

References Used for Interim Draft EPA Clean Screening Guidance

- 1.* “User Guide and Description For Interim Remote Sensing Program Credit Utility,” U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Mobile Sources, Report EPA 420-R-96-004, September 1996.**
- 2. “Evaluation of the California Pilot Inspection/Maintenance (I/M) Program,” Draft Final Report for California Bureau of Automotive Repair, Rob Klausmeier, Sandeep Kishan, Rick Baker, Andrew Burnette, and Joel McFarland, de la Torre Klausmeier Consulting, Inc., and Radian Corporation, March 31, 1995.**
- 3.* “The Greeley Remote Sensing Pilot Program Final Report,” Report for Colorado Department of Public Health and Environment, Remote Sensing Technologies, Inc., Rob Klausmeier and Peter McClintock, de la Torre Klausmeier Consulting, Inc., and Applied Analysis, November 4, 1997.**
- 4.* “The Colorado Enhanced I/M Program 0.5% Sample Annual Report,” Report for Colorado Department of Public Health and Environment, Remote Sensing Technologies, Inc., Peter M. McClintock, Applied Analysis, January 27, 1998.**
- 5. “Recommendations for Remote Sensing Use in a Smog Check Program,” Report for California Inspection and Maintenance Review Committee, Rob Klausmeier, de la Torre Klausmeier Consulting, Inc., and Sandeep Kishan, Radian International LLC, February 9, 1998.**
- 6. “Exemption of Vehicles from I/M Requirements in the Phoenix Area: the Arizona Clean Screen Program,” Report for Arizona Department of Environmental Quality, Radian International LLC, December 4, 1996.**
- 7. “Profiling Vehicle Emission with the High Emitter Profile Mode,” Report of California Bureau of Automotive Repair, Rob Klausmeier, Sandeep Kishan, Meredith Weatherby, Joel McFarland, Tim DeFries, Dave Amlin, and Bob Benjaminson, de la Torre Klausmeier Consulting, Inc., Radian International LLC, and California Bureau of Automotive Repair, October 30, 1997.**
- 8. “Profiling Vehicle Emissions Using the High Emitter Profile Model,” Briefing for EPA, Sandeep Kishan and Rob Klausmeier, Radian International LLC and de la Torre Klausmeier Consulting, Inc., January 29, 1998.**

9.* “Program User Guide for Interim Vehicle Clean Screening Program Credit Utility,” draft report EPA420-P-98-007, April 1998.

10.* “Description of the High and Low Emitter Profiles Models,” Memo to Joe Somers and Phil Lorang, EPA from Rob Klausmeier, de la Torre Klausmeier Consulting Inc., February 19, 1998.

11. “Determination of Running Emissions as a Function of Mileage for 1981-1993 Model Year Light-Duty Cars,” EPA Report No. M6.EXH.001 (in preparation; will be posted on the web page later this month).**

12. “Analysis of Emissions Deterioration Using Ohio and Wisconsin IM240 Data,” EPA Report No. M6.EXH.002 (complete; will be posted on the web page imminently).**

13. “The Determination of Hot Running Emissions from FTP Bag Emissions,” EPA Report No. M6.STE.002 (posted on web page 9/30/97 for 60-day stakeholder review; stakeholder review complete on 11/29/97).**

14. “Determination of Start Emissions as a Function of Mileage and Soak Time for 1981-1993 Model Year Light-Duty Vehicles,” EPA Report No. M6.STE.003 (posted on 10/10/97; stakeholder review complete on 12/08/97).**

15. “Additional Information Requested Regarding RSD Clean Screen Percent by Model Year,: Memo from Peter McClintock of Applied Analysis to Phil Lorang and Jim Lindner of EPA, February 23, 1998.

16. “Study Confirms Clean Screening Effective in Emissions Testing,” Colorado Department of Public Health and Environment Press Release, March 5, 1998.

*** References available on EPA web page titled “Clean Vehicle Screening & Remote Sensing - Vehicle Profiling & Remote Sensing Device (RSD) Issues” at following address:**

<http://www.epa.gov/omswww/rsd.htm>

**** References available on EPA web page titled “MOBILE6 Vehicle Emission Modeling Software” at following address:**

<http://www.epa.gov/OMSWWW/m6.htm>

**Emission Impacts on the Current Fleet of
Targeting with the Low Emitter Profile**

Vehicle Fraction Excused	% Excess Emissions in Excused Fraction		
	Exhaust HC	CO	NO_x
0%	0.00%	0.00%	0.00%
10%	0.23%	0.30%	0.26%
20%	0.65%	0.80%	0.73%
30%	1.45%	1.75%	1.57%
40%	2.93%	3.58%	3.41%
50%	5.46%	5.71%	6.79%
60%	10.98%	10.28%	12.32%
70%	24.90%	23.21%	25.90%
80%	37.72%	35.10%	38.98%
90%	57.69%	53.08%	62.30%
100%	100%	100%	100%

Characteristics and Number of Vehicles Used in Low Emitter Profile

Percent of overall fleet exempted as probable low emitters	Number of vehicles exempted as probable low emitters	1982-85 Model Year Vehicles			1986-89 Model Year Vehicles			1990+ Model Vehicles		
		Number of vehicles exempted as probable low emitters	Number of exempted vehicles which have very high HC/CO	Number of exempted vehicles which have high NOx	Number of vehicles exempted as probable low emitters	Number of exempted vehicles which have very high HC/CO	Number of exempted vehicles which have high NOx	Number of vehicles exempted as probable low emitters	Number of exempted vehicles which have very high HC/CO	Number of exempted vehicles which have high NOx
10%	39,542	0	0	0	425	41	44	39,117	497	122
20%	79,082	0	0	0	987	93	51	78,097	1,206	493
30%	118,826	0	0	0	4,340	289	174	114,486	2,403	1,179
40%	158,168	0	0	0	20,251	1,444	1,049	137,917	3,371	1,849
50%	197,708	27	4	2	35,561	2,922	2,490	162,120	4,929	2,981
60%	237,252	605	183	82	57,957	6,306	5,371	178,690	7,322	3,882
70%	276,794	12,089	7,334	2,797	83,128	12,263	9,858	181,577	7,737	4,076
80%	316,336	17,587	10,439	4,338	110,665	18,936	14,854	188,084	8,758	4,901
90%	355,878	37,731	23,776	11,111	128,144	23,854	19,450	190,003	9,160	5,086
100%	395,418	73,052	51,805	25,060	132,359	25,645	20,422	190,007	9,160	5,086

Exemption Rates by Model Year Group

Percent of total fleet excused from I/M test	Percent Within Model Year Groupings Excused From I/M Test			
	Pre-1982	1982-85	1986-89	1990+
0%	0%	0%	0%	0%
10%	0%	0%	0.32%	20.59%
20%	0%	0%	0.75%	41.10%
30%	0%	0%	3.28%	60.25%
40%	0%	0%	15.30%	72.59%
50%	0.04%	0.04%	26.87%	85.32%
60%	0.83%	0.83%	43.79%	94.04%
70%	16.55%	16.55%	62.80%	95.56%
80%	24.07%	24.07%	83.61%	98.99%
90%	51.65%	51.65%	96.82%	100%
100%	100%	100%	100%	100%

