

Appendix A- Applicable SIPs

- SIP Excerpts
- El Paso PM-10
- Federal Register- CO Maintenance
 - Federal Register- CO Limited Maintenance
 - New Mexico PM-10 SIP
- 2015 Ozone NAAQS Designation Recommendation Report

Appendix A – SIP Excerpts

- Texas SIP Revisions

<http://www.tceq.texas.gov/airquality/sip/siplans.html>

- Revision to the State Implementation Plan for Inhalable Particulate Matter (PM10):1991 PM10 SIP for Moderate Area- El Paso.

https://www.tceq.texas.gov/assets/public/implementation/air/sip/sipdocs/1991-11-ELP/nov91_elp.pdf

- Revision to the State Implementation Plan for the Control of Carbon Monoxide Air Pollution: El Paso Revised Maintenance Plan for Carbon Monoxide.

https://www.tceq.texas.gov/assets/public/implementation/air/sip/elp/El_Paso_MP_SIP_adoption_package.pdf

- Revisions to the State of Texas Air Quality Implementation Plan for The Control of Carbon Monoxide Air Pollution: El Paso Carbon Monoxide (CO) Maintenance Area: El Paso Limited Maintenance Plan (LMP) for The Eight-hour Primary Carbon Monoxide National Ambient Air Quality Standard (NAAQS)

https://www.tceq.texas.gov/assets/public/implementation/air/sip/elp/CO_LMP/15015SIP_ado_all.pdf

- Revisions to the State Implementation Plan for the Vehicle Inspection and Maintenance Program

<http://www.tceq.texas.gov/airquality/mobilesource/im.html>

- Revisions to the State Implementation Plan for Transportation Conformity

<http://www.tceq.texas.gov/airquality/mobilesource/apr2003transconf.html>



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

RECEIVED
AIR QUALITY PLANNING
1997 JAN 31 AM 11:14

JAN 28 1997

Mr. Peter A. Lombard, Director
Office of Planning and
Program Development
Federal Highway Administration
819 Taylor Street, Room 8A00
Fort Worth, TX 76102

RE: Transportation Conformity: Motor Vehicle Emissions Budgets (MVEB)

Dear Mr. Lombard:

We have updated the MVEB table for all nonattainment and maintenance areas in Region 6. The enclosed table contains new MVEB which should be used for transportation conformity determinations. The MVEB values listed in the table have been compiled from the most recent State Implementation Plans and have been confirmed by each state air agency.

We hope you will find this table useful in making conformity determinations. If you have any question concerning the enclosed table, please feel free to contact me or Mr. J. Behnam at (214) 665-7247.

Sincerely yours,

Thomas H. Diggs
Chief
Air Planning Section (6PD-L)

Enclosure

cc: Ms. Teri Lanoue
Mr. Don Neisler
Mr. Walter R. Brooks

Mr. Coan Bueche
Ms. Alana Eager
Mr. Dennis R. Foltz
Ms. Cecilia Williams
Mr. Richard Montoya
Mr. Al Giles
Mr. Eddie Shafie
Mr. Alan C. Clark
Mr. Michael Morris
Mr. Ricardo Dominguez
Mr. Bob Dickinson
Mr. George Hadley
Ms. Peggy Crist
Ms. Amy Stephenson

REGION 6 MOTOR VEHICLE EMISSION LIMITS*
FOR CONFORMITY DETERMINATION

(CO, PM10, NOx, Ozone; Tons/Day)

* Please read the general notes and foot notes on the last page before using this Table.

EPA Contact: J. Behnam
 Phone: (214) 665-7247
 Fax: (214) 665-7263
 Internet Address: behnam.jahanbakhsh@epamail.epa.gov

Nonattainment Areas with Full Conformity Requirements				
Year	CO	PM10	NOx	VOC
Anthony				
1990 MVEI	--	0.102	--	--
Baton Rouge				
1990 MVEI	--	--	71.64	55.41
1996 MVEB	--	--	63.00	36.90
1999 MVEB	--	--	58.03	33.93
Beaumont				
1990 MVEI	--	--	42.33	29.35
1996 MVEB	--	--	See Note 8	21.66
1997 MVEB	--	--	See Note 9	See Note 9
Dallas				
1990 MVEI	--	--	293.03	306.60
1996 MVEB	--	--	See Note 8	165.49
1996 MVEB	--	--	See Note 10	See Note 10
El Paso				
1990 MVEI	327.10	12.8	36.90	38.27
1994 MVEB	--	12.10	--	--
1995 MVEB	See Note 10	--	--	--
1996 MVEB	--	--	See Note 8	21.63
1999 MVEB	--	--	See Note 10	See Note 10

MVEI = Motor Vehicle Emission Inventory
 MVEB = Motor Vehicle Emission Budget
 MVEP = Motor Vehicle Emission Projection

**REGION 6 MOTOR VEHICLE EMISSION LIMITS
FOR CONFORMITY DETERMINATION**

(CO, PM10, NOx, Ozone; Tons/Day)
(continued)

Nonattainment Areas with Full Conformity Requirements				
Year	CO	PM10	NOX	VOC
Houston				
1990 MVEI	--	--	337.03	251.72
1996 MVEB	--	--	See Note 8	152.12
1999 MVEB	--	--	See Note 8	126.96
2005 MVEB	--	--	See Note 9	See Note 9
2007 MVEB	--	--	See Note 9	See Note 9
Sunland Park				
New Area	--	--	See Note 9	See Note 9
SIP due 97	--	--	See Note 9	See Note 9

**REGION 6 MOTOR VEHICLE EMISSION LIMITS
FOR CONFORMITY DETERMINATION**

(CO, PM10, NOx, Ozone; Tons/Day)
(continued)

Full Maintenance Areas with Full Conformity Requirements				
Year	CO	PM10	NOx	VOC
Albuquerque				
1996 MVEB	235.50	--	--	--
1999 MVEB	207.95	--	--	--
2002 MVEB	197.13	--	--	--
2005 MVEB	199.12	--	--	--
2006 MVEB	202.95	--	--	--
Lake Charles				
1990 MVEI	--	--	19.90	12.20
1995 MVEB	--	--	17.72	8.77
2000 MVEB	--	--	16.31	7.96
2005 MVEB	--	--	15.66	7.78
2010 MVEB	--	--	16.53	8.21
New Orleans				
1990 MVEI	--	--	67.78	71.93
1995 MVEB	--	--	61.79	50.73
2000 MVEB	--	--	54.26	43.21
2005 MVEB	--	--	48.99	38.66
Pointe Coupee				
1993 MVEI	--	--	2.56	1.63
1999 MVEB	--	--	2.19	1.21
2006 MVEB	--	--	2.12	1.18
St. James Parish				
1990 MVEI	--	--	3.42	2.09
1995 MVEB	--	--	3.06	1.57
2000 MVEB	--	--	2.81	1.41
2005 MVEB	--	--	2.71	1.35

**REGION 6 MOTOR VEHICLE EMISSION LIMITS
FOR CONFORMITY DETERMINATION**

(CO, PM10, NOx, Ozone; Tons/Day)
(continued)

Limited Maintenance Areas with Limited Conformity Requirements				
Year	CO	PM10	NOx	VOC
Beauregard Parish				
Budget	None	None	None	None
Grant Parish				
Budget	None	None	None	None
Lafayette				
Budget	None	None	None	None
Lafourche Parish				
Budget	None	None	None	None
St. Mary Parish				
Budget	None	None	None	None
Victoria				
Budget	None	None	None	None

GENERAL NOTES AND FOOT NOTESGeneral Notes

1. The emission values listed in the Table are compiled from the control strategy and maintenance SIPs.
2. If less-than-1990 test is necessary, the 1990 MVEI must be used, not the 1993 MVEI.
2. The 1996 MVEB test must be performed after 1996 even if new budgets have been established for future years; this should not cause any problem for most areas.
4. If a maintenance plan is submitted, the MVEB can not be used until the EPA approves the maintenance plan.
5. The MVEP provided in the SIPs must be used as MVEB where the SIPs do not explicitly establish MVEB.
6. The NOx waiver granted by the EPA to certain areas does not exempt these areas from the conformity NOx MVEB test.
7. The emissions data provided in this Table are subject to change upon a SIP revision, control strategy modifications, refinement of emission inventory or projections, inaccuracy/corrections, or any other unforeseeable events beyond EPA's control. It is recommended that the users of this Table be in touch with the States air quality agencies periodically.

Foot Notes

8. This area is required to perform either a NOx Build/no Build test or MVEB test under the current Federal conformity rule. However, the approved conformity SIP for this area reflects the Federal rule prior to November 14, 1995, and it does not contain explicit language for the NOx budget test. Also, this area has secured a NOx waiver under section 182(b) of the CAA, that waives the NOx Build/no Build test requirement.
9. The State has not submitted a control strategy SIP for attainment demonstration of the NAAQS.
10. The State has submitted an attainment demonstration SIP, however, the MVEB can not be established from the current SIPs. The EPA and TNRC are working to establish the MVEB.

comments, this action will be effective October 3, 2008.

