.6147854	.8861479	1.978868	8.047874
28	2.588072	3.058163	4.693923	13.38703	.5961386	.8592706	1.918848	7.994072
29	2.525394	2.989530	4.586543	13.07939	.5785664	.8339419	1.862286	7.942740
30	2.466339	2.925054	4.485417	12.79543	.5620065	.8100726	1.808983	7.893781
31	2.410570	2.864418	4.390109	12.53311	.5464010	.7875793	1.758753	7.847161
32	2.357796	2.807348	4.300250	12.29062	.5316967	.7663845	1.711423	7.802874
33	2.307761	2.753602	4.215530	12.06631	.5178436	.7464166	1.666832	7.760950
34	2.260239	2.702965	4.135681	11.85870	.5047955	.7276091	1.624833	7.721435
35	2.215028	2.655241	4.060467	11.66646	.4925092	.7098999	1.585286	7.684378
36	2.171949	2.610251	3.989676	11.48839	.4809451	.6932315	1.548064	7.649834
37	2.130839	2.567831	3.923111	11.32342	.4700660	.6775503	1.513046	7.617842
38	2.091554	2.527825	3.860581	11.17055	.4598375	.6628070	1.480123	7.588441
39	2.053962	2.490088	3.801907	11.02892	.4502276	.6489555	1.449190	7.561642
40	2.017941	2.454478	3.746903	10.89772	.4412066	.6359526	1.420153	7.537435
41	1.983382	2.420859	3.695383	10.77624	.4327471	.6237590	1.392924	7.515786
42	1.950182	2.389097	3.647156	10.66383	.4248233	.6123377	1.367419	7.496627
43	1.918247	2.359059	3.602015	10.55989	.4174118	.6016548	1.343563	7.479864
44	1.887486	2.330607	3.559749	10.46390	.4104907	.5916789	1.321285	7.465347
45	1.857817	2.303603	3.520117	10.37539	.4040397	.5823804	1.300521	7.452896
46	1.829158	2.277900	3.482866	10.29392	.3980403	.5737329	1.281210	7.442266
47	1.801431	2.253340	3.447706	10.21911	.3924751	.5657113	1.263297	7.433156
48	1.774866	2.229564	3.413811	10.14932	.3873286	.5582930	1.246731	7.425206
49	1.766306	2.220681	3.399562	10.07466	.3825859	.5514570	1.231465	7.425206
50	1.758248	2.212320	3.386155	10.00690	.3782341	.5451843	1.217458	7.425206
51	1.750654	2.204439	3.373523	9.945709	.3742610	.5394574	1.204669	7.425206
52	1.743488	2.197004	3.361609	9.890768	.3706555	.5342607	1.193064	7.425206
53	1.736718	2.189980	3.350358	9.841816	.3674082	.5295798	1.182611	7.425206
54	1.730316	2.183337	3.339722	9.798622	.3645097	.5254021	1.173282	7.425206
55	1.724255	2.177049	3.329657	9.760988	.3619526	.5217163	1.165051	7.425206
56	1.769271	2.248719	3.457802	9.728746	.3597298	.5185124	1.157896	7.526668
57	1.814581	2.320697	3.586442	9.701754	.3578355	.5157819	1.151799	7.628130
58	1.860167	2.392960	3.715541	9.679900	.3562644	.5135174	1.146742	7.729592
59	1.906010	2.465489	3.845069	9.663107	.3550126	.5117130	1.142713	7.831053
60	1.952093	2.538269	3.974999	9.651308	.3540766	.5103638	1.139700	7.932515
61	1.998400	2.611281	4.105304	9.644474	.3534540	.5094664	1.137696	8.039378
62	2.044918	2.684511	4.235960	9.642599	.3531430	.5090182	1.136695	8.135439
63	2.091633	2.757946	4.366945	9.645699	.3531430	.5090182	1.136695	8.236901
64	2.138534	2.831574	4.498240	9.653816	.3534540	.5094664	1.137696	8.338363
65	2.185608	2.905382	4.629824	9.667018	.3540766	.5103638	1.139700	8.439823

Hidalgo 1996 CO MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
3	134.8133	168.5446	292.9665	710.9752	5.442568	6.287488	38.84643	179.3908
4	103.2625	129.3113	226.2601	649.5874	5.015941	5.794631	35.80137	143.0679
5	84.15036	105.1156	182.9262	594.8073	4.631176	5.350133	33.05511	116.8516
6	71.34168	88.75562	152.6973	545.8463	4.283716	4.948733	30.57510	97.50615
7	62.17197	77.00941	130.6080	502.0187	3.969543	4.585786	28.33269	82.93946
8	55.29294	68.20541	113.9087	462.7271	3.685112	4.257200	26.30256	71.76617
9	49.94803	61.38696	100.9420	427.4501	3.427293	3.959357	24.46237	63.04825
10	45.67962	55.96655	90.64886	395.7321	3.193319	3.689060	22.79238	56.13729
11	42.19473	51.56368	82.32249	367.1746	2.980738	3.443477	21.27507	50.57643
12	39.29710	47.92135	75.47513	341.4283	2.787377	3.220098	19.89495	46.03806
13	36.85041	44.85986	69.76059	318.1865	2.611307	3.016694	18.63825	42.28334
14	34.75706	42.25000	64.92757	297.1799	2.450815	2.831288	17.49274	39.13556
15	32.94540	39.99660	60.78990	278.1714	2.304378	2.662117	16.44754	36.46225
16	31.36162	38.02821	57.20740	260.9522	2.170638	2.507614	15.49297	34.16292
17	29.96463	36.29023	54.07294	245.3382	2.048383	2.366381	14.62037	32.16056
18	28.72253	34.74051	51.30363	231.1663	1.936536	2.237170	13.82206	30.39573
19	27.61017	33.34611	48.83473	218.2929	1.834131	2.118867	13.09114	28.82226
20	26.51446	32.23830	46.91130	206.5903	1.740306	2.010476	12.42147	27.40412
21	25.43448	31.02668	45.00648	195.9457	1.654288	1.911105	11.80751	26.11322
22	24.45063	29.91294	43.26868	186.2589	1.575387	1.819955	11.24435	24.92767
23	23.55019	28.88360	41.67334	177.4409	1.502981	1.736309	10.72756	23.83042
24	22.72268	27.92800	40.20078	169.4126	1.436516	1.659525	10.25316	22.80832
25	21.95935	27.03762	38.83525	162.1039	1.375491	1.589027	9.817595	21.85133
26	21.25293	26.20572	37.56410	155.4521	1.319458	1.524294	9.417655	20.95179
27	20.59726	25.42690	36.37716	149.4016	1.268013	1.464863	9.050465	20.10401
28	19.98713	24.69679	35.26621	143.9027	1.220793	1.410313	8.713435	19.30378
29	19.41809	24.01188	34.22466	138.9116	1.177473	1.360268	8.404238	18.54802
30	18.88633	23.36921	33.24707	134.3888	1.137759	1.314389	8.120779	17.83451
31	18.38851	22.76631	32.32900	130.2998	1.101388	1.272370	7.861176	17.16168
32	17.92175	22.20103	31.46678	126.6133	1.068121	1.233939	7.623733	16.52836
33	17.48353	21.67145	30.65724	123.3021	1.037746	1.198849	7.406930	15.93366
34	17.07157	21.17583	29.89769	120.3420	1.010071	1.166878	7.209403	15.37688
35	16.68388	20.71257	29.18572	117.7116	.9849257	1.137828	7.029925	14.85730
36	16.31868	20.28010	28.51913	115.3923	.9621555	1.111524	6.867405	14.37422
37	15.97433	19.87698	27.89592	113.3678	.9416240	1.087805	6.720860	13.92688
38	15.64937	19.50176	27.31411	111.6242	.9232095	1.066531	6.589425	13.51435
39	15.34246	19.15302	26.77183	110.1494	.9068038	1.047579	6.472331	13.13558
40	15.05235	18.82936	26.26717	108.9335	.8923124	1.030838	6.368896	12.78931
41	14.77792	18.52932	25.79822	107.9683	.8796518	1.016212	6.278531	12.47401
42	14.51807	18.25143	25.36295	107.2473	.8687507	1.003618	6.200725	12.18802
43	14.27181	17.99411	24.95931	106.7658	.8595476	.9929863	6.135037	11.92930
44	14.03816	17.75567	24.58501	106.5205	.8519912	.9842570	6.081103	11.69552
45	13.81617	17.53420	24.23765	106.5099	.8460397	.9773813	6.038624	11.48401
46	13.60491	17.32760	23.91451	106.7338	.8416600	.9723218	6.007364	11.29171
47	13.40343	17.13342	23.61268	107.1937	.8388283	.9690506	5.987154	11.11507
48	13.21077	16.94887	23.32881	107.8927	.8375292	.9675497	5.977880	10.95009
49	13.21077	16.94887	23.32881	108.8355	.8377554	.9678111	5.979495	10.95009
50	13.21077	16.94887	23.32881	110.0283	.8395082	.9698359	5.992006	10.95009
51	13.21077	16.94887	23.32881	111.4791	.8427970	.9736354	6.015480	10.95009
52	13.21077	16.94887	23.32881	113.1979	.8476402	.9792302	6.050048	10.95009
53	13.21077	16.94887	23.32881	115.1963	.8540640	.9866515	6.095899	10.95009
54	13.21077	16.94887	23.32881	117.4882	.8621043	.9959400	6.153285	10.95009
55	13.21077	16.94887	23.32881	120.0895	.8718054	1.007147	6.222527	10.95009
