APPENDIX F

TNRCC MEMO, REGIONAL MODELING RESULTS FOR TEXAS CLEAN GAS, 6/22/99

REGIONAL STRATEGY

APRIL 2000 REVISION

Texas Natural Resource Conservation Commission

INTEROFFICE MEMORANDUM

To: Jim Thomas, Director
Air Quality Planning and Assessment
Division

Date: June 2, 1999

Thru: Candy Garrett, Manager
SIP Planning Section
Air Quality Planning and Assessment Division

From: Cyril Durrenberger, P.E.
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Subject: Results for Regional Modeling with 1993, 1995, and 1996 Episodes

The University of Texas has performed regional scale photochemical modeling with the 1993, 1995, and 1996 episodes. The 1993 episode was used for the Houston/Galveston nonattainment area State Implementation Plan (SIP) and the 1995 and 1996 episodes were used for modeling in the Dallas/Fort Worth nonattainment area SIP. All results are based on a future base 2007 emissions inventory. For the 1993 episode, the emissions were projected to 2007 directly from the base 1993 emissions inventory. For the 1995 and 1996 episodes, the future base 2007 emissions inventory was projected to 2007 using emissions from the projections to 2007 used with the 1993 episode and day specific temperatures and day of the week information. The Texas Clean Air Strategy mobile source strategy included applying the following to the base 2007 emissions: Stage I vapor recovery, cleaner burning gasoline, and national low-emitting vehicle (NLEV). The results indicated in Rule Log No. 98058-114-AI could be revised as follows:

> In particular, photochemical grid modeling has been conducted with episodes from 1993, 1995, and 1996 to evaluate the implementation of cleaner burning gasoline, Stage I vapor recovery, and NLEV. These controls will reduce one-hour ozone averages from 1.0 to 3.6 parts per billion (ppb) over large areas of east and southeast Texas, including Austin, San Antonio, and Tyler/Longview areas. Reductions in eight-hour ozone averages would be slightly lower but of the same magnitude over the same areas.

The results were supplied in the form of isopleth maps and are summarized in the attached table. For the 1993 episode, the maximum differences were located in the Central Texas area. For the 1995 and 1996 episodes, the maximum differences were located in northeast Texas except on July 2, 1996 when the maximum difference one-hour average occurred in the San Antonio area. For each averaging time and each of the eleven days modeled, the reductions occurred at locations where ozone was predicted to exceed the standard or the proposed standard.

JT/CD/aeb

Attachment

Results for Regional Modeling with 1993, 1995, and 1996 Episodes

Day	Maximum Difference ppb	Difference Aus Area ppb	Difference SA Area ppb	Difference CC Area ppb	Difference TL Area ppb
one-hour					
9/07/93	2.8	2.0 to 3.0	2.0 to 3.0	< 1.0	1.0 to 2.0
9/08/93	3.6	3.0 to 4.0	3.0 to 4.0	1.0 to 2.0	2.0 to 3.0
9/09/93	3.6	3.0 to 4.0	2.0 to 3.0	< 1.0	1.0 to 2.0
9/10/93	3.2	2.0 to 3.0	3.0 to 4.0	< 1.0	1.0 to 2.0
9/11/93	1.8	1.0 to 2.0	< 1.0	< 1.0	< 1.0
6/20/95	1.8	< 1.0	1.0 to 2.0	< 1.0	1.0 to 2.0
6/21/95	1.8	1.0 to 2.0	1.0 to 2.0	< 1.0	1.0 to 2.0
6/22/95	2.8	1.0 to 2.0	2.0 to 3.0	< 1.0	2.0 to 3.0
7/02/96	2.2	1.0 to 2.0	2.0 to 3.0	1.0 to 2.0	1.0 to 2.0
7/03/96	2.7	2.0 to 3.0	2.0 to 3.0	< 1.0	2.0 to 3.0
7/04/96	1.5	1.0 to 2.0	1.0 to 2.0	< 1.0	1.0 to 2.0
eight-hour					
9/07/93	2.3	1.0 to 2.0	1.0 to 2.0	< 1.0	1.0 to 2.0
9/08/93	2.9	2.0 to 3.0	2.0 to 3.0	< 1.0	1.0 to 2.0
9/09/93	3.0	2.0 to 3.0	2.0 to 3.0	< 1.0	1.0 to 2.0
9/10/93	2.6	2.0 to 3.0	2.0 to 3.0	< 1.0	1.0 to 2.0
9/11/93	1.6	1.0 to 2.0	1.0 to 2.0	< 1.0	< 1.0
6/20/95	1.6	< 1.0	< 1.0	< 1.0	1.0 to 2.0
6/21/95	1.7	1.0 to 2.0	< 1.0	< 1.0	1.0 to 2.0
6/22/95	2.6	1.0 to 2.0	1.0 to 2.0	< 1.0	2.0 to 3.0
7/02/96	1.8	1.0 to 2.0	1.0 to 2.0	< 1.0	1.0 to 2.0
7/03/96	2.4	1.0 to 2.0	1.0 to 2.0	< 1.0	2.0 to 3.0
7/04/96	1.5	1.0 to 2.0	1.0 to 2.0	< 1.0	1.0 to 2.0

Aus area	Travis County
SA area	Bexar County
CC area	Nueces County
TL area	Gregg and Smith Counties