IV. Statutory and Executive Order Reviews

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
 - Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
 - Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
 - Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
 - Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
 - Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
 - Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
 - Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
 - Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).
- In addition, this rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country

located in the state, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law.

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by October 3, 2008. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Dated: July 21, 2008.

Walter W. Kovalick, Jr.,

Acting Regional Administrator, Region 5.

■ For the reasons stated in the preamble, part 52, chapter I, of title 40 of the Code of Federal Regulations is amended as follows:

PART 52—[AMENDED]

■ 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart P—Indiana

■ 2. Section 52.770 is amended by adding paragraph (c)(188) to read as follows:

§ 52.770 Identification of plan.

* * * * *

(c) * * *

(188) The Indiana Department of Environmental Management submitted a revision to Indiana's State Implementation plan on May 22, 2008, to amend 326 IAC 1-1-3, "References to the Code of Federal Regulations". The revision to 326 IAC 1-1-3 updates the references to CFR from the 2006 edition to the 2007 edition.

(i) *Incorporation by reference.* Title 326 of the Indiana Administrative Code (IAC), section 1-1-3, "References to the Code of Federal Regulations" is incorporated by reference. The rule was filed with the Publisher of the Indiana Register on April 1, 2008, and became effective on May 1, 2008. Published in the Indiana Register, on April 30, 2008 (DIN: 20080430-IR-32607037FRA).

[FR Doc. E8-17703 Filed 8-1-08; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 81

[EPA-R06-OAR-2006-0386; FRL-8699-9]

Approval and Promulgation of Implementation Plans; Texas; El Paso County Carbon Monoxide Redesignation to Attainment, and Approval of Maintenance Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: On February 13, 2008, the Texas Commission on Environmental Quality (TCEQ) submitted a State Implementation Plan (SIP) revision to request redesignation of the El Paso carbon monoxide (CO) nonattainment area to attainment for the CO National Ambient Air Quality Standard (NAAQS). This submittal also included a CO maintenance plan for the El Paso area and associated Motor Vehicle Emission Budgets (MVEBs). The maintenance plan was developed to ensure continued attainment of the CO NAAQS for a period of at least 10 years from the effective date of EPA approval of redesignation to attainment. In this action, EPA is approving the El Paso CO redesignation request and the maintenance plan with its associated MVEBs as satisfying the requirements of the Federal Clean Air Act (CAA) as amended in 1990.

DATES: This rule is effective October 3, 2008 without further notice, unless EPA receives relevant adverse comment by

September 3, 2008. If adverse comment is received, EPA will publish a timely withdrawal of this direct final rule in the **Federal Register** informing the public that the rule will not take effect.

ADDRESSES: Submit your comments, identified by Docket No. EPA-R06-OAR-2006-0386, by one of the following methods:

- *www.regulations.gov*: Follow the on-line instructions for submitting comments.

- *E-mail*: Mr. Guy Donaldson at donaldson.guy@epa.gov. Please also send a copy by e-mail to the person listed in the **FOR FURTHER INFORMATION CONTACT** section below.

- *Fax*: Mr. Guy Donaldson, Chief, Air Planning Section (6PD-L), at fax number 214-665-7263.

- *Mail*: Mr. Guy Donaldson, Chief, Air Planning Section (6PD-L), Environmental Protection Agency, 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733.

- *Hand Delivery*: Mr. Guy Donaldson, Chief, Air Planning Section (6PD-L), Environmental Protection Agency, 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-R06-OAR-2006-0386. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at

www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *www.regulations.gov* or e-mail. The *www.regulations.gov* Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *www.regulations.gov* your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties

and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the *www.regulations.gov* index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *www.regulations.gov* or in hard copy at the Air Planning Section (6PD-L), Environmental Protection Agency, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202-2733. The file will be made available by appointment for public inspection in the Region 6 FOIA Review Room between the hours of 8:30 a.m. and 4:30 p.m. weekdays except for legal holidays. Contact the person listed in the **FOR FURTHER INFORMATION CONTACT** paragraph below or Mr. Bill Deese at 214-665-7253 to make an appointment. If possible, please make the appointment at least two working days in advance of your visit. There will be a 15 cent per page fee for making photocopies of documents. On the day of the visit, please check in at the EPA Region 6 reception area at 1445 Ross Avenue, Suite 700, Dallas, Texas.

The State submittal is also available for public inspection at the State Air Agency listed below during official business hours by appointment:

Texas Commission on Environmental Quality, Office of Air Quality, 12124 Park 35 Circle, Austin, Texas 78753.

FOR FURTHER INFORMATION CONTACT: Jeffrey Riley, Air Planning Section, (6PD-L), Environmental Protection Agency, Region 6, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202-2733, telephone (214) 665-8542; fax number 214-665-7263; e-mail address riley.jeffrey@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document, whenever "we" "us" or "our" is used, we mean the EPA.

Table of Contents

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- II. EPA's Evaluation of the El Paso Redesignation Request and Maintenance Plan
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- IV. Consideration of Section 110(l) of the CAA
- V. Final Action
- VI. Statutory and Executive Order Reviews

I. Background

Under the 1990 Federal Clean Air Act (CAA) Amendments, El Paso was designated and classified as a moderate nonattainment area for CO because it did not meet the 8-hour CO NAAQS for this criteria pollutant (56 FR 56694). El Paso's classification as a moderate nonattainment area under sections 107(d)(4)(A) and 186(a) of the CAA imposed a schedule for attainment of the CO NAAQS by December 31, 1995.

The El Paso nonattainment area has unique considerations for CO attainment planning due to airshed contributions from Ciudad Juarez, Mexico. Section 179B of the 1990 CAA Amendments contains provisions for CO nonattainment areas affected by emissions emanating from outside the United States. Under CAA Section 179B, the EPA shall approve a SIP for the El Paso nonattainment area if the TCEQ establishes to the EPA's satisfaction that implementation of the plan would achieve timely attainment of the NAAQS but for emissions emanating from Ciudad Juarez. This provision prevents El Paso County from being reclassified to a higher level of nonattainment should monitors continue to record CO concentrations in excess of the NAAQS.

To meet the CAA attainment schedule of December 31, 1995, Texas submitted an initial revision to the SIP for the El Paso CO moderate nonattainment area in a letter dated September 27, 1995. This submittal, as well as a February 1998 supplemental submittal, included air quality modeling demonstrating that El Paso would attain the CO NAAQS by December 31, 1995, but for emissions emanating outside of the United States from Mexico. The EPA approved a revision to the Texas SIP submitted to show attainment of the 8-hour CO NAAQS in the El Paso CO nonattainment area under Section 179B provisions, as well as approving the El Paso area's CO emissions budget and a CO contingency measure requirement. The State submitted the revisions to satisfy Section 179B and Part D requirements of the CAA. This approval was published July 2, 2003 (68 FR 39457), and became effective September 2, 2003. TCEQ also submitted all the requirements for the moderate area classification and EPA approved them. See further discussion in Section II.B.2.

On January 20, 2006, the State of Texas submitted a revision to the SIP which consisted of a request for redesignation of the El Paso carbon monoxide (CO) nonattainment area to attainment for the CO NAAQS, as well as an 8-hour CO maintenance plan to

ensure that El Paso County remains in attainment of the 8-hour CO NAAQS. EPA was unable to take action on this request for redesignation because the 8-hour CO maintenance plan did not provide for a maintenance period of at least 10 years after redesignation, as required by CAA Section 175A(a). On February 13, 2008, the State submitted a revision to the SIP containing an 8-hour CO maintenance plan to provide for El Paso County's continued attainment of the 8-hour CO NAAQS until 2020.

In this action, we are approving a change in the legal designation of the El Paso area from nonattainment for CO to attainment, in addition to approving the maintenance plan that is designed to keep the area in attainment for CO until 2020. Under the CAA, we can change designations if acceptable data are available and if certain other requirements are met. Section 107(d)(3)(E) of the CAA provides that the Administrator may not promulgate a redesignation of a nonattainment area to attainment unless:

(i) The Administrator determines that the area has attained the national ambient air quality standard;

(ii) The Administrator has fully approved the applicable implementation plan for the area under CAA section 110(k);

(iii) The Administrator determines that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan and applicable Federal air pollutant control regulations and other permanent and enforceable reductions;

(iv) The Administrator has fully approved a maintenance plan for the area as meeting the requirements of CAA section 175A; and,

(v) The State containing such area has met all requirements applicable to the area under section 110 and Part D of the CAA.

Before we can approve the redesignation request, we must decide that all applicable SIP elements have been fully approved. Approval of the applicable SIP elements may occur simultaneously with final approval of the redesignation request. The State of Texas has incorporated a CO maintenance plan into this submittal to satisfy the requirement of a fully approved maintenance plan for the area.

II. EPA's Evaluation of the El Paso Redesignation Request and Maintenance Plan

We have reviewed the El Paso CO redesignation request and maintenance

plan and believe that approval of the request is warranted, consistent with the requirements of CAA section 107(d)(3)(E). The following are descriptions of how the section 107(d)(3)(E) requirements are being addressed.