56	15.15094	20.02285	28.20629	123.0188	.8832216	1.020336	6.304012	13.58719
57	17.09110	23.09682	33.08376	126.2972	.8964174	1.035580	6.398197	16.22429
58	19.03127	26.17079	37.96124	129.9484	.9114678	1.052967	6.505619	18.86139
59	20.97144	29.24476	42.83872	133.9997	.9284590	1.072596	6.626894	21.49850
60	22.91160	32.31874	47.71619	138.4816	.9474899	1.094581	6.762727	24.13560
61	24.85177	35.39271	52.59367	143.4286	.9686722	1.119052	6.913916	26.77270
62	26.79193	38.46669	57.47115	148.8796	.9921321	1.146154	7.081361	29.40980
63	28.73210	41.54065	62.34863	154.8780	1.018011	1.176050	7.266074	32.04690
64	30.67226	44.61462	67.22610	161.4730	1.046468	1.208925	7.469188	34.68400
65	32.61243	47.68860	72.10358	168.7195	1.077680	1.244983	7.691964	37.32110

Hidalgo 1996 NOx MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
3	2.721836	2.991273	3.231698	5.031935	2.826218	3.278731	24.58360	.8271294
4	2.496692	2.746373	3.019742	5.084005	2.707185	3.140639	23.54821	.7911366
5	2.360730	2.598735	2.892683	5.136077	2.596850	3.012639	22.58847	.7612685
6	2.269508	2.500115	2.808559	5.188148	2.494553	2.893962	21.69864	.7370553
7	2.203965	2.429797	2.749334	5.240218	2.399689	2.783910	20.87348	.7180440
8	2.154562	2.377388	2.705939	5.292289	2.311714	2.681849	20.10824	.7037984
9	2.115989	2.337086	2.673298	5.344360	2.230129	2.587201	19.39857	.6938980
10	2.085053	2.305386	2.648331	5.396431	2.154480	2.499439	18.74055	.6879393
11	2.059718	2.280035	2.629051	5.448501	2.084355	2.418086	18.13057	.6855355
12	2.038617	2.259515	2.614110	5.500572	2.019378	2.342706	17.56537	.6863159
13	2.020802	2.242760	2.602552	5.552643	1.959206	2.272900	17.04198	.6899262
14	2.005592	2.228993	2.593680	5.604713	1.903529	2.208307	16.55767	.6960289
15	1.992483	2.217635	2.586966	5.656785	1.852061	2.148600	16.10999	.7043028
16	1.981094	2.208241	2.582004	5.708856	1.804547	2.093477	15.69668	.7144433
17	1.971133	2.200464	2.578471	5.760926	1.760749	2.042667	15.31572	.7261623
18	1.962369	2.194024	2.576109	5.812998	1.720456	1.995923	14.96523	.7391878
19	1.954619	2.188697	2.574708	5.865068	1.683474	1.953019	14.64355	.7532647
20	1.956524	2.188428	2.579175	5.917139	1.649627	1.913754	14.34913	.7681544
21	1.968872	2.205256	2.599072	5.969210	1.618758	1.877942	14.08062	.7836344
22	1.980182	2.220868	2.617681	6.021281	1.590724	1.845419	13.83677	.7994989
23	1.990593	2.235397	2.635137	6.073351	1.565397	1.816037	13.61646	.8155588
24	2.000216	2.248954	2.651551	6.125422	1.542662	1.789661	13.41870	.8316411
25	2.009145	2.261628	2.667017	6.177493	1.522417	1.766175	13.24261	.8475896
26	2.017460	2.273496	2.681612	6.229563	1.504573	1.745475	13.08740	.8632642
27	2.025231	2.284623	2.695409	6.281634	1.489051	1.727468	12.95238	.8785418
28	2.032514	2.295065	2.708468	6.333706	1.475784	1.712076	12.83697	.8933153
29	2.039360	2.304871	2.720848	6.385776	1.464713	1.699232	12.74068	.9074945
30	2.045815	2.314086	2.732601	6.437847	1.455791	1.688881	12.66307	.9210050
31	2.051916	2.322751	2.743778	6.489917	1.448979	1.680979	12.60382	.9337897
32	2.057699	2.330902	2.754428	6.541988	1.444249	1.675492	12.56267	.9458078
33	2.063195	2.338576	2.764601	6.594059	1.441579	1.672394	12.53945	.9570342
34	2.068434	2.345807	2.774345	6.646130	1.440959	1.671675	12.53406	.9674617
35	2.073440	2.352627	2.783710	6.698200	1.442387	1.673331	12.54647	.9770981
36	2.078240	2.359072	2.792749	6.750271	1.445867	1.677369	12.57675	.9859686
37	2.082855	2.365175	2.801514	6.802343	1.451416	1.683806	12.62501	.9941142
38	2.087307	2.370970	2.810059	6.854414	1.459056	1.692669	12.69146	1.001593
39	2.091618	2.376492	2.818443	6.906484	1.468820	1.703997	12.77640	1.008481
40	2.095807	2.381777	2.826727	6.958555	1.480751	1.717838	12.88018	1.014866
41	2.099894	2.386864	2.834973	7.010626	1.494900	1.734253	13.00325	1.020858
42	2.103898	2.391790	2.843247	7.062696	1.511329	1.753312	13.14616	1.026580
43	2.107838	2.396598	2.851619	7.114768	1.530110	1.775100	13.30952	1.032171
44	2.111734	2.401330	2.860162	7.166839	1.551325	1.799712	13.49406	1.037790
45	2.115604	2.406029	2.868953	7.218910	1.575069	1.827258	13.70060	1.043609
46	2.119468	2.410743	2.878071	7.270980	1.601450	1.857862	13.93007	1.049818
47	2.123345	2.415522	2.887600	7.323050	1.630586	1.891663	14.18350	1.056623
48	2.127255	2.420414	2.897628	7.375122	1.662611	1.928816	14.46207	1.064247
49	2.208473	2.518104	3.022679	7.427193	1.697674	1.969494	14.76707	1.098901
50	2.289691	2.615794	3.147729	7.479263	1.735940	2.013887	15.09992	1.133556
51	2.370909	2.713484	3.272779	7.531333	1.777591	2.062206	15.46222	1.168211
52	2.452127	2.811174	3.397829	7.583405	1.822828	2.114686	15.85571	1.202865
53	2.533344	2.908864	3.522879	7.635475	1.871873	2.171583	16.28231	1.237520
54	2.614563	3.006554	3.647930	7.687546	1.924968	2.233180	16.74416	1.272174
55	2.695781	3.104245	3.772979	7.739617	1.982382	2.299787	17.24357	1.306828
56	2.776998	3.201934	3.898030	7.791689	2.044410	2.371746	17.78312	1.341483
57	2.858216	3.299624	4.023080	7.843759	2.113374	2.449433	18.36560	1.376137
58	2.939434	3.397315	4.148129	7.895829	2.183631	2.533258	18.99412	1.410792
59	3.020652	3.495005	4.273180	7.947900	2.261569	2.623676	19.67206	1.445447
60	3.101869	3.592695	4.398231	7.999971	2.345619	2.721182	20.40315	1.480101
61	3.183088	3.690385	4.523280	8.052042	2.436248	2.826323	21.19148	1.514756
62	3.264305	3.788075	4.648330	8.104113	2.533975	2.939697	22.04156	1.549410
63	3.345523	3.885765	4.773380	8.156183	2.639368	3.061964	22.95830	1.584065
64	3.426741	3.983455	4.898431	8.208254	2.753050	3.193848	23.94715	1.618719
65	3.507959	4.081145	5.023480	8.260326	2.875709	3.336147	25.01410	1.653374

Hidalgo 1996 VOC MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
3	31.27751	34.97961	56.44534	87.41235	1.228395	1.628639	6.227495	20.38047
4	21.37043	21.82858	37.11409	68.38551	1.166563	1.546660	5.914030	17.81207
5	16.71453	17.12914	28.90790	58.05507	1.108808	1.470087	5.621232	15.90742
6	13.65129	14.02187	23.48174	50.83085	1.051575	1.394205	5.331083	14.39048
7	11.70325	12.04119	20.02872	45.83453	1.001308	1.327560	5.076249	13.30184
8	10.48984	10.78271	17.88306	42.48228	.9542738	1.265201	4.837804	12.45132
9	9.547770	9.811284	16.23362	39.60769	.9102409	1.206821	4.614574	11.77738
10	8.781416	9.029482	14.91330	37.06875	.8689955	1.152137	4.405477	11.23635
11	8.143369	8.386593	13.83622	34.81076	.8303414	1.100888	4.209514	10.79666
12	7.601768	7.848162	12.94296	32.79203	.7940974	1.052835	4.025771	10.43515
13	7.134412	7.389987	12.19121	30.97966	.7600965	1.007756	3.853400	10.13453
14	6.725363	6.994582	11.55010	29.34693	.7281848	.9654467	3.691619	9.881745
15	6.362889	6.649028	10.99666	27.87174	.6982203	.9257187	3.539711	9.666783
16	6.038170	6.343586	10.51348	26.53551	.6700715	.8883984	3.397007	9.481905
17	5.726994	6.054693	10.06217	25.25036	.6420177	.8512040	3.254785	9.311695
18	5.460477	5.810285	9.684963	24.15324	.6172416	.8183551	3.129179	9.171195
19	5.215329	5.587952	9.345613	23.15322	.5939382	.7874590	3.011040	9.045991
20	4.997324	5.423892	9.071878	22.24431	.5720122	.7583888	2.899883	8.933131
21	4.824194	5.254521	8.802773	21.41932	.5513752	.7310277	2.795262	8.830279