(a) Redesignation Criterion: The Area Must Have Attained the Carbon Monoxide (CO) NAAQS

Section 107(d)(3)(E)(i) of the CAA states that for an area to be redesignated to attainment, the Administrator must determine that the area has attained the applicable NAAQS. The area is designated attainment for the 1-hour CO NAAQS and designated nonattainment for the 8-hour CO NAAQS. As described in 40 CFR 50.8, the 8-hour CO NAAQS for carbon monoxide is 9 parts per million (ppm), (10 milligrams per cubic meter) for an 8-hour average concentration not to be exceeded more than once per year. 40 CFR 50.8 continues by stating that the levels of CO in the ambient air shall be measured by a reference method based on 40 CFR Part 50, Appendix C and designated in accordance with 40 CFR part 53 or an equivalent method designated in accordance with 40 CFR part 53. Attainment of the 8-hour CO standard is not a momentary phenomenon based on short-term data. Instead, we consider an area to be in attainment if each of the 8-hour CO ambient air quality monitors in the area doesn't have more than one exceedance of the 8-hour CO standard over a one-year period. If any monitor in the area's CO monitoring network records more than one exceedance of the 8-hour CO standard during a one-year calendar period, then the area is in violation of the 8-hour CO NAAQS. In addition, our interpretation of the CAA and EPA national policy¹ has been that an area seeking redesignation to attainment must show attainment of the CO NAAQS for at least a continuous two-year calendar period. In addition, the area must also continue to show attainment through the date that we promulgate the redesignation in the **Federal Register**.

The State of Texas' CO redesignation request for the El Paso area is based on an analysis of quality assured ambient air quality monitoring data that are relevant to the redesignation request. As presented in Chapter 3, Table 3-1 of the State's maintenance plan, ambient air quality monitoring data for consecutive calendar years 1999 through 2005 show

¹ Refer to EPA's September 4, 1992, John Calcagni policy memorandum entitled "Procedures for Processing requests to Redesignate areas to Attainment".

a measured exceedance rate of the CO NAAQS of 1.0 or less per year, per monitor, in the El Paso nonattainment area. We have evaluated the ambient air quality data and have determined that the El Paso area has not violated the 8-hour CO standard and continues to demonstrate attainment. The El Paso nonattainment area has quality-assured data showing no violations of the 8-hour CO NAAQS for the most recent consecutive two-calendar-year period (2006 and 2007). Therefore, we believe the El Paso area has met the first component for redesignation: Demonstration of attainment of the CO NAAQS. We note too that the State of Texas has also committed, in the maintenance plan, to continue the necessary operation of the CO monitoring network in compliance with 40 CFR Part 58.

(b) Redesignation Criterion: The Area Must Have Met All Applicable Requirements Under Section 110 and Part D of the CAA

To be redesignated to attainment, section 107(d)(3)(E)(v) requires that an area must meet all applicable requirements under section 110 and Part D of the CAA. We interpret section 107(d)(3)(E)(v) to mean that for a redesignation to be approved by us, the State must meet all requirements that applied to the subject area prior to or at the time of the submission of a complete redesignation request. In our evaluation of a redesignation request, we don't need to consider other requirements of the CAA that became due after the date of the submission of a complete redesignation request.

1. CAA Section 110 Requirements

Section 110(a)(2) of Title I of the CAA delineates the general requirements for a SIP, which include enforceable emissions limitations and other control measures, means, or techniques, provisions for the establishment and operation of appropriate devices necessary to collect data on ambient air quality, and programs to enforce the limitations. On July 2, 2003, we approved the El Paso CO element revisions to Texas's SIP as meeting the requirements of section 110(a)(2) of the CAA (see 68 FR 39457).

2. Part D Requirements

Before the El Paso "moderate" CO nonattainment area may be redesignated to attainment, the State must have fulfilled the applicable requirements of Part D. Under Part D, an area's classification indicates the requirements to which it will be subject. Subpart 1 of Part D sets forth the basic nonattainment

requirements applicable to all nonattainment areas. Subpart 3 of Part D contains specific provisions for "moderate" CO nonattainment areas. The relevant subpart 1 requirements are contained in sections 172(c) and 176. Our General Preamble (*see* 57 FR 13529 to 13532, April 16, 1992) provides EPA's interpretations of the CAA requirements for "moderate" CO areas such as El Paso with CO design values that are less than or equal to 12.7 ppm. The General Preamble (*see* 57 FR 13530, *et seq.*) provides that the applicable requirements of CAA section 172 are: 172(c)(3) (*emissions inventory*), 172(c)(5) (*new source review permitting program*), 172(c)(7) (*the section 110(a)(2) air quality monitoring requirements*), and 172(c)(9) (*contingency measures*). Regarding the requirements of sections 172(c)(3) (*inventory*) and 172(c)(9) (*contingency measures*), please refer to our discussion below of sections 187(a)(1) and 187(a)(3), which are the more specific provisions of Subpart 3 of Part D of the CAA.

It is also worth noting that we interpreted the requirements of sections 172(c)(2) (*reasonable further progress—RFP*) and 172(c)(6) (*other measures*) as being irrelevant to a redesignation request because they only have meaning for an area that is not attaining the standard. *See* EPA's September 4, 1992, John Calcagni memorandum entitled "Procedures for Processing Requests to Redesignate Areas to Attainment", and the General Preamble, 57 FR at 13564, dated April 16, 1992. Finally, the State has not sought to exercise the options that would trigger sections 172(c)(4) (*identification of certain emissions increases*) and 172(c)(8) (*equivalent techniques*). Thus, these provisions are also not relevant to this redesignation request.

For the section 172(c)(5) New Source Review (NSR) requirements, the CAA requires all nonattainment areas to meet several requirements regarding NSR, including provisions to ensure that increased emissions will not result from any new or modified stationary major sources and a general offset rule. The State of Texas has an approved NSR program (*see* 60 FR 49781, September 27, 1995) that meets the requirements of CAA section 172(c)(5). For the CAA section 172(c)(7) provisions (*compliance with the CAA section 110(a)(2) Air Quality Monitoring Requirements*), our interpretations are presented in the General Preamble (57 FR 13535). CO nonattainment areas are to meet the "applicable" air quality monitoring requirements of section 110(a)(2) of the CAA. Information concerning CO

monitoring in Texas is included in the Annual Monitoring Network Review (MNR) prepared by the State and submitted to EPA. Our personnel have concurred with Texas' annual network reviews and have agreed that the El Paso network remains adequate.

In Chapter 5, Section 5.5 of the maintenance plan, the State commits to the continued operation of the existing CO monitoring network according to applicable Federal regulations and guidelines (40 CFR part 58).

The relevant Subpart 3 provisions were created when the CAA was amended on November 15, 1990. The new CAA requirements for "moderate" CO areas, such as El Paso, required that the SIP be revised to include a 1990 base year emissions inventory (CAA section 187(a)(1)), contingency provisions (CAA section 187(a)(3)), corrections to existing motor vehicle inspection and maintenance (I/M) programs (CAA section 187(a)(4)), periodic emission inventories (CAA section 187(a)(5)), and the implementation of an oxygenated fuels program (CAA section 211(m)(1)). Sections 187(a)(2), (6), and (7) do not apply to the El Paso area because its design value was below 12.7 ppm at the time of classification. How the State met these requirements and our approvals, are described below:

A. 1990 base year emissions inventory (CAA section 187(a)(1)): EPA approved an emissions inventory on September 12, 1994 (*see* 59 FR 46766).

B. Contingency provisions (CAA section 187(a)(3)): EPA approved the use of 46 tons per day in incremental CO reduction credits from the Texas low-enhanced vehicle inspection and maintenance program, as fulfillment of the State's CO attainment contingency measure requirement for the El Paso nonattainment area under section 172(c)(9) on July 2, 2003 (*see* 68 FR 39457).

C. Corrections to the El Paso basic I/M program (CAA section 187(a)(4)): EPA approved the Texas Motorist Choice (TMC) I/M Program (which includes El Paso) on November 14, 2001 (*see* 66 FR 57261).

D. Periodic emissions inventories (CAA section 187(a)(5)): The State submitted an initial revision to the SIP for the El Paso CO moderate nonattainment area in a letter dated September 27, 1995. This submittal, as well as a February 1998 supplemental submittal contained a commitment to submit emission inventory updates. TCEQ continues to submit the Periodic Emissions Inventory (PEI) every three years.

E. Oxygenated fuels program implementation (CAA section 211(m)): EPA approved the El Paso oxygenated fuels program on September 12, 1994 (*see* 59 FR 46766).

(c) Redesignation Criterion: The Area Must Have a Fully Approved SIP Under Section 110(k) of the CAA

Section 107(d)(3)(E)(ii) of the CAA states that for an area to be redesignated to attainment, it must be determined that the Administrator has fully approved the applicable implementation plan for the area under section 110(k). As noted above, EPA previously approved SIP revisions for the El Paso CO nonattainment area that were required by the 1990 amendments to the CAA. In this action, we are also approving the maintenance plan proposed by the State, and the State's commitment to maintain an adequate monitoring network (contained in the maintenance plan). Thus, with this final rule to approve the El Paso redesignation request and maintenance plan, we will have fully approved the El Paso CO element of the SIP under section 110(k) of the CAA.

(d) Redesignation Criterion: The Area Must Show That the Improvement in Air Quality Is Due to Permanent and Enforceable Emissions Reductions

Section 107(d)(3)(E)(iii) of the CAA provides that for an area to be redesignated to attainment, the Administrator must determine that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan, implementation of applicable Federal air pollutant control regulations, and other permanent and enforceable reductions. The CO emissions reductions for El Paso, that are further described in Sections 3.5 and 5.4.2 of the El Paso maintenance plan, were achieved primarily through the Federal Motor Vehicle Control Program (FMVCP), an oxygenated fuels program, and a motor vehicle inspection and maintenance (I/M) program.

In general, the FMVCP provisions require vehicle manufacturers to meet more stringent vehicle emission limitations for new vehicles in future years. These emission limitations are phased in (as a percentage of new vehicles manufactured) over a period of years. As new, lower emitting vehicles replace older, higher emitting vehicles ("fleet turnover"), emission reductions are realized for a particular area such as El Paso. For example, EPA promulgated lower hydrocarbon (HC) and CO exhaust

emission standards in 1991, known as Tier I standards for new motor vehicles (light-duty vehicles and light-duty trucks) in response to the 1990 CAA amendments. These Tier I emissions standards were phased in with 40% of the 1994 model year fleet, 80% of the 1995 model year fleet, and 100% of the 1996 model year fleet.

As stated in Section 5.4.2 of the maintenance plan, significant additional emission reductions were realized from El Paso's basic I/M program. The program requires annual inspections of vehicles at independent inspection stations. We note that further improvements to the El Paso area's basic I/M program, to meet the requirements of EPA's November 5, 1992, (57 FR 52950) I/M rule, and upgrading the I/M program to meet the requirements for a low-enhanced program, were approved by us into the SIP on November 14, 2001 (68 FR 39457).

Oxygenated fuels are gasolines that are blended with additives that increase the level of oxygen in the fuel and, consequently, reduce CO tailpipe emissions. TAC Title 30, Chapter 114, Section 114.100, "Oxygenated Fuels Program", contains the oxygenated fuels provisions for the El Paso nonattainment area. This rule requires all El Paso area gas stations to sell fuels containing a 2.7% minimum oxygen content (by weight) during the wintertime CO high pollution season. The use of oxygenated fuels has significantly reduced CO emissions and contributed to the area's attainment of the CO NAAQS.

During the public comment process for State-level adoption of the maintenance plan, the Texas Oil and Gas Association (TXOGA) recommended removing the oxygenated fuels program as a control measure and establishing it as a contingency measure. Due to support for the oxygenated fuels program stated by the local governmental entities, the State chose to retain the program as a committed control measure as part of the redesignation request and maintenance plan. This rulemaking action involves EPA approval of the El Paso CO redesignation request and the associated maintenance plan submitted by the State. EPA only can act upon what a State has chosen to submit to EPA for approval as a SIP revision. EPA cannot usurp a state's primary role in establishing the SIP controls. Therefore, if EPA receives any comments about the

removal of the oxygenated fuels program to the contingency measures plan, we shall not consider them as relevant comment to this rulemaking. Should the State consider removing the oxygenated fuels program to the contingency measures plan at a later date, another public hearing and comment period would be held as part of a separate rulemaking and SIP revision process.

We have evaluated the various State and Federal control measures, and believe that the improvement in air quality in the El Paso nonattainment area has resulted from emission reductions that are permanent and enforceable.

(e) Redesignation Criterion: The Area Must Have a Fully Approved Maintenance Plan Under CAA Section 175A

Section 107(d)(3)(E)(iv) of the CAA provides that for an area to be redesignated to attainment, the Administrator must have fully approved a maintenance plan for the area meeting the requirements of section 175A of the CAA. Section 175A of the CAA sets forth the elements of a maintenance plan for areas seeking redesignation from nonattainment to attainment. The maintenance plan must demonstrate continued attainment of the applicable NAAQS for at least ten years after the Administrator approves a redesignation to attainment. Eight years after the promulgation of the redesignation, the State must submit a revised maintenance plan that demonstrates continued attainment for the subsequent ten-year period following the initial ten-year maintenance period. To address the possibility of future NAAQS violations, the maintenance plan must contain contingency measures, with a schedule for adoption and implementation, that are adequate to assure prompt correction of a violation. In addition, we issued further maintenance plan interpretations in the "General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990" (57 FR 13498, April 16, 1992), "General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Supplemental" (57 FR 18070, April 28, 1992), and the EPA guidance memorandum entitled "Procedures for Processing Requests to Redesignate Areas to Attainment" from John Calcagni, Director, Air Quality Management Division, Office of Air

Quality and Planning Standards, to Regional Air Division Directors, dated September 4, 1992 (hereafter the September 4, 1992 Calcagni Memorandum).

In this **Federal Register** action, EPA is approving the maintenance plan for the El Paso CO nonattainment area because we believe, as detailed below, that the State's maintenance plan submittal meets the requirements of section 175A and is consistent with our interpretations of the CAA, as reflected in the documents referenced above. Our analysis of the pertinent maintenance plan requirements, with reference to the State's February 13, 2008, submittal, is provided as follows:

1. Emissions Inventories—Attainment Year and Projections

EPA's interpretations of the CAA section 175A maintenance plan requirements are generally provided in the General Preamble (see 57 FR 13498, April 16, 1992) and the September 4, 1992 Calcagni Memorandum referenced above. Under our interpretations, areas seeking to redesignate to attainment for CO may demonstrate future maintenance of the CO NAAQS either by showing that future CO emissions will be equal to or less than the attainment year emissions or by providing a modeling demonstration.

For the El Paso area, the State selected the emissions inventory approach for demonstrating maintenance of the CO NAAQS; however, the State also conducted "hot spot" CO modeling to demonstrate that CO exceedances are not currently occurring at a potential hot spot and will not occur at such locations in the future. The maintenance plan submitted by the TCEQ on February 13, 2008, includes comprehensive inventories of CO emissions for the El Paso area. These inventories include emissions from stationary point sources, area sources, non-road mobile sources, and on-road mobile sources. The State selected 2002 as the year from which to develop the attainment year inventory and included a projection out to 2020. More detailed descriptions of the 2002 attainment year inventory and the projected inventory are documented in the maintenance plan in Chapter 2. Summary emission figures from the 2002 attainment year and the final maintenance year of 2020 are provided in Table 1 below.

TABLE 1—EL PASO COUNTY CO EMISSIONS FOR 2002–2020 (TPD)

Year	Point source	Area	Non-road mobile	On-road mobile	Total
2002	4.67	16.42	45.90	360.34	427.33
2020	5.13	19.10	63.77	230.26	318.26

As presented in Chapter 3, Table 3–1 of the State’s maintenance plan, ambient air quality monitoring data for consecutive calendar years 1999 through 2005 show a measured exceedance rate of the CO NAAQS of 1.0 or less per year, per monitor, in the El Paso nonattainment area. To further demonstrate maintenance of the CO NAAQS, the TCEQ agreed to additional “hot spot” modeling as requested by EPA on the basis of EPA’s Office of Air Quality Planning and Standards’ (OAQPS) September 30, 1994 Ozone/Carbon Monoxide Redesignations Reference Document. The modeling was done specifically to address two concerns—the El Paso CO monitoring network has a limited number of sites, and therefore may not have identified all the hot spots in the El Paso area; and in the future, urban growth may increase mobile emissions enough to cause exceedances of the NAAQS.

The TCEQ performed CO modeling at a heavily utilized intersection to demonstrate that CO exceedances are not currently occurring at a potential hot spot and will not occur at that location in the future. A modeling protocol detailing hotspot selection, proposed model usage, and data analysis was submitted by the State on February 17, 2005, and was approved by EPA via a letter dated March 30, 2005. The modeling protocol and approach taken are detailed in Chapter 4 of the maintenance plan. As shown in Table 4–2 of the maintenance plan, the current (base) case hot spot analysis predicted a maximum 8-hour CO concentration of 7.8 ppm, and the 2020 future case analysis predicted a maximum 8-hour CO concentration of 2.0 ppm. Both of these values are below the 9 ppm NAAQS, and demonstrate current and projected compliance with the CO standard. A more detailed evaluation by EPA of this hot spot analysis is provided in the TSD.

2. Demonstration of Maintenance—Projected Inventories

As we noted above, total CO emissions were projected forward by the State for the year 2020. We note the State’s approach for developing the projected inventory follows EPA guidance on projected emissions and we

believe it is acceptable.² The projected inventory shows that CO emissions are not estimated to exceed the 2002 attainment level during the time period 2002 through 2020 and, therefore, the El Paso area has satisfactorily demonstrated maintenance. The projected inventory was developed using EPA-approved technologies and methodologies. No new control strategies for point and area sources were relied upon in the projected inventory. CO emission reductions anticipated from EPA’s national rule for the Spark Ignition Small Engine Rule, Phase 1, were relied upon as a new control strategy for Nonroad sources. TCEQ relied upon emissions reductions anticipated from existing control strategies: FMVCP, Texas Oxygenated Fuel SIP, and the Texas I/M Program. Please see the TSD for more information on EPA’s review and evaluation of the State’s methodologies, modeling, inputs, etc., for developing the projected emissions inventory.