22	4.665683	5.098912	8.556213	20.66455	.5319453	.7052672	2.696760	8.735582
23	4.519870	4.955204	8.328901	19.97310	.5136470	.6810068	2.603995	8.647587
24	4.385166	4.821898	8.118191	19.33888	.4964099	.6581534	2.516609	8.565159
25	4.260248	4.697777	7.921959	18.75645	.4801689	.6366206	2.434273	8.487438
26	4.144010	4.581854	7.738496	18.22100	.4648636	.6163284	2.356681	8.413775
27	4.035514	4.473319	7.566437	17.72824	.4504379	.5972024	2.283548	8.343701
28	3.927838	4.365357	7.394897	17.24716	.4360164	.5780821	2.210437	8.272818
29	3.832938	4.270094	7.243131	16.83076	.4232448	.5611491	2.145690	8.209242
30	3.743695	4.180520	7.100046	16.44652	.4112051	.5451865	2.084653	8.148592
31	3.659609	4.096244	6.965075	16.09168	.3998555	.5301390	2.027115	8.090825
32	3.580243	4.016933	6.837755	15.76380	.3891578	.5159557	1.972882	8.035934
33	3.505216	3.942292	6.717701	15.46065	.3790760	.5025889	1.921771	7.983958
34	3.434187	3.872056	6.604586	15.18023	.3695768	.4899946	1.873613	7.934951
35	3.366855	3.805984	6.498123	14.92076	.3606294	.4781319	1.828254	7.888979
36	3.302949	3.743854	6.398057	14.68059	.3522049	.4669625	1.785544	7.846103
37	3.242224	3.685457	6.304146	14.45828	.3442766	.4564510	1.745351	7.806377
38	3.184460	3.630594	6.216155	14.25250	.3368199	.4465647	1.707548	7.769843
39	3.126101	3.575955	6.128895	14.05062	.3293878	.4367110	1.669870	7.734539
40	3.073815	3.527769	6.052382	13.87527	.3228324	.4280196	1.636637	7.704607
41	3.023913	3.482531	5.981061	13.71313	.3166828	.4198664	1.605461	7.677828
42	2.976233	3.440050	5.914668	13.56333	.3109209	.4122271	1.576250	7.654124
43	2.930617	3.400127	5.852913	13.42508	.3055295	.4050791	1.548918	7.633366
44	2.886920	3.362559	5.795485	13.29765	.3004930	.3984016	1.523385	7.615380
45	2.844997	3.327125	5.742028	13.18041	.2957968	.3921753	1.499578	7.599937
46	2.804707	3.293589	5.692164	13.07277	.2914276	.3863823	1.477427	7.586741
47	2.765907	3.261695	5.645441	12.97422	.2873727	.3810064	1.456870	7.575427
48	2.728684	3.230978	5.600685	12.88294	.2836211	.3760323	1.437851	7.565545
49	2.719435	3.221069	5.580162	12.78528	.2801620	.3714462	1.420315	7.565362
50	2.711195	3.212161	5.561430	12.69683	.2769861	.3672355	1.404214	7.565362
51	2.702957	3.203256	5.542712	12.61242	.2739122	.3631600	1.388630	7.565362
52	2.695651	3.195359	5.526122	12.54158	.2712936	.3596882	1.375355	7.565362
53	2.688747	3.187897	5.510454	12.47873	.2689339	.3565597	1.363392	7.565362
54	2.682217	3.180840	5.495640	12.42358	.2668269	.3537661	1.352711	7.565362
55	2.676391	3.174597	5.482285	12.37588	.2649668	.3513000	1.343281	7.565755
56	2.785020	3.309206	5.681972	12.33540	.2633488	.3491548	1.335078	7.691576
57	2.893950	3.444141	5.882347	12.30198	.2619685	.3473247	1.328080	7.817397
58	3.003160	3.579378	6.083362	12.27548	.2608223	.3458051	1.322270	7.943218
59	3.112630	3.714897	6.284973	12.25579	.2599072	.3445918	1.317630	8.069039
60	3.222344	3.850681	6.487143	12.24286	.2592208	.3436817	1.314151	8.194860
61	3.332288	3.986712	6.689834	12.23663	.2587612	.3430724	1.311821	8.320681
62	3.463123	4.148548	6.931163	12.23796	.2585086	.3427375	1.310540	8.470095
63	3.532096	4.233847	7.058437	12.24248	.2585031	.3427302	1.310512	8.548733
64	3.670264	4.404685	7.313489	12.25951	.2587558	.3430653	1.311794	8.706007
65	3.808709	4.575821	7.569171	12.28736	.2593613	.3438680	1.314863	8.863285

Hidalgo 1996 CO MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
3	269.9192	300.7122	443.0125	886.8339	4.594675	5.175355	41.50571	180.6098
4	201.2891	204.2184	316.7862	808.0989	4.236296	4.771683	38.26830	144.1522
5	162.5145	164.4022	255.8097	740.2754	3.912905	4.407422	35.34698	117.8039
6	135.1614	136.0026	210.7958	676.0485	3.603407	4.058809	32.55115	97.29925
7	116.8855	116.9500	180.0024	622.0929	3.340707	3.762909	30.17807	82.87693
8	103.1386	102.6248	156.6346	573.6902	3.102738	3.494865	28.02839	71.79341
9	92.43710	91.50732	138.4450	530.2056	2.886911	3.251762	26.07873	63.13101
10	83.87926	82.65752	123.9834	491.0844	2.690936	3.031019	24.30840	56.25388
11	76.88509	75.46297	112.2745	455.8402	2.512782	2.830349	22.69905	50.71299
12	71.06490	69.50802	102.6414	424.0469	2.350650	2.647727	21.23444	46.18571
13	66.14719	64.50098	94.60118	395.3303	2.202940	2.481349	19.90012	42.43644
14	61.93718	60.23146	87.80178	369.3610	2.068230	2.329615	18.68322	39.29055
15	58.29150	56.54414	81.98167	345.8492	1.945256	2.191099	17.57235	36.61694
16	55.10244	53.32213	76.94322	324.5392	1.832889	2.064531	16.55729	34.31604
17	52.12249	50.30900	72.27773	304.0582	1.723999	1.941880	15.57364	32.19457
18	49.63528	47.78698	68.41154	286.6064	1.630454	1.836513	14.72861	30.44037
19	47.40495	45.51479	64.96165	270.7445	1.544762	1.739991	13.95451	28.87493
20	45.52221	44.08237	62.42612	256.3175	1.466211	1.651512	13.24492	27.46298
21	43.89121	42.63529	60.00510	243.1879	1.394161	1.570356	12.59406	26.17688
22	42.40200	41.29721	57.79174	231.2332	1.328039	1.495877	11.99675	24.99508
23	41.03580	40.05277	55.75471	220.3450	1.267331	1.427498	11.44836	23.90084
24	39.77718	38.89006	53.86911	210.4268	1.211578	1.364698	10.94471	22.88116
25	38.61341	37.79991	52.11520	201.3927	1.160364	1.307011	10.48207	21.92613
26	37.53394	36.77534	50.47732	193.1662	1.113316	1.254018	10.05707	21.02816
27	36.52990	35.81103	48.94308	185.6792	1.070100	1.205340	9.666677	20.18162
28	35.53750	34.84790	47.41565	178.4669	1.028045	1.157970	9.286776	19.33384
29	34.66685	33.99599	46.06660	172.3211	.9918132	1.117159	8.959481	18.58140
30	33.85220	33.19447	44.79731	166.7494	.9585824	1.079729	8.659294	17.87082
31	33.08889	32.44132	43.60289	161.7092	.9281337	1.045432	8.384237	17.20054
32	32.37293	31.73484	42.47948	157.1629	.9002713	1.014048	8.132544	16.56942
33	31.70076	31.07344	41.42386	153.0770	.8748180	.9853784	7.902613	15.97659
34	31.06920	30.45567	40.43330	149.4221	.8516157	.9592437	7.693016	15.42136
35	30.47543	29.88010	39.50539	146.1720	.8305222	.9354844	7.502470	14.90302
36	29.91689	29.34526	38.63792	143.3041	.8114101	.9139569	7.329821	14.42088
37	29.39123	28.84969	37.82883	140.7984	.7941656	.8945332	7.174046	13.97419
38	28.89632	28.39185	37.07604	138.6378	.7786880	.8770993	7.034227	13.56205
39	28.40194	27.94496	36.33556	136.7040	.7640785	.8606436	6.902256	13.16081
40	27.96428	27.55977	35.69221	135.2115	.7519732	.8470082	6.792902	12.81639
41	27.55165	27.20709	35.09841	134.0266	.7413927	.8350908	6.697324	12.50269
42	27.16235	26.88493	34.55165	133.1414	.7322779	.8248239	6.614986	12.21795
43	26.79475	26.59107	34.04908	132.5501	.7245779	.8161508	6.545429	11.96024
44	26.44723	26.32302	33.58765	132.2489	.7182505	.8090236	6.488271	11.72127
45	26.11814	26.07794	33.16386	132.2356	.7132607	.8034032	6.443195	11.51636
46	25.80581	25.85246	32.77374	132.5103	.7095814	.7992591	6.409959	11.32452
47	25.50845	25.64269	32.41280	133.0748	.7071928	.7965685	6.388381	11.14820
48	25.22415	25.44399	32.07587	133.9327	.7060817	.7953171	6.378345	10.98354
49	25.21858	25.44011	32.06931	135.0897	.7062424	.7954980	6.379796	10.98033
50	25.21858	25.44011	32.06931	136.5535	.7076755	.7971122	6.392742	10.98033