3. Monitoring Network and Verification of Continued Attainment

The TCEQ commits to maintain an appropriate air monitoring network for the El Paso area throughout the 10-year maintenance period. As required by 40 CFR part 58.20(d), TCEQ will consult with EPA in annual review of the air monitoring network to determine the adequacy of the CO monitoring network, whether or not additional monitoring is needed, and if/when monitor sites can be discontinued. The TCEQ also commits to adhere to data quality requirements as specified in 40 CFR part 58 Quality Assurance Requirements.

In El Paso County, there are eight monitoring sites, each of which has monitored attainment with the 8-hour CO NAAQS from 2002 through 2007. The 8-hour CO NAAQS is 9 ppm based on the three-year average of the fourth-highest daily maximum 8-hour CO concentration measured at each monitor within an area. The standard is considered to be attained at 9.4 parts per million (ppm). The three most recent 8-hour CO design values for El Paso

County are 6.4 ppm for 2005, 5.4 ppm for 2006, and 3.8 ppm for 2007.

Texas commits to track the progress of the maintenance plan by continuing to periodically update the emissions inventory (EI). It will compare the updated EIs against the projected 2020 EIs.

TCEQ also commits to continuing all the applicable control strategies, i.e., the measures approved into the El Paso SIP. For example, these measures include the Federal Motor Vehicle Control Program (FMVCP), an oxygenated fuels program, and a motor vehicle inspection and maintenance (I/M) program.

Based on the above, we are approving these commitments as satisfying the relevant requirements and we note that this final rulemaking approval will render the State’s commitments federally enforceable.

4. Contingency Plan

Section 175A(d) of the CAA requires that a maintenance plan include contingency provisions. To meet this requirement, the State has identified appropriate contingency measures along with a schedule for the development and implementation of such measures. In the February 13, 2008 submittal, Texas specifies the contingency trigger as a violation of the 8-hour CO standard based upon air quality monitoring data from the El Paso monitoring network. In the event that a monitored violation of the 8-hour CO standard occurs in any portion of the maintenance area, the State will first analyze the data to determine if the violation was caused by actions outside TCEQ’s jurisdiction (e.g., emissions from Mexico or another state) or within its jurisdiction. If the violation was caused by actions outside TCEQ’s jurisdiction, TCEQ will notify the EPA. If TCEQ determines the violation was caused by actions within TCEQ’s jurisdiction, TCEQ commits to adopt and implement the identified contingency measures as expeditiously as practicable, but no later than 18 months.

The State specifically identifies the following contingency measures to reattain the standard:

- Vehicle idling restrictions.
- Improved vehicle I/M.
- Improved traffic control measures.

² “Use of Actual Emissions in Maintenance Demonstrations for Ozone and Carbon Monoxide (CO) Nonattainment Areas,” signed by D. Kent Berry, Acting Director, Air Quality Management Division, November 30, 1993.

- Implementation of a vanpool program using Federal Congestion Mitigation and Air Quality Program (CMAQ) funds.

The maintenance plan indicates that the State may evaluate other potential strategies to address any future violations in the most appropriate and effective manner possible. Based on the above, we find that the contingency measures provided in the State's El Paso CO maintenance plan are sufficient and meet the requirements of section 175A(d) of the CAA.

5. Subsequent Maintenance Plan Revisions

In accordance with section 175A(b) of the CAA, Texas has committed to submit a revised maintenance plan eight years after our approval of the redesignation. This provision for revising the maintenance plan is contained in Chapter 5, Section 5.1 of the El Paso CO maintenance plan.

The maintenance plan adequately addresses the five basic components of a maintenance plan. EPA believes that the 8-hour CO maintenance plan SIP revision submitted by the State of Texas for the El Paso area meets the requirements of Section 175A of the CAA. For more information, please refer to our Technical Support Document.

III. EPA's Evaluation of the Transportation Conformity Requirements

Table 2-7 of the maintenance plan documents the motor vehicle emissions budget (MVEB) for the El Paso CO nonattainment area that has been established by this CO redesignation request. The MVEB is that portion of the total allowable emissions defined in the SIP revision allocated to on-road mobile sources for a certain date for meeting the purpose of the SIP, in this case maintaining compliance with the NAAQS in the nonattainment or maintenance area. EPA's conformity rule (40 CFR part 51, subpart T and part 93, subpart A) requires that transportation plans, programs and projects in nonattainment or maintenance areas conform to the SIP. The motor vehicle emissions budget is one mechanism EPA has identified for demonstrating conformity. Upon the effective date of this SIP approval, all future transportation improvement programs and long range transportation plans for the El Paso area will have to show conformity to the budgets in this plan; previous budgets approved or found adequate will no longer be applicable.

TABLE 2—EL PASO CO MVEB FOR 2020 (TPD)

Year	MVEB
2020	29.66

Our analysis indicates that the above figures are consistent with maintenance of the CO NAAQS throughout the maintenance period. In accordance with EPA's adequacy process, these MVEBs were posted on EPA's adequacy Web site for public notice on March 19, 2008 and were open for comment until April 18, 2008. No comments were received during this period. Therefore, we are finding as adequate and approving the 29.66 tpd for 2020 and beyond, CO emissions budget for the El Paso area. Budget modeling was developed for TCEQ under contract by the Texas Transportation Institute (TTI), utilizing El Paso travel model datasets developed by the El Paso Metropolitan Planning Organization. The modeling incorporated three onroad source control strategies that apply in the El Paso area: The FMVCP, the El Paso Oxygenated Fuel Program, and the I/M program (both detailed in Chapter 5, Section 5.4.2 of the maintenance plan).

IV. Consideration of Section 110(l) of the CAA

Section 110(l) of the CAA states that a SIP revision cannot be approved if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress towards attainment of a NAAQS or any other applicable requirement of the CAA. As stated above, the El Paso area has shown continuous attainment of the CO NAAQS since 1999 and has met the applicable Federal requirements for redesignation to attainment. The maintenance plan will not interfere with attainment or any other applicable requirement of the CAA. No control measures in the El Paso SIP are being removed.

V. Final Action

EPA is approving the redesignation of the El Paso area to attainment of the 8-hour CO NAAQS, as well as approving the El Paso area CO maintenance plan. We also are approving the associated MVEBs.

We have evaluated the State's submittal and have determined that it meets the applicable requirements of the Clean Air Act and EPA regulations, and is consistent with EPA policy.

EPA is publishing this rule without prior proposal because we view this as a non-controversial amendment and

anticipate no adverse comments. However, in the "Proposed Rules" section of today's **Federal Register**, we are publishing a separate document that will serve as the proposed rule to approve the SIP revision if relevant adverse comments are received on this direct final rule. We will not institute a second comment period on this action. Any parties interested in commenting must do so at this time. For further information about commenting on this rule, see the **ADDRESSES** section of this document.

If EPA receives adverse comment, we will publish a timely withdrawal in the **Federal Register** informing the public that the rule will not take effect. We would address all public comments in a subsequent final rule based on the proposed rule. Please note that if we receive adverse comment on an amendment, paragraph, or section of this rule and if that provision may be severed from the remainder of the rule, we may adopt as final those provisions of the rule that are not the subject of an adverse comment.

VI. Statutory and Executive Order Reviews

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this Action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);

- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country located in the state, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law.

The Congressional Review Act, 5 U.S.C. section 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996,

generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by October 3, 2008. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations.

40 CFR Part 81

Environmental protection, Air pollution control, National parks, Wilderness areas.

Dated: July 18, 2008.

Richard E. Greene,
Regional Administrator, Region 6.

■ 40 CFR parts 52 and 81 are amended as follows:

PART 52—[AMENDED]

■ 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart SS—Texas

■ 2. In § 52.2270, the second table in paragraph (e) entitled “EPA Approved Nonregulatory Provisions and Quasi-Regulatory Measures in the Texas SIP” is amended by adding an entry at the end of the table to read as follows:
(e) * * *

EPA APPROVED NONREGULATORY PROVISIONS AND QUASI-REGULATORY MEASURES IN THE TEXAS SIP

Name of SIP provision	Applicable geographic or nonattainment area	State submittal/effective date	EPA approval date	Comments
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
El Paso County Carbon Monoxide Maintenance Plan.	El Paso, TX	2/13/08	8/04/08	[Insert FR page number where document begins].

PART 81—[AMENDED]

■ 3. The authority citation for part 81 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*
■ 4. Section 81.344 is amended by revising the Carbon Monoxide table

entry for El Paso County to read as follows:

§ 81.344 Texas.
* * * * *

TEXAS—CARBON MONOXIDE

Designated area	Designation		Category/classification	
	Date ¹	Type	Date ¹	Type
El Paso El Paso County	8/04/08	Attainment.		
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *

¹ This date is November 15, 1990, unless otherwise noted.