51	25.21858	25.44011	32.06931	138.4558	.7106012	.8004077	6.419170	10.98033
52	25.21858	25.44011	32.06931	140.5854	.7146910	.8050144	6.456117	10.98033
53	25.21858	25.44011	32.06931	143.0586	.7200993	.8111062	6.504972	10.98033
54	25.21858	25.44011	32.06931	145.8924	.7268554	.8187160	6.566002	10.98033
55	25.23329	25.45680	32.09187	149.1063	.7349964	.8278859	6.639543	10.98855
56	29.93968	30.79564	39.30716	152.7230	.7445674	.8386666	6.726002	13.61814
57	34.64608	36.13451	46.52248	156.7680	.7556218	.8511180	6.825861	16.24773
58	39.35248	41.47337	53.73779	161.2706	.7682215	.8653100	6.939680	18.87733
59	44.05889	46.81224	60.95312	166.2639	.7824383	.8813236	7.068107	21.50692
60	48.76527	52.15108	68.16842	171.7850	.7983536	.8992502	7.211877	24.13651
61	53.47167	57.48994	75.38374	177.8761	.8160599	.9191944	7.371826	26.76610
62	59.06051	63.82985	83.95193	185.9148	.8395573	.9456612	7.584087	29.88875
63	62.00201	67.16663	88.46147	190.5253	.8530638	.9608749	7.706099	31.53224
64	67.88500	73.84019	97.48061	200.6028	.8825919	.9941347	7.972839	34.81922
65	73.76801	80.51379	106.4998	211.9326	.9157137	1.031442	8.272041	38.10622

Hidalgo 1996 NOx MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
3	3.328166	3.677773	3.896675	5.562130	2.015962	2.370959	30.73057	.8277882
4	2.918346	3.193412	3.548411	5.615399	1.931467	2.271584	29.44255	.7918732
5	2.769334	3.031904	3.413627	5.672604	1.853113	2.179433	28.24816	.7620249
6	2.662692	2.917562	3.316462	5.733385	1.776072	2.088826	27.07378	.7364416
7	2.590215	2.841101	3.250853	5.790588	1.708964	2.009901	26.05081	.7176646
8	2.534773	2.783843	3.201746	5.847794	1.646703	1.936676	25.10172	.7035900
9	2.490930	2.739780	3.164402	5.904999	1.588939	1.868740	24.22120	.6938053
10	2.455392	2.705248	3.135870	5.962204	1.535356	1.805721	23.40439	.6879138
11	2.426039	2.677866	3.114184	6.019408	1.485665	1.747280	22.64692	.6855351
12	2.401441	2.656006	3.097961	6.076613	1.439602	1.693105	21.94475	.6863047
13	2.380590	2.638511	3.086179	6.133818	1.396927	1.642915	21.29423	.6898744
14	2.362760	2.624526	3.078058	6.191022	1.357422	1.596454	20.69202	.6959121
15	2.347404	2.613403	3.072977	6.248227	1.320887	1.553486	20.13511	.7041019
16	2.334106	2.604632	3.070433	6.305433	1.287142	1.513798	19.62071	.7141438
17	2.321869	2.597443	3.070044	6.366212	1.254160	1.475009	19.11794	.7265255
18	2.311863	2.592335	3.071486	6.423417	1.225664	1.441495	18.68356	.7395091
19	2.303110	2.588562	3.074374	6.480622	1.199499	1.410722	18.28471	.7535266
20	2.300260	2.597806	3.087858	6.537827	1.175542	1.382546	17.91951	.7683434
21	2.312248	2.627587	3.116684	6.595031	1.153682	1.356837	17.58629	.7837417
22	2.323371	2.655279	3.144126	6.652236	1.133819	1.333476	17.28351	.7995186
23	2.333752	2.681112	3.170291	6.709441	1.115864	1.312360	17.00982	.8154886
24	2.343490	2.705276	3.195261	6.766646	1.099737	1.293393	16.76398	.8314815
25	2.352668	2.727930	3.219104	6.823851	1.085366	1.276491	16.54490	.8473434
26	2.361357	2.749204	3.241872	6.881055	1.072687	1.261580	16.35164	.8629366
27	2.369616	2.769213	3.263613	6.938260	1.061646	1.248595	16.18334	.8781395
28	2.377978	2.789197	3.285636	6.999040	1.051657	1.236847	16.03107	.8937473
29	2.385507	2.806893	3.305391	7.056245	1.043852	1.227667	15.91208	.9078299
30	2.392747	2.823592	3.324248	7.113450	1.037560	1.220267	15.81618	.9212502
31	2.399734	2.839363	3.342251	7.170653	1.032756	1.214617	15.74294	.9339519
32	2.406504	2.854275	3.359448	7.227859	1.029418	1.210691	15.69206	.9458945
33	2.413087	2.868391	3.375891	7.285064	1.027532	1.208474	15.66332	.9570547
34	2.419514	2.881773	3.391642	7.342269	1.027092	1.207955	15.65660	.9674243
35	2.425815	2.894484	3.406765	7.399473	1.028094	1.209134	15.67188	.9770116
36	2.432019	2.906585	3.421335	7.456679	1.030543	1.212014	15.70921	.9858418
37	2.438156	2.918138	3.435431	7.513883	1.034450	1.216609	15.76876	.9939544
38	2.444254	2.929209	3.449143	7.571088	1.039830	1.222937	15.85078	1.001406
39	2.450726	2.940516	3.463402	7.631868	1.047187	1.231589	15.96293	1.008682
40	2.456841	2.950803	3.476644	7.689073	1.055687	1.241586	16.09249	1.015020
41	2.463013	2.960819	3.489833	7.746278	1.065751	1.253422	16.24591	1.020971
42	2.469274	2.970640	3.503094	7.803483	1.077423	1.267149	16.42383	1.026656
43	2.475657	2.980343	3.516567	7.860686	1.090753	1.282826	16.62703	1.032216
44	2.482199	2.990011	3.530396	7.917892	1.105799	1.300523	16.85639	1.037804
45	2.488936	2.999732	3.544741	7.975098	1.122629	1.320316	17.11293	1.043590
46	2.495909	3.009596	3.559767	8.032303	1.141316	1.342293	17.39779	1.049762
47	2.503156	3.019698	3.575653	8.089506	1.161944	1.366554	17.71224	1.056520
48	2.510721	3.030137	3.592589	8.146711	1.184608	1.393209	18.05772	1.064085
49	2.618271	3.153964	3.747252	8.203917	1.209410	1.422379	18.43580	1.098018
50	2.727857	3.280100	3.904713	8.261122	1.236467	1.454200	18.84824	1.132479
51	2.844293	3.414119	4.072016	8.321901	1.267828	1.491083	19.32629	1.169093
52	2.953879	3.540255	4.229476	8.379106	1.299951	1.528863	19.81596	1.203554
53	3.063467	3.666391	4.386938	8.436312	1.334761	1.569803	20.34660	1.238015
54	3.173053	3.792527	4.544399	8.493515	1.372429	1.614104	20.92079	1.272476
55	3.282640	3.918663	4.701861	8.550722	1.413143	1.661987	21.54141	1.306936
56	3.392226	4.044799	4.859321	8.607925	1.457108	1.713695	22.21162	1.341397
57	3.501813	4.170935	5.016784	8.665129	1.504554	1.769495	22.93485	1.375858
58	3.611399	4.297071	5.174244	8.722334	1.555727	1.829679	23.71491	1.410318
59	3.720986	4.423207	5.331706	8.779539	1.610901	1.894569	24.55596	1.444779
60	3.830573	4.549343	5.489167	8.836744	1.670375	1.964516	25.46257	1.479240
61	3.940159	4.675479	5.646628	8.893950	1.734479	2.039908	26.43974	1.513700
62	4.070293	4.825265	5.833613	8.961880	1.817116	2.137097	27.69943	1.554623
63	4.138784	4.904100	5.932027	8.997633	1.863661	2.191838	28.40894	1.576161
64	4.275768	5.061770	6.128853	9.069139	1.963585	2.309359	29.93216	1.619236
65	4.412752	5.219440	6.325681	9.140645	2.073412	2.438526	31.60632	1.662312

Webb 1996 VOC MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HGV	LDDV	LDDT	HDDV	MC
3	20.58036	21.25398	28.92821	50.10615	1.679486	2.412585	5.436356	17.62189
4	14.30577	14.94804	20.31554	38.22254	1.594512	2.290520	5.161302	15.54410
5	10.99271	11.57971	15.66515	31.83017	1.515170	2.176545	4.904479	14.00519
6	8.972248	9.507469	12.78031	27.71211	1.441044	2.070062	4.664538	12.84363
7	7.621789	8.114397	10.83069	24.74840	1.371751	1.970523	4.440242	11.95173
8	6.854996	7.281666	9.649799	22.88227	1.306939	1.877421	4.230452	11.25610
9	6.266922	6.646553	8.750074	21.31326	1.246286	1.790292	4.034122	10.70576
10	5.784505	6.134228	8.027954	19.93334	1.189494	1.708710	3.850292	10.26457
11	5.379015	5.711514	7.436035	18.70938	1.136289	1.632282	3.678073	9.906466
12	5.031229	5.356014	6.942002	17.61671	1.086420	1.560644	3.516650	9.612360
13	4.727806	5.052073	6.523113	16.63619	1.039654	1.493465	3.365272	9.368032
14	4.459196	4.788434	6.162922	15.75255	.9957768	1.430435	3.223246	9.162754
15	4.218388	4.556798	5.849281	14.95334	.9545910	1.371272	3.089931	8.988319
16	4.000117	4.350931	5.573036	14.22820	.9159147	1.315713	2.964738	8.838387
17	3.800360	4.166066	5.327179	13.56839	.8795787	1.263517	2.847123	8.708010
18	3.615988	3.998505	5.106278	12.96648	.8454281	1.214459	2.736579	8.593292
19	3.444536	3.845352	4.906067	12.41608	.8133188	1.168334	2.632645	8.491155
20	3.295877	3.718932	4.740138	11.92326	.7831178	1.124951	2.534886	8.399164
21	3.182803	3.598704	4.581852	11.48899	.7547020	1.084131	2.442907	8.315384
22	3.079182	3.488419	4.436988	11.09169	.7279579	1.045713	2.356339	8.238287
23	2.983771	3.386747	4.303675	10.72765	.7027795	1.009544	2.274838	8.166677
24	2.895539	3.292604	4.180393	10.39361	.6790692	.9754843	2.198090	8.099623
25	2.813627	3.205106	4.065907	10.08669	.6567366	.9434035	2.125801	8.036413
26	2.737312	3.123527	3.959207	9.804323	.6356977	.9131810	2.057700	7.976516
27	2.665980	3.047267	3.859464	9.544245	.6158745	.8847048	1.993534	7.919552
28	2.599112	2.975828	3.765998	9.304424	.5971947	.8578714	1.933069	7.865251
29	2.536260	2.908791	3.678244	9.083053	.5795912	.8325840	1.876088	7.813445
30	2.477038	2.845801	3.595732	8.878510	.5630020	.8087535	1.822390	7.764032
31	2.421113	2.786554	3.518068	8.689348	.5473690	.7862966	1.771787	7.716980
32	2.368192	2.730785	3.444914	8.514265	.5326386	.7651364	1.724107	7.672282
33	2.318019	2.678262	3.375980	8.352095	.5187609	.7452011	1.679186	7.629969
34	2.270367	2.628776	3.311012	8.201783	.5056896	.7264241	1.636875	7.590087
35	2.225036	2.582140	3.249783	8.062388	.4933817	.7087439	1.597035	7.552688
36	2.181845	2.538181	3.192091	7.933055	.4817971	.6921026	1.559537	7.517823
37	2.140633	2.496737	3.137743	7.813016	.4708987	.6764470	1.524260	7.485535
38	2.101255	2.457659	3.086563	7.701576	.4606521	.6617277	1.491092	7.455863
39	2.063577	2.420805	3.038382	7.598109	.4510252	.6478986	1.459931	7.428814
40	2.027480	2.386036	2.993034	7.502050	.4419882	.6349169	1.430679	7.404383
41	1.992853	2.353222	2.950358	7.412889	.4335136	.6227432	1.403247	7.382533
42	1.959592	2.322227	2.910190	7.330160	.4255758	.6113406	1.377553	7.363197
43	1.927602	2.292922	2.872364	7.253449	.4181512	.6006751	1.353520	7.346278
44	1.896794	2.265173	2.836710	7.182381	.4112179	.5907153	1.331078	7.331627
45	1.867083	2.238841	2.803049	7.116615	.4047555	.5814322	1.310159	7.319060
46	1.838387	2.213781	2.771190	7.055847	.3987454	.5727985	1.290705	7.308332
47	1.810627	2.189835	2.740925	6.999801	.3931704	.5647901	1.272660	7.299137
48	1.784029	2.166663	2.711666	6.947423	.3880147	.5573839	1.255971	7.291115
49	1.775466	2.158071	2.699795	6.892542	.3832637	.5505590	1.240592	7.291115
50	1.767405	2.149983	2.688623	6.842647	.3789040	.5442965	1.226481	7.291115
51	1.759807	2.142360	2.678097	6.797487	.3749239	.5385789	1.213597	7.291115
52	1.752638	2.135167	2.668168	6.756835	.3713122	.5333906	1.201906	7.291115
53	1.745865	2.128372	2.658790	6.720500	.3680590	.5287174	1.191376	7.291115
54	1.739461	2.121946	2.649924	6.688308	.3651554	.5245465	1.181978	7.291115
55	1.733397	2.115863	2.641533	6.660112	.3625938	.5208668	1.173686	7.291115
56	1.779056	2.185860	2.737519	6.635788	.3603671	.5176680	1.166478	7.393517
57	1.825009	2.256154	2.833916	6.615231	.3584694	.5149419	1.160335	7.495919
58	1.871238	2.326724	2.930696	6.598356	.3568955	.5126811	1.155241	7.598320
59	1.917725	2.397552	3.027833	6.585101	.3556415	.5108797	1.151181	7.700723
60	1.964451	2.468621	3.125304	6.575418	.3547038	.5095327	1.148146	7.803125
61	2.011403	2.539916	3.223087	6.569279	.3540801	.5086367	1.146128	7.905527
62	2.058564	2.611422	3.321163	6.566675	.3537686	.5081894	1.145119	8.007929
63	2.105923	2.683126	3.419512	6.567614	.3537686	.5081894	1.145119	8.110331
64	2.153467	2.755015	3.518119	6.572124	.3540801	.5086367	1.146128	8.212734
65	2.201185	2.827080	3.616967	6.580248	.3547038	.5095327	1.148146	8.315136

Webb 1996 CO MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDTV	LDDV	LDDT	HDDV	MC
3	136.4981	164.2676	233.4415	473.4003	5.447171	6.287858	39.21849	180.4930
4	104.5034	126.0363	179.6992	432.5255	5.020184	5.794971	36.14427	143.9469
5	85.11282	102.4509	145.3576	396.0503	4.635093	5.350449	33.37170	117.5695
6	72.11397	86.50217	121.6405	363.4498	4.287340	4.949024	30.86795	98.10520
7	62.80697	75.05180	104.4113	334.2674	3.972900	4.586055	28.60405	83.44903
8	55.82481	66.47066	91.42656	308.1051	3.688229	4.257450	26.55448	72.20708
9	50.39999	59.82597	81.35641	284.6160	3.430192	3.959590	24.69667	63.43561
10	46.06812	54.54473	73.36166	263.4968	3.196020	3.689277	23.01068	56.48219
11	42.53178	50.25575	66.88783	244.4819	2.983259	3.443679	21.47884	50.88716
12	39.59169	46.70824	61.55504	227.3388	2.789734	3.220288	20.08550	46.32091
13	37.10940	43.72685	57.09521	211.8633	2.613516	3.016872	18.81677	42.54312
14	34.98580	41.18551	53.31452	197.8761	2.452888	2.831454	17.66029	39.37600
15	33.14808	38.99130	50.06982	185.2194	2.306327	2.662273	16.60507	36.68627
16	31.54162	37.07450	47.25351	173.7541	2.172474	2.507761	15.64136	34.37280
17	30.12467	35.38184	44.78351	163.3575	2.050116	2.366520	14.76041	32.35815
18	28.86482	33.87217	42.59636	153.9213	1.938174	2.237302	13.95445	30.58248
19	27.73655	32.51335	40.64247	145.3495	1.835683	2.118992	13.21653	28.99934
20	26.63238	31.42492	39.08270	137.5574	1.741778	2.010594	12.54044	27.57249
21	25.55521	30.24105	37.50235	130.4697	1.655688	1.911217	11.92060	26.27366
22	24.57381	29.15231	36.05903	124.0198	1.576719	1.820062	11.35205	25.08082
23	23.67550	28.14560	34.73315	118.1484	1.504253	1.736411	10.83031	23.97683
24	22.84983	27.21054	33.50899	112.8028	1.437732	1.659623	10.35137	22.94845
25	22.08810	26.33891	32.37386	107.9363	1.376655	1.589120	9.911625	21.98558
26	21.38305	25.52416	31.31754	103.5072	1.320574	1.524384	9.507855	21.08051
27	20.72857	24.76112	30.33176	99.47847	1.269085	1.464949	9.137149	20.22753
28	20.11948	24.04557	29.40980	95.81712	1.221826	1.410396	8.796892	19.42237
29	19.55135	23.37416	28.54616	92.49378	1.178469	1.360348	8.484734	18.66197
30	19.02040	22.74407	27.73631	89.48235	1.138722	1.314466	8.198559	17.94409
31	18.52332	22.15293	26.97648	86.75961	1.102319	1.272445	7.936469	17.26712
32	18.05726	21.59869	26.26348	84.30502	1.069024	1.234012	7.696752	16.62991
33	17.61969	21.07951	25.59456	82.10027	1.038624	1.198919	7.477873	16.03156
34	17.20839	20.59372	24.96731	80.12927	1.010926	1.166946	7.278454	15.47136
35	16.82135	20.13978	24.37958	78.37784	.9857588	1.137896	7.097258	14.94858
36	16.45681	19.71620	23.82938	76.83354	.9629695	1.111589	6.933179	14.46253
37	16.11316	19.32155	23.31490	75.48554	.9424206	1.087869	6.785232	14.01245
38	15.78892	18.95444	22.83435	74.32454	.9239903	1.066594	6.652538	13.59738
39	15.48277	18.61348	22.38604	73.34258	.9075708	1.047640	6.534321	13.21629
40	15.19348	18.29728	21.96828	72.53299	.8930671	1.030898	6.429896	12.86788
41	14.91989	18.00443	21.57939	71.89029	.8803958	1.016271	6.338666	12.55065
42	14.66094	17.73347	21.21761	71.41024	.8694855	1.003677	6.260114	12.26290
43	14.41561	17.48283	20.88118	71.08962	.8602746	.9930447	6.193797	12.00259