EPA-APPROVED OHIO REGULATIONS—Continued

Ohio citation	Title/subject	Ohio effective date	EPA approval date	Notes
3745–21–18	Commercial motor vehicle and mobile equipment refinishing operations.	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–19	Control of volatile organic compound emissions from aerospace manufacturing and rework facilities.	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–20	Control of volatile organic emissions from shipbuilding and ship repair operations (marine coatings).	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–21	Storage of volatile organic liquids in fixed roof tanks and external floating roof tanks.	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–22	Control of volatile organic compound emissions from offset lithographic printing and letterpress printing facilities.	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–23	Control of volatile organic compound emissions from industrial solvent cleaning operations.	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–24	Flat wood paneling coatings	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–25	Control of VOC emissions from reinforced plastic composites production operations.	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–26	Surface coating of miscellaneous metal and plastic parts.	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–27	Boat manufacturing	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–28	Miscellaneous industrial adhesives and sealants.	10/15/2015	9/8/2017, [insert Federal Register citation].	
3745–21–29	Control of volatile organic compound emissions from automobile and light-duty truck assembly coating operations, heavier vehicle assembly coating operations, and cleaning operations associated with these coating operations.	10/15/2015	9/8/2017, [insert Federal Register citation].	
*	*	*	*	*

Chapter 3745–110—Nitrogen Oxides—Reasonably Available Control Technology

3745–110–03	RACT requirements and/or limitations for emissions of NO _x from stationary sources.	07/18/2013	9/8/2017, [insert Federal Register citation].	Only the NO _x emission limitation on unit P046 contained in 3745–110–03(N).
3745–110–05	Compliance methods	07/18/2013	9/8/2017, [insert Federal Register citation].	Only (A). For purposes of demonstrating compliance with the NO _x emission limitation on unit P046 contained in 3745–110–03(N).
*	*	*	*	*

* * * * *
 [FR Doc. 2017–18864 Filed 9–7–17; 8:45 am]
 BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R06–OAR–2016–0550; FRL–9966–98–Region 6]

Approval and Promulgation of Implementation Plans; Texas; El Paso Carbon Monoxide Limited Maintenance Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Pursuant to the Federal Clean Air Act (CAA or the Act), the Environmental Protection Agency (EPA) is approving the required second carbon monoxide (CO) maintenance plan as a revision to the Texas State Implementation Plan (SIP). The El Paso, Texas CO maintenance area (El Paso Area) has been demonstrating consistent air quality monitoring at or below 85% of the CO National Ambient Air Quality Standard (NAAQS or standard). Because of this, the State of Texas, through its designee, submitted the required second maintenance plan for the El Paso Area as a Limited Maintenance Plan (LMP).

DATES: This final rule is effective on October 10, 2017.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–R06–OAR–2016–0550. All documents in the docket are listed on the <http://www.regulations.gov> Web site. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through <http://www.regulations.gov>

www.regulations.gov or in hard copy at the EPA Region 6, 1445 Ross Avenue, Suite 700, Dallas, Texas 75202–2733.

FOR FURTHER INFORMATION CONTACT: Jeff Riley, 214–665–8542, riley.jeffrey@epa.gov.

SUPPLEMENTARY INFORMATION:

Throughout this document “we,” “us,” and “our” means the EPA.

I. Background

The factual background for this action is discussed in detail in our March 21, 2017 direct final rule and proposal (82 FR 14442, 82 FR 14499). Originally, we issued a direct final rule to approve the required second CO maintenance plan for the El Paso, Texas CO maintenance area as a revision to the Texas SIP.

However, the direct final rule and proposal stated that if any relevant adverse comments were received by the end of the public comment period on April 20, 2017, the direct final rule would be withdrawn and we would respond to the comments in a subsequent final action. Relevant adverse comments were received during the comment period, and the direct final rule was withdrawn on May 22, 2017 (82 FR 23148). The background information found in the direct final is still relevant and our March 21, 2017 proposal provides the basis for this final action.

We received comments on our proposal from one commenter. Our response to the comments are below.

II. Response to Comments

Comment 1: The Commenter states that “(a)dditional CO monitors are necessary to effectively monitor compliance” of the CO NAAQS in the El Paso maintenance area, and asserts that the current El Paso CO monitoring network operated by TCEQ is inadequate in terms of the number, siting, type, and scale of representativeness of the monitors that comprise the network.

Response 1: EPA disagrees with the assertion that the current El Paso CO monitoring network is inadequate to effectively monitor compliance with the CO NAAQS. Each state-submitted annual monitoring network plan is evaluated by EPA pursuant to 40 CFR part 58.10 requirements to determine if the criteria for implementation and maintenance of the area’s air quality surveillance system have been met. Annual monitoring plans for the El Paso area have been reviewed and ultimately approved by EPA for the full extent of the timeframe noted by the Commenter. In recognition of significantly declining CO concentrations in the El Paso Area

since 2000, Texas has gradually reduced and consolidated the El Paso CO monitoring network to three sites in 2015 with approval from the EPA. The reductions in the number of active network monitors specifically during the 2012–2014 timeframe were conducted in consultation with EPA, and were done in accordance with 40 CFR part 58.10 requirements. We have included EPA’s responses to the State’s annual monitoring network plans for the years 2012–2017 in the docket for this rulemaking.

We further note that 40 CFR 58.10(a)(1) requires that beginning July 1, 2007, the State shall adopt and submit to the Regional Administrator an annual monitoring network plan, and that this annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA. This public inspection period of annual monitoring network plans has been provided by the State for all submittals since July 1, 2007, and no adverse comments have been received pertaining to the El Paso Area CO monitoring network in this time.

In the September 21, 2016 limited maintenance plan SIP submission, the State provided data showing monitored CO values from 2006–2015, reflecting a 2015 8-hour CO design value of 2.8 ppm. Thus, the design value represented for the 8-hour standard was less than 31% of the CO NAAQS. Only 1 CO monitor is currently required for El Paso, the Chamizal monitor (AQS #48–141–0044) required for NCore (National Core monitoring network) monitoring. This is a neighborhood-scale, high CO concentration site for the city and it recorded a 2.3 ppm 8-hour CO design value for 2016, similar to the 2.4 ppm 8-hour CO design value for 2016 recorded at the nearby Ascarate Park monitor to the southeast of Chamizal. The 2.3 ppm and 2.4 ppm 8-hour CO design values are significantly below the 8-hour CO NAAQS of 9.4 ppm, representing ambient concentrations 24% and 26%, respectively, of the 8-hour CO NAAQS. Both of these monitors are located in the CO maintenance area, and we note that these design values also represent a continued downward trend of CO ambient concentrations beyond the 2015 design value provided in the State’s September 21, 2016 submittal.

The Commenter also states that the El Paso CO LMP should include a commitment to collocate at least one near-road nitrogen dioxide (NO₂) monitor with a CO monitor as a contingency should a triggering event take place during the maintenance

period. The basis of this argument is twofold: EPA network design criteria under 40 CFR part 58, Appendix D require at least one CO monitor to operate collocated with one required near-road NO₂ monitor in Core Based Statistical Areas with a population of 1,000,000 or more persons. Further, the Commenter refers to Texas Department of State Health Services (TDSHS) estimates that the El Paso population will be approaching 1,000,000 as early as 2020. The Commenter provided no specific citation for this TDSHS data.

The 40 CFR part 58, Appendix D standard for population data is considered to be U.S. Census Bureau data. Based on U.S. Census data, El Paso will most likely not reach 1,000,000 in population by 2028. The current population growth estimate rate per year for El Paso is 5,811/year based upon U.S. Census estimates from 2010–2016.¹ The 2010 estimate was 807,108 and the 2016 estimate was 841,971. Using this growth estimate rate, the U.S. Census data indicates that the population of El Paso would reach around 912,000 in 2028, and would reach 1,000,000 by roughly 2043. So, pursuant to EPA 40 CFR part 58 requirements, a near road NO₂/CO monitoring site will most likely not be required in El Paso until well after 2028 due to this slower growth estimation rate. At this time and based on the data provided, EPA does not believe such a contingency would provide meaningful air quality benefit to the El Paso area.

Comment 2: The Commenter argues that statements made by the current EPA Administration on March 15, 2017 are an indication that the Tier 3 Motor Vehicle Emission and Fuel Standards may be repealed or weakened, and therefore the state’s reliance upon these standards as Federal control measures is a tenuous assumption.

Response 2: We disagree with the Commenter. The EPA Administration’s March 15, 2017 statements do not pertain to the Tier 3 Motor Vehicle Emission and Fuel Standards. See 79 FR 23414 (April 28, 2014). Rather, these statements concern reopening a mid-term evaluation of the National Program for greenhouse gas (GHG) emissions and fuel economy standards for light-duty vehicles, developed jointly by EPA and the National Highway Traffic Safety Administration (NHTSA). The Phase 2 standards of this program, applying to model years 2017–2025, were promulgated in the Final Rule for 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and

¹ <https://www.census.gov/data/tables/2016/demo/popest/total-metro-and-micro-statistical-areas.html>.

Corporate Average Fuel Economy Standards. 77 FR 62624 (October 15, 2012). This rulemaking is separate, distinct, and independent of the action we are addressing here. The October 15, 2012 rulemaking is therefore beyond the scope of this rulemaking action and we refer the Commenter to the October 15, 2012 action for further detail.