44	14.18293	17.25082	20.56815	70.92632	.8527119	.9843148	6.139347	11.76738
45	13.96194	17.03556	20.27655	70.91920	.8467552	.9774389	6.096461	11.55457
46	13.75170	16.83493	20.00410	71.06829	.8423719	.9723790	6.064902	11.36108
47	13.55124	16.64646	19.74845	71.37453	.8395380	.9691077	6.044498	11.18336
48	13.35958	16.46737	19.50686	71.83999	.8382376	.9676067	6.035136	11.01737
49	13.35958	16.46737	19.50686	72.46773	.8384640	.9678680	6.036766	11.01737
50	13.35958	16.46737	19.50686	73.26195	.8402183	.9698931	6.049397	11.01737
51	13.35958	16.46737	19.50686	74.22799	.8435099	.9736927	6.073095	11.01737
52	13.35958	16.46737	19.50686	75.37241	.8483571	.9792879	6.107994	11.01737
53	13.35958	16.46737	19.50686	76.70303	.8547864	.9867096	6.154284	11.01737
54	13.35958	16.46737	19.50686	78.22907	.8628336	.9959985	6.212220	11.01737
55	13.35958	16.46737	19.50686	79.96119	.8725427	1.007206	6.282126	11.01737
56	15.33335	19.46687	23.37660	81.91166	.8839687	1.020396	6.364390	13.67067
57	17.30711	22.46636	27.24634	84.09452	.8971757	1.035641	6.459477	16.32397
58	19.28088	25.46585	31.11607	86.52568	.9122387	1.053029	6.567928	18.97727
59	21.25464	28.46534	34.98581	89.22322	.9292444	1.072659	6.690365	21.63058
60	23.22841	31.46484	38.85555	92.20747	.9482913	1.094646	6.827499	24.28388
61	25.20218	34.46433	42.72528	95.50143	.9694915	1.119118	6.980136	26.93718
62	27.17594	37.46382	46.59502	99.13092	.9929713	1.146221	7.149186	29.59048
63	29.14971	40.46332	50.46476	103.1249	1.018872	1.176120	7.335668	32.24379
64	31.12347	43.46281	54.33449	107.5162	1.047354	1.208996	7.540727	34.89709
65	33.09724	46.46230	58.20424	112.3413	1.078592	1.245056	7.765636	37.55040

Webb 1996 NOx MOBILE5a 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HGGV	LDDV	LDDT	HDDV	MC
3	2.719235	2.905901	2.990821	4.826800	2.823670	3.270114	25.05728	.8271293
4	2.494780	2.668404	2.775669	4.876749	2.704744	3.132385	24.00193	.7911366
5	2.359192	2.525209	2.646889	4.926697	2.594509	3.004721	23.02371	.7612686
6	2.268192	2.429552	2.561612	4.976645	2.492304	2.886356	22.11673	.7370553
7	2.202793	2.361349	2.501428	5.026593	2.397526	2.776594	21.27568	.7180441
8	2.153488	2.310525	2.457098	5.076541	2.309630	2.674800	20.49569	.7037984
9	2.114985	2.271454	2.423465	5.126489	2.228118	2.580401	19.77235	.6938978
10	2.084105	2.240736	2.397411	5.176437	2.152537	2.492870	19.10164	.6879393
11	2.058814	2.216187	2.376935	5.226385	2.082476	2.411731	18.47992	.6855354
12	2.037753	2.196332	2.360684	5.276333	2.017557	2.336548	17.90383	.6863158
13	2.019975	2.180136	2.347710	5.326282	1.957440	2.266926	17.37035	.6899263
14	2.004801	2.166847	2.337326	5.376229	1.901812	2.202504	16.87671	.6960289
15	1.991727	2.155900	2.329014	5.426177	1.850392	2.142953	16.42040	.7043028
16	1.980375	2.146865	2.322382	5.476126	1.802920	2.087975	15.99913	.7144434
17	1.970451	2.139401	2.317121	5.526074	1.759162	2.037299	15.61082	.7261623
18	1.961725	2.133238	2.312985	5.576022	1.718905	1.990677	15.25358	.7391877
19	1.954014	2.128157	2.309778	5.625970	1.681956	1.947886	14.92570	.7532647
20	1.956033	2.127763	2.311455	5.675917	1.648140	1.908724	14.62562	.7681544
21	1.968452	2.144099	2.328461	5.725865	1.617299	1.873006	14.35193	.7836343
22	1.979833	2.159264	2.344280	5.775814	1.589290	1.840569	14.10338	.7994989
23	1.990311	2.173383	2.359040	5.825762	1.563986	1.811264	13.87883	.8155587
24	2.000000	2.186563	2.372851	5.875710	1.541271	1.784958	13.67726	.8316410
25	2.008994	2.198891	2.385804	5.925658	1.521045	1.761533	13.49777	.8475897
26	2.017374	2.210438	2.397977	5.975606	1.503217	1.740887	13.33957	.8632642
27	2.025207	2.221269	2.409438	6.025554	1.487709	1.722927	13.20195	.8785418
28	2.032551	2.231436	2.420248	6.075502	1.474453	1.707576	13.08432	.8933153
29	2.039458	2.240986	2.430460	6.125451	1.463393	1.694766	12.98616	.9074945
30	2.045972	2.249963	2.440124	6.175399	1.454479	1.684443	12.90706	.9210050
31	2.052132	2.258406	2.449286	6.225347	1.447673	1.676561	12.84667	.9337898
32	2.057973	2.266349	2.457991	6.275295	1.442947	1.671088	12.80473	.9458077
33	2.063527	2.273829	2.466282	6.325243	1.440280	1.667999	12.78106	.9570342
34	2.068823	2.280879	2.474199	6.375190	1.439661	1.667282	12.77557	.9674616
35	2.073887	2.287530	2.481786	6.425138	1.441087	1.668934	12.78822	.9770982
36	2.078744	2.293816	2.489082	6.475087	1.444564	1.672961	12.81908	.9859686
37	2.083417	2.299770	2.496131	6.525034	1.450107	1.679380	12.86827	.9941140
38	2.087929	2.305426	2.502976	6.574984	1.457740	1.688220	12.93600	1.001593
39	2.092300	2.310817	2.509661	6.624931	1.467496	1.699518	13.02258	1.008481
40	2.096550	2.315981	2.516232	6.674880	1.479416	1.713323	13.12836	1.014867
41	2.100701	2.320953	2.522736	6.724827	1.493553	1.729694	13.25380	1.020858
42	2.104771	2.325773	2.529222	6.774775	1.509966	1.748704	13.39946	1.026579
43	2.108781	2.330482	2.535742	6.824723	1.528730	1.770434	13.56597	1.032171
44	2.112750	2.335119	2.542348	6.874671	1.549926	1.794981	13.75407	1.037790
45	2.116697	2.339732	2.549097	6.924619	1.573649	1.822456	13.96458	1.043609
46	2.120643	2.344366	2.556044	6.974567	1.600006	1.852979	14.19847	1.049817
47	2.124607	2.349068	2.563251	7.024515	1.629116	1.886692	14.45679	1.056623
48	2.128610	2.353889	2.570781	7.074465	1.661112	1.923747	14.74073	1.064247
49	2.210091	2.448636	2.679175	7.124413	1.696144	1.964317	15.05160	1.098901
50	2.291571	2.543382	2.787569	7.174359	1.734375	2.008594	15.39087	1.133556
51	2.373052	2.638128	2.895964	7.224308	1.775989	2.056787	15.76015	1.168210
52	2.454533	2.732875	3.004358	7.274256	1.821185	2.109128	16.16122	1.202865
53	2.536013	2.827621	3.112752	7.324204	1.870185	2.165876	16.59605	1.237519
54	2.617494	2.922367	3.221147	7.374152	1.923233	2.227310	17.06679	1.272174
55	2.698975	3.017114	3.329541	7.424100	1.980595	2.293743	17.57583	1.306828
56	2.780455	3.111860	3.437936	7.474048	2.042567	2.365513	18.12577	1.341483
57	2.861936	3.206606	3.546330	7.523996	2.109471	2.442995	18.71947	1.376138
58	2.943417	3.301353	3.654724	7.573944	2.181663	2.526601	19.36010	1.410792
59	3.024897	3.396099	3.763119	7.623892	2.259531	2.616780	20.05111	1.445447
60	3.106378	3.490845	3.871513	7.673841	2.343504	2.714031	20.79628	1.480101
61	3.187859	3.585592	3.979908	7.723789	2.434052	2.818895	21.59981	1.514756
62	3.269339	3.680338	4.088302	7.773736	2.531691	2.931971	22.46626	1.549410
63	3.350820	3.775084	4.196696	7.823685	2.636988	3.053916	23.40067	1.584065
64	3.432301	3.869830	4.305090	7.873633	2.750568	3.185454	24.40857	1.618719
65	3.513781	3.964577	4.413486	7.923581	2.873116	3.327379	25.49607	1.653374

Webb 1996 VOC MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HDGV	LDDV	LDDT	HDDV	MC
3	31.38494	33.82802	45.89565	74.19178	1.222405	1.605178	6.338942	20.01157
4	21.46511	21.13439	29.73949	56.25264	1.160874	1.524380	6.019867	17.47296
5	16.79263	16.58987	23.12232	46.97837	1.103401	1.448910	5.721829	15.59040
6	13.71741	13.58326	18.75707	40.68632	1.046447	1.374122	5.426487	14.09105
7	11.76126	11.66607	15.98375	36.44624	.9964249	1.308436	5.167093	13.01504
8	10.54204	10.44849	14.26064	33.74476	.9496203	1.246976	4.924381	12.17438