To EPA's knowledge, no such statements have been made concerning implementation of the Tier 3 Motor Vehicle Emission and Fuel Standards, and therefore the state's reliance upon these standards as valid Federal control measures is appropriate for this SIP action. At this time, we see no legal requirement for the state to revise the LMP with an explicit commitment to reevaluate its reliance thereof in the speculative chance that a Federal measure could be weakened or removed some time in the future. We note that in any case of Federal measures being repealed or weakened, pursuant to 42 U.S.C. 7410(k)(5), the EPA has Clean Air Act authority to require a state to revise an approved SIP if it finds that it has become substantially inadequate to maintain the NAAQS. Moreover, CAA section 175A provides the EPA discretion to require the state to submit a revised SIP should the area fail to maintain the NAAQS.

Comment 3: The Commenter claims that the El Paso CO LMP lacks an adequate contingency plan because the State has not identified an appropriate trigger, and "has not identified measures that will be promptly adopted nor . . . identified a schedule or procedure to implement additional control measures."

Response 3: The State's September 21, 2016 LMP submission identifies violation of the CO NAAQS as a contingency trigger. EPA's interpretation of section 175A of the CAA, as it pertains to LMP's for CO, is contained in the October 6, 1995, national guidance memorandum titled "Limited Maintenance Plan Option for Nonclassifiable CO Nonattainment Areas" from Joseph Paisie, Office of Air Quality Planning and Standards.² While the Commenter correctly notes that under EPA's guidance, "states are encouraged to choose a pre-violation action level as a trigger", the guidance explicitly states that a violation of the NAAQS is an acceptable trigger.³ Further, the State has identified

potential contingency measures, as well as a schedule and procedure for timely implementation in the event of a CO NAAQS violation.

EPA disagrees with the Commenter's contention that the maintenance plan's implementation schedules for contingency measures fail to satisfy the "prompt response" requirement in CAA section 175A(d). This section of the CAA requires that a maintenance plan include such contingency provisions as the Administrator deems necessary to assure that the state "will promptly correct any violation" of the NAAQS that occurs after redesignation of an area. Thus, Congress gave EPA discretion to evaluate and determine the contingency measures that EPA "deems necessary" to assure that the state will "promptly correct" any subsequent violation.

Section 175A does not establish any deadlines for implementation of contingency measures after redesignation to attainment. It also provides far more latitude than does Section 172(c)(9), which applies to a different set of contingency measures applicable to nonattainment areas. Section 172(c)(9) contingency measures must "take effect . . . without further action by the State or [EPA]." By contrast, section 175A(d) allows EPA to take into account the need of a state to assess, adopt, and implement contingency measures if and when a violation occurs after an area's redesignation to attainment. As noted by the U.S. Court of Appeals for the Sixth Circuit in *Greenbaum v. EPA*, 370 F.3d 527, 540 (6th Cir. 2004), that was cited by the Commenter, the EPA "has been granted broad discretion by Congress in determining what is 'necessary to assure' prompt correction" under section 175A, and "no pre-determined schedule for adoption of the measures is necessary in each specific case." In making this determination, EPA accounts for the time that is required for states to analyze data and address the causes and appropriate means of remedying a violation. EPA also considers the time required to adopt and implement appropriate measures in assessing what "promptly" means in this context.

In the case of the El Paso Area, EPA believes that the contingency measures set forth in the submittal, combined with the State's commitment to implement contingency measures as expeditiously as practicable but no later than 18 months of a trigger, provide assurance that the State will "promptly" correct a future NAAQS CO violation. Given the uncertainty regarding the nature of the contingency measures

required to address a violation, a State may need up to 24 months to enact new statutes; develop new or modified regulations and complete notice and comment rulemaking; or take actions authorized by current state law that require the purchase and installation of equipment (e.g., diesel retrofits) or the development and implementation of new programs. In addition, EPA has previously approved implementation of contingency measures within 24 months of a violation to comply with the requirements of Section 175A in several instances. See, e.g., 81 FR 76891 (November 4, 2016), 80 FR 61775 (October 14, 2015), 79 FR 67120 (November 12, 2014), 78 FR 44494 (July 24, 2013), 77 FR 34819 (June 12, 2012), 76 FR 59512 (Sept. 27, 2011), 75 FR 2091 (January 14, 2010). EPA also notes that the Commenter did not provide any rationale for concluding that a suggested 120-day implementation period of control strategies is necessary to satisfy section 175A.

III. Final Action

We are approving the CO LMP for the El Paso Area submitted by the TCEQ on September 21, 2016 as a revision to the Texas SIP because the State adequately demonstrates that the El Paso Area will maintain the CO NAAQS and meet all the criteria of a LMP through the second 10-year maintenance period.

IV. Statutory and Executive Order Reviews

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, the EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);

² A copy of the October 6, 1995 Guidance Memorandum is included in the docket for this rulemaking.

³ EPA's September 4, 1992, John Calcagni policy memorandum entitled "Procedures for Processing Requests to Redesignate Areas to Attainment" provides further support of this interpretation.

- Does not contain any unfunded mandate or significantly or uniquely affect small governments, described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
 - Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
 - Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
 - Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
 - Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
 - Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).
- In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal

governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by November 7, 2017. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to

enforce its requirements. (See section 307(b)(2)).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: August 29, 2017.

Samuel Coleman,

Acting Regional Administrator, Region 6.

40 CFR part 52 is amended as follows:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

- 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart SS—Texas

- 2. In § 52.2270 (e), the second table entitled “EPA Approved Nonregulatory Provisions and Quasi-Regulatory Measures in the Texas SIP” is amended by adding a new entry at the end of the table for “Second 10-year Carbon Monoxide maintenance plan (limited maintenance plan) for the El Paso CO area” to read as follows:

§ 52.2270 Identification of plan.

* * * * *
(e) * * *

EPA APPROVED NONREGULATORY PROVISIONS AND QUASI-REGULATORY MEASURES IN THE TEXAS SIP

Name of SIP provision	Applicable geographic or nonattainment area	State submittal/ effective date	EPA approval date	Comments
Second 10-year Carbon Monoxide maintenance plan (limited maintenance plan) for the El Paso CO area.	El Paso, TX ...	9/21/2016	9/8/2017, [Insert Federal Register citation].	

* * * * *
[FR Doc. 2017-18950 Filed 9-7-17; 8:45 am]
BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R10-OAR-2015-0131; FRL-9967-21-Region 10]

Air Plan Approval; AK, Fairbanks North Star Borough; 2006 PM_{2.5} Moderate Area Plan

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is approving state implementation plan (SIP) revisions submitted by the State of Alaska (Alaska or the State) to address Clean Air Act (CAA or Act) requirements for the 2006 24-hour fine particulate matter (PM_{2.5}) national ambient air quality standards (NAAQS) in the Fairbanks North Star Borough Moderate PM_{2.5} nonattainment area (FNSB NAA). Alaska submitted an attainment plan for the FNSB NAA on December 31, 2014, to meet applicable requirements for an area classified as “Moderate” nonattainment, and made additional submissions and provided

clarifying information to supplement the attainment plan in January 2015, March 2015, July 2015, November 2015, March 2016, November 2016, and January 2017 (hereafter, the initial submission and all supplemental and clarifying information will be collectively referred to as “the FNSB Moderate Plan”).

DATES: This action is effective on October 10, 2017.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-R10-OAR-2015-0131. All documents in the docket are listed on the <https://www.regulations.gov> Web site. Although listed in the index, some

REVISION TO THE
NEW MEXICO PM10 STATE IMPLEMENTATION PLAN
FOR ANTHONY, NEW MEXICO

Prepared by the
New Mexico Environment Department
Air Quality Bureau

November 8, 1991



Approved
Roy Walker, Chairman
Environmental Improvement Board

11/8/91
Date

I. Background

A. History

Soil in Anthony and the surrounding region tends to be sandy and friable. This, in concert with the sparse vegetation, low rainfall and gusty winds inherent to the region, can result in relatively high levels of naturally occurring rural fugitive dust. In 1987, New Mexico petitioned EPA and was granted Rural Fugitive Dust Area (RFDA) designation for Anthony. This designation was based on a list of criteria which included reviews of air sampling data, particulate emission sources, available control strategies and demographics. Under the RFDA policy, it was recognized that exceedances of the particulate matter ambient standard were primarily due to blowing dust inherent to the region and thus the development of control strategies would be pointless.

With the implementation of the 1990 Clean Air Act Amendments (CAAA), EPA discontinued the RFDA program. Under the CAAA, all areas violating the PM10 standard prior to January 1, 1989 were designated non-attainment whether or not the particulate matter could actually be controlled. PM10 is defined as particulate matter with an aerodynamic diameter less than or equal to 10 microns. EPA adopted the National Ambient Air Quality Standards (NAAQS) for PM10 in July of 1987. These standards limit the PM10 24-hour average to 150 micrograms per cubic meter (ug/m^3) and the annual arithmetic mean to $50 \text{ ug}/\text{m}^3$.