9	9.595449	9.508497	12.93604	31.45287	.9058021	1.189437	4.697156	11.50826
10	8.825496	8.751873	11.87466	29.43839	.8647578	1.135540	4.484316	10.97350
11	8.184538	8.129595	11.00720	27.65339	.8262923	1.085030	4.284848	10.53892
12	7.640544	7.608337	10.28600	26.06199	.7902249	1.037669	4.097816	10.18160
13	7.171195	7.164680	9.677239	24.63629	.7563899	.9932391	3.922360	9.884468
14	6.760463	6.781699	9.156364	23.35396	.7246339	.9515391	3.757684	9.634610
15	6.396550	6.446884	8.705137	22.19673	.6948154	.9123836	3.603057	9.422142
16	6.070582	6.150805	8.309780	21.14937	.6668039	.8756008	3.457800	9.239408
17	5.758244	5.870618	7.939150	20.14261	.6388868	.8389421	3.313033	9.071172
18	5.490756	5.633430	7.628272	19.28342	.6142316	.8065666	3.185179	8.932302
19	5.244735	5.417520	7.347687	18.50032	.5910419	.7761154	3.064926	8.808550
20	5.025800	5.257336	7.126634	17.79007	.5692227	.7474641	2.951780	8.697001
21	4.851595	5.092732	6.907788	17.14760	.5486864	.7204971	2.845286	8.595341
22	4.692091	4.941441	6.707232	16.55988	.5293514	.6951077	2.745021	8.501741
23	4.545355	4.801657	6.522357	16.02147	.5111422	.6711968	2.650596	8.414766
24	4.409788	4.671932	6.351060	15.52757	.4939892	.6486725	2.561646	8.333296
25	4.284059	4.551092	6.191648	15.07392	.4778273	.6274499	2.477837	8.256475
26	4.167057	4.438185	6.042750	14.65675	.4625967	.6074501	2.398856	8.183668
27	4.057840	4.332433	5.903263	14.27271	.4482414	.5885997	2.324415	8.114407
28	3.949442	4.227203	5.764368	13.89762	.4338902	.5697547	2.249995	8.044344
29	3.853900	4.134322	5.641643	13.57278	.4211808	.5530657	2.184089	7.981505
30	3.764052	4.046968	5.526074	13.27287	.4091999	.5373330	2.121960	7.921560
31	3.679395	3.964769	5.417176	12.99574	.3979056	.5225022	2.063392	7.864462
32	3.599493	3.887405	5.314541	12.73947	.3872601	.5085232	2.008188	7.810210
33	3.523961	3.814594	5.217825	12.50235	.3772274	.4953490	1.956163	7.758835
34	3.452458	3.746085	5.126727	12.28283	.3677746	.4829362	1.907144	7.710397
35	3.384686	3.681644	5.040982	12.07951	.3588708	.4712443	1.860972	7.664958
36	3.320368	3.621062	4.960346	11.89113	.3504874	.4602358	1.817499	7.622579
37	3.259262	3.564133	4.884593	11.71656	.3425978	.4498757	1.776586	7.583314
38	3.201146	3.510667	4.813508	11.55477	.3351774	.4401318	1.738106	7.547203
39	3.142442	3.457440	4.742854	11.39585	.3277816	.4304201	1.699754	7.512309
40	3.089860	3.410521	4.680719	11.25760	.3212581	.4218539	1.665926	7.482723
41	3.039687	3.366494	4.622594	11.12957	.3151385	.4138182	1.634192	7.456256
42	2.991760	3.325171	4.568253	11.01107	.3094047	.4062888	1.604459	7.432827
43	2.945920	3.286358	4.517457	10.90150	.3040396	.3992438	1.576637	7.412309
44	2.902020	3.249852	4.469953	10.80030	.2990277	.3926625	1.550648	7.394531
45	2.859912	3.215436	4.425461	10.70697	.2943544	.3865259	1.526414	7.379267
46	2.819452	3.182877	4.383687	10.62105	.2900064	.3808164	1.503867	7.366224
47	2.780497	3.151917	4.344290	10.54215	.2859714	.3755179	1.482943	7.355042
48	2.743127	3.122107	4.306427	10.46862	.2822380	.3706154	1.463583	7.345275
49	2.733857	3.112516	4.290277	10.38752	.2787958	.3660955	1.445732	7.345093
50	2.725601	3.103894	4.275575	10.31378	.2756354	.3619454	1.429344	7.345093
51	2.717346	3.095274	4.260880	10.24310	.2725765	.3579286	1.413481	7.345093
52	2.710025	3.087630	4.247854	10.18344	.2699706	.3545068	1.399968	7.345093
53	2.703108	3.080407	4.235551	10.13014	.2676225	.3514234	1.387792	7.345093
54	2.696564	3.073575	4.223917	10.08296	.2655257	.3486700	1.376919	7.345093
55	2.690729	3.067526	4.213436	10.04169	.2636747	.3462394	1.367320	7.345483
56	2.800738	3.196145	4.373143	10.00613	.2620646	.3441251	1.358971	7.469844
57	2.911047	3.325078	4.533390	9.976144	.2606910	.3423214	1.351848	7.594205
58	3.021637	3.454305	4.694137	9.951607	.2595504	.3408237	1.345933	7.718568
59	3.132489	3.583804	4.855353	9.932425	.2586398	.3396279	1.341211	7.842930
60	3.243584	3.713559	5.017005	9.918531	.2579567	.3387309	1.337668	7.967291
61	3.354909	3.843553	5.179068	9.909885	.2574994	.3381304	1.335297	8.091654
62	3.487385	3.998211	5.372014	9.906421	.2572480	.3378003	1.333993	8.239332
63	3.557222	4.079729	5.473767	9.907571	.2572425	.3377931	1.333965	8.317059
64	3.697119	4.242995	5.677668	9.916071	.2574940	.3381234	1.335269	8.472510
65	3.837292	4.406549	5.882063	9.932947	.2580965	.3389145	1.338393	8.627964

Webb 1996 CO MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
3	271.4685	289.0885	371.4376	671.4603	4.584389	5.132604	41.78237	181.6394
4	202.5515	196.6156	262.5049	609.5276	4.226811	4.732266	38.52339	144.9740
5	163.5433	158.3973	211.4747	558.3701	3.904145	4.371015	35.58259	118.4755
6	136.0165	131.1181	174.1419	509.9254	3.595340	4.025281	32.76813	97.85392
7	117.6218	112.8133	148.7440	469.2281	3.333228	3.731825	30.37922	83.34939
8	103.7850	99.05200	129.5292	432.7194	3.095792	3.465996	28.21522	72.20269
9	93.01392	88.37527	114.5943	399.9201	2.880448	3.224900	26.25256	63.49091
10	84.40108	79.87962	102.7244	370.4120	2.684911	3.005981	24.47043	56.57456
11	77.36270	72.97597	93.10960	343.8282	2.507156	2.806969	22.85036	51.00209
12	71.50638	67.26422	85.19102	319.8474	2.345387	2.625855	21.37598	46.44900
13	66.55865	62.46351	78.57219	298.1872	2.198008	2.460852	20.03276	42.67835
14	62.32335	58.37119	72.96523	278.5992	2.063600	2.310371	18.80776	39.51453
15	58.65602	54.83759	68.15683	260.8649	1.940901	2.173000	17.68948	36.82569
16	55.44817	51.75012	63.98623	244.7913	1.828786	2.047477	16.66765	34.51167
17	52.45072	48.86256	60.11688	229.3430	1.720140	1.925839	15.67745	32.7810
18	49.94885	46.44508	56.90461	216.1796	1.626804	1.821342	14.82678	30.61390
19	47.70527	44.26620	54.03374	204.2154	1.541304	1.725618	14.04753	29.03954
20	45.81081	42.86902	52.00280	193.3335	1.462928	1.637869	13.33321	27.61954
21	44.16289	41.43769	50.05185	183.4302	1.391039	1.557384	12.67801	26.32610
22	42.65803	40.11362	48.26633	174.4131	1.325065	1.483521	12.07672	25.13757
23	41.27726	38.88167	46.62174	166.2004	1.264494	1.415706	11.52467	24.03709
24	40.00500	37.73008	45.09866	158.7193	1.208865	1.353425	11.01767	23.01160
25	38.82844	36.64990	43.68169	151.9052	1.157766	1.296215	10.55194	22.05112
26	37.73692	35.63431	42.35859	145.7002	1.110823	1.243659	10.12411	21.14803
27	36.72153	34.67810	41.11967	140.0529	1.067704	1.195383	9.731112	20.29667
28	35.71775	33.72280	39.88702	134.6129	1.025743	1.148404	9.348679	19.44406
29	34.83703	32.87762	38.79923	129.9773	.9895929	1.107931	9.019202	18.68733
30	34.01288	32.08234	37.77672	125.7747	.9564363	1.070810	8.717014	17.97269
31	33.24066	31.33499	36.81554	121.9729	.9260557	1.036796	8.440125	17.29860
32	32.51632	30.63398	35.91253	118.5438	.8982557	1.005672	8.186752	16.66388
33	31.83630	29.97779	35.06495	115.4619	.8728596	.9772386	7.955289	16.06767
34	31.19741	29.36499	34.27047	112.7051	.8497092	.9513198	7.744295	15.50927
35	30.59682	28.79423	33.52699	110.2537	.8286629	.9277568	7.552479	14.98798
36	30.03194	28.26406	32.83257	108.0905	.8095936	.9064069	7.378679	14.50309
37	29.50043	27.77306	32.18533	106.2005	.7923877	.8871438	7.221865	14.05385