All non-attainment areas, including Anthony, have been initially classified as moderate. EPA may subsequently redesignate moderate areas as serious, subjecting them to stricter control requirements. This may happen if an area cannot practicably attain the PM10 standard by the moderate area deadline of December 31, 1994, or if the State fails to submit a PM10 State Implementation Plan revision by the November 15, 1991 deadline. However, the CAAA also provides for a waiver to the attainment date for areas where non-anthropogenic emissions contribute significantly to a NAAQS violation. As discussed in this plan, the Department believes a waiver is appropriate for Anthony and that further controls for serious areas are unwarranted.

The State Implementation Plan or SIP contains all federally required air quality plans and regulations developed to ensure that the provisions of the federal Clean Air Act and its amendments are satisfied. This includes the attainment and maintenance of the NAAQS. New Mexico's air quality SIP, first adopted in 1972, incorporates the control strategies and regulations found necessary to meet these standards.

The purpose of this revision to the New Mexico SIP is to address the mandatory federal requirements for PM10 non-attainment areas applicable to Anthony. In those moderate PM10 non-attainment areas where the State's control strategy cannot demonstrate attainment by the applicable date mandated in the Act, EPA requires the State to document that its control strategy represents the application of the available control measures to all source categories. Available control measures include those which are technologically and economically feasible for the area. The State has considered partial implementation of control measures where full implementation is not feasible. In addition, the State has addressed the impacts of individual source categories on ambient air levels, legal responsibility for and enforceability of chosen control measures and relevant quantitative milestones. Sources whose emissions are shown to be insignificant ("de minimis") are excluded from further consideration.

B. Anthony, NM and Surrounding Region

The community of Anthony is located in south central New Mexico, just east of where the Rio Grande first crosses the border into Texas. Las Cruces, New Mexico, with a population of 62,126 (1990 census) lies 35 kilometers (km) to the north. El Paso, Texas, with a population of 515,342 (1990 census) lies 30 km to the south. Although the community of Anthony, New Mexico, is not incorporated as a municipality, its 1990 population as a Census Designated Place (CDP) was 5160. Anthony, Texas, directly across the border to the south, is incorporated and has a population of 3,328. The County of Dona Ana (in which both Anthony and Las Cruces are situated) had a 1990 population of 135,510. Figure 1 presents a map of Dona Ana County. Figure 2 is a map of Anthony, including the designated non-attainment area (sections 35 and 36 of Township 26 south, Range 3 east).

The south (Mesilla) valley, created by the Rio Grande, is defined in this report as extending south of Las Cruces to north of El Paso (Texas). The valley is about five kilometers wide, narrowing towards El Paso and bordered by the West Mesa and, to the east, by the Franklin Mountains. Unless otherwise noted, demographic information does not include the Texan (south-eastern) portion of the valley.

Of the 21 communities in Dona Ana County, only Las Cruces, Sunland Park, Hatch and Mesilla (adjoining Las Cruces) are incorporated. The reason is financial. Most communities lack the tax base necessary to support a municipal government. As a result, the county carries the burden for roads, planning and other services. Unfortunately, the county's tax base is also weak. Approximately 86 percent of the county is non-taxable (state or federally owned) land. Much of the county's work is funded by state or federal grants. For example, 75 to 100% of road work money (depending on the project) is provided by the state.

Preliminary (1990 estimated) census figures support the common observation that the area is poor:

	<u>Median Yearly Household Income</u>	<u>Per Capita Yearly Income</u>
United States	\$27,000	\$13,900
New Mexico	\$20,500	\$9,600
Dona Ana County	\$17,300	\$7,400
South Valley	\$14,900	\$5,300

While the median yearly household income in the south valley is low, at 55% of the national average, the per capita income is even less, at only 38%. This area has a higher percentage of children, elderly and unemployed, all of which require services while not necessarily paying taxes. The 1990 census results verify that New Mexico and Dona Ana County residents are younger than the national average and live in larger households:

	<u>Median Age</u>	<u>Persons per household</u>
United States	32.9	2.63
New Mexico	31.3	2.74
Dona Ana County	27.9	2.92
Anthony CDP	NA	3.96

It is estimated (1980 census) that approximately 30% of the valley's population is over 16 years of age and works. The 1990 census results indicate that 40% of Anthony's population is 16 years of age or younger and that 23% of Anthony's households have one or more persons who are 60 years old or older. The County estimates that 16% of the population receives unemployment benefits in any given year, with 8% unemployed for 15 or more weeks per year. In 1980, 28% of all families were below the poverty level (compared to 22% nationally).

Anthony's population has been doubling in size each decade, with (New Mexico) populations of 1700 in '70, 3200 in '80 and 5160 in '90. This growth is not expected to slow. The population is swelling due to the birthrate and to incoming immigrants looking for work. In 1980, about one quarter of the population was foreign born, mostly from Mexico. Since then, the 1987 Amnesty law has allowed hundreds of Mexican laborers to establish legal residence in the Mesilla valley. Many have subsequently brought their families.

The opening of a new border crossing and the continuing expansion of El Paso will further stimulate growth in the area. Anthony is particularly attractive to developers as the community has municipal sewer service. Without such service, state regulations limit the minimum size of residential plots to 3/4 acre. Only three communities in the south valley (Santa Teresa, Sunland Park and Anthony) have sewage treatment plants. State funds have been allotted to double the capacity of the Anthony plant over the next 2 years.

C. Air Quality Data

The State has been monitoring PM10 in Anthony since March of 1988. Air quality data is included in Appendix A. As of the end of the second quarter of 1991, a total of twelve PM10 24-hour averages greater than the standard have been recorded. Four of these exceedances occurred within the first month of monitoring. The state measured 7, 4 and 1 exceedances in 1988, 1989 and 1990, respectively. There have been no exceedances measured in the first two quarters of 1991. This downward trend is also reflected in Figure 3, where the monthly averages tend to drop with each passing year.

Prior to 1990, the standard for the annual arithmetic mean was also exceeded. The annual arithmetic means have been calculated using the method described in 40 CFR Part 50 appendix K. These values include high wind and flagged data. The annual arithmetic mean for 1991 reflects only the first two quarters of the year.

The 24-hour and annual mean exceedances are listed in Table 1. Half of the 24-hour exceedances occurred on windy days. Two have been flagged by EPA as exceptional events, and the state has requested that the four additional high wind days also be flagged. As seen in Figure 3, PM10 concentrations and exceedances tend to be higher during the windier seasons of Spring and Fall. Exceedances which occurred on low wind days were possibly caused by atmospheric inversions trapping locally generated dust.

The filters which recorded the 1989 and 1990 exceedances have been analyzed and are discussed in Appendix B. Analysis has shown that the particulates in the air on both high and low wind days are characteristic of, and likely derived from, local soils. Meteorological data presented is from the La Union monitoring tower, 11 km southwest of Anthony.

II. Emission Sources and Control Strategies

In accordance with the April 2, 1991 EPA policy document titled PM-10 Moderate Area SIP Guidance, all listed and known area and point source categories have been analyzed for the Anthony area. The Guidance requires that anthropogenic (man-made) source categories with significant emissions be analyzed for the technical and economic feasibility of implementing control measures. For point sources, such measures are called "RACT" or "reasonably available control technology". For area sources, these measures are called "RACM" or "reasonably available control measures". The EPA guidance document described above includes a list of RACT and RACM strategies to be considered. Indications of the legal responsibility for and enforceability of chosen control measures and relevant quantitative milestones are also required.

PM10 emission sources within Dona Ana county and the Anthony non-attainment area are discussed below and in Table 2. Where particulate emissions from any specific category were determined to be de minimis or insignificant, the category was dropped from further consideration for the implementation of RACT or RACM. As shown, all source categories are being currently controlled and/or are de minimis. As such, the application of quantitative milestones or contingency plans are not relevant. The greatest source of PM10 in Dona Ana county, windblown soil from partially vegetated areas such as range lands and desert, is non-anthropogenic.

A. Point Sources

Industrial point sources of PM10 have been analyzed to determine their impacts on Anthony and the appropriateness of retrofitting reasonably available control technology or RACT. Because Anthony is located on the New Mexico-Texas border, the point source analysis included sources within Texas. An emission inventory was compiled and used as input for dispersion modeling to predict the impact on Anthony.

In the past, several cotton gins operated in this area. These gins, included in the emission inventory (Table 2) and modeling summary (Appendix C), have all been closed within the last year in order to consolidate their operations into a single, larger gin near Vado (11 km north of Anthony). Anticipated PM10 emissions from the new gin are 1.14 pounds per hour. The gin is to operate a maximum of 24 hours per day for 4 months of each year (mid-September to mid-January).

There are no other industrial point sources of any size in or adjacent to Anthony located within New Mexico. This determination is based on a search of all existing emission inventory, permitting, and registration files. The closest point sources to Anthony in New Mexico are both located in Sunland Park which is approximately 23 km away. All PM10 point sources within 50 km of Anthony were included regardless of size. Using this criterion, three sources besides the cotton gins were identified. One of the three sources, Ribble Construction, is a portable sand and gravel plant which had been located 30 km from Anthony but is currently not in Dona Ana County.

The Texas Air Control Board furnished the Department with a complete PM10 point source inventory which