38	29.00013	27.31972	31.58343	104.5708	.7769448	.8698540	7.081117	13.63936
39	28.50050	26.87755	30.99150	103.1122	.7623680	.8535341	6.948263	13.23584
40	28.05834	26.49676	30.47716	101.9865	.7502897	.8400115	6.838182	12.88945
41	27.64161	26.14846	30.00222	101.0927	.7397329	.8281924	6.741967	12.57396
42	27.24859	25.83064	29.56451	100.4250	.7306386	.8180104	6.659079	12.28760
43	26.87762	25.54109	29.16162	99.97905	.7229558	.8094091	6.589058	12.02842
44	26.52705	25.27732	28.79101	99.75179	.7166424	.8023407	6.531518	11.79412
45	26.19521	25.03647	28.44977	99.74181	.7116638	.7967668	6.486143	11.58201
46	25.88035	24.81514	28.13465	99.94904	.7079929	.7926568	6.452686	11.38908
47	25.58065	24.60942	27.84199	100.3748	.7056096	.7899884	6.430964	11.21176
48	25.29416	24.41463	27.56765	101.0219	.7045010	.7887474	6.420861	11.04615
49	25.02855	24.241083	27.32229	101.8946	.7046613	.7889268	6.422322	11.04293
50	24.78855	24.083	27.06229	102.9987	.7060912	.7905276	6.435354	11.04293
51	24.56855	23.931083	26.81229	104.4335	.7090104	.7937959	6.461960	11.04293
52	24.36855	23.783083	26.56229	106.0398	.7130910	.7983645	6.499151	11.04293
53	24.18855	23.641083	26.31229	107.9053	.7184873	.8044060	6.548332	11.04293
54	24.02855	23.503083	26.06229	110.0428	.7252281	.8119529	6.609769	11.04293
55	23.88855	23.369083	25.81229	112.4670	.7333509	.8210471	6.683801	11.05120
56	30.06104	29.52502	33.62406	115.1949	.7429006	.8317388	6.770835	13.69577
57	34.81869	34.62328	39.66695	118.2459	.7539301	.8440873	6.871360	16.34035
58	39.57634	39.72156	45.70984	121.6422	.7665016	.8581621	6.985937	18.98494
59	44.33398	44.81982	51.75274	125.4084	.7806866	.8740433	7.115220	21.62953
60	49.09161	49.91807	57.79561	129.5729	.7965662	.8918219	7.259948	24.27411
61	53.84924	55.01634	63.83849	134.1672	.8142331	.9116014	7.420964	26.91869
62	59.49894	61.07054	71.01443	140.2307	.8376777	.9378496	7.634641	30.05913
63	62.47246	64.25693	74.79121	143.7082	.8511540	.9529375	7.757465	31.71199
64	68.41950	70.62976	82.34483	151.3094	.8806159	.9859227	8.025984	35.01772
65	74.36656	77.00261	89.89844	159.8551	.9136635	1.022922	8.327180	38.32346

Webb 1996 NOx MOBILE Juarez 24 Hour Emission Rates (grams/mile)

Speed	LDGV	LDGT1	LDGT2	HdGV	LDDV	LDDT	HDDV	MC
3	3.325018	3.557212	3.576964	5.104770	2.011144	2.335822	31.39879	.8277881
4	2.917336	3.091250	3.212263	5.150616	1.926850	2.237920	30.08276	.7918731
5	2.768645	2.935328	3.078551	5.203084	1.848684	2.147134	28.86240	.7620248
6	2.662219	2.824990	2.984463	5.258834	1.771827	2.057870	27.66248	.7364417
7	2.589889	2.751263	2.922191	5.311305	1.704880	1.980115	26.61727	.7176645
8	2.534567	2.696114	2.876240	5.363774	1.642767	1.907975	25.64754	.7035900
9	2.490832	2.653741	2.841590	5.416244	1.585141	1.841046	24.74787	.6938053
10	2.455397	2.620600	2.815160	5.468715	1.531687	1.778961	23.91331	.6879138
11	2.426147	2.594388	2.794936	5.521185	1.482114	1.721386	23.13936	.6855350
12	2.401652	2.573534	2.779531	5.573654	1.436161	1.668014	22.42192	.6863046
13	2.380908	2.556913	2.767947	5.626124	1.393588	1.618568	21.75726	.6898744
14	2.363188	2.543698	2.759443	5.678594	1.354177	1.572795	21.14196	.6959122
15	2.347944	2.533259	2.753445	5.731064	1.317730	1.530464	20.57293	.7041019
16	2.334762	2.525102	2.749504	5.783534	1.284065	1.491365	20.04735	.7141438
17	2.322651	2.518498	2.747165	5.839284	1.251162	1.453150	19.53365	.7265254
18	2.312764	2.513889	2.746390	5.891754	1.222735	1.42013	19.08982	.7395090
19	2.304132	2.510570	2.746748	5.944224	1.196632	1.389816	18.68230	.7535266
20	2.301220	2.519418	2.757668	5.996694	1.172732	1.362057	18.30917	.7683435
21	2.313201	2.547342	2.785687	6.049163	1.150924	1.336729	17.96869	.7837416
22	2.324329	2.573347	2.811957	6.101633	1.131109	1.313715	17.65933	.7995186
23	2.334722	2.597641	2.836653	6.154103	1.113197	1.292911	17.37968	.8154886
24	2.344478	2.620395	2.859918	6.206574	1.097108	1.274225	17.12850	.8314815
25	2.353680	2.641749	2.881873	6.259044	1.082771	1.257574	16.90466	.8473434
26	2.362395	2.661823	2.902620	6.311514	1.070123	1.242884	16.70720	.8629366
27	2.370682	2.680717	2.922247	6.363984	1.059109	1.230091	16.53524	.8781396
28	2.379075	2.699599	2.941961	6.419732	1.049144	1.218517	16.37965	.8937472
29	2.386634	2.716329	2.959517	6.472203	1.041357	1.209473	16.25808	.9078298
30	2.393904	2.732121	2.976173	6.524673	1.035080	1.202183	16.16009	.9212500
31	2.400920	2.747038	2.991993	6.577144	1.030287	1.196616	16.08526	.939517
32	2.407717	2.761144	3.007038	6.629613	1.026957	1.192749	16.03327	.9458945
33	2.414326	2.774496	3.021371	6.682082	1.025076	1.190565	16.00391	.9570547
34	2.420777	2.787153	3.035056	6.734553	1.024637	1.190054	15.99705	.9674245
35	2.427101	2.799173	3.048157	6.787023	1.025637	1.191215	16.01266	.9770116
36	2.433326	2.810614	3.060742	6.839493	1.028080	1.194053	16.05080	.9858418
37	2.439483	2.821536	3.072882	6.891963	1.031977	1.198579	16.11164	.9939544
38	2.445601	2.832001	3.084652	6.944433	1.037345	1.204813	16.19545	1.001406
39	2.452092	2.842691	3.096839	7.000182	1.044684	1.213338	16.31004	1.008682
40	2.458226	2.852418	3.108099	7.052651	1.053164	1.223186	16.44242	1.015020
41	2.464416	2.861894	3.119243	7.105123	1.063204	1.234847	16.59916	1.020971
42	2.470697	2.871192	3.130366	7.157592	1.074847	1.248370	16.78095	1.026656
43	2.477103	2.880389	3.141566	7.210063	1.088146	1.263815	16.98857	1.032216
44	2.483670	2.889567	3.152947	7.262532	1.103156	1.281249	17.22292	1.037804
45	2.490438	2.898811	3.164618	7.315002	1.119945	1.300749	17.48504	1.043590
46	2.497445	2.908210	3.176697	7.367473	1.138588	1.322401	17.77610	1.049762
47	2.504734	2.917860	3.189304	7.419942	1.159167	1.346303	18.09738	1.056520
48	2.512347	2.927859	3.202568	7.472412	1.181776	1.372562	18.45037	1.064085
49	2.620095	3.046892	3.338414	7.524882	1.206520	1.401300	18.83668	1.098018
50	2.729884	3.168145	3.476753	7.577353	1.233512	1.432650	19.25809	1.132479
51	2.846534	3.296978	3.623739	7.633101	1.264798	1.468986	19.74653	1.169093
52	2.956321	3.418231	3.762078	7.685571	1.296844	1.506206	20.24685	1.203554
53	3.066110	3.539485	3.900417	7.738042	1.331571	1.546539	20.78902	1.238015
54	3.175897	3.660739	4.038756	7.790512	1.369148	1.590183	21.37570	1.272476
55	3.285685	3.781992	4.177096	7.842983	1.409765	1.637357	22.00982	1.306936
56	3.395473	3.903245	4.315435	7.895451	1.453626	1.688299	22.69460	1.341397
57	3.505262	4.024499	4.453774	7.947921	1.500957	1.743271	23.43356	1.375858
58	3.615049	4.145753	4.592114	8.000391	1.552008	1.802564	24.23058	1.410318
59	3.724837	4.267007	4.730454	8.052861	1.607050	1.866492	25.08992	1.444779
60	3.834625	4.388260	4.868793	8.105332	1.666382	1.935403	26.01624	1.479240
61	3.944413	4.509514	5.007133	8.157801	1.730333	2.009677	27.01466	1.513700
62	4.074787	4.635503	5.171412	8.220110	1.812773	2.105426	28.30174	1.554623
63	4.143404	4.729285	5.257873	8.252903	1.859206	2.159356	29.02668	1.576160
64	4.280639	4.880853	5.430797	8.318490	1.958892	2.275135	30.58302	1.619236
65	4.417874	5.032420	5.603722	8.384077	2.068457	2.402388	32.29358	1.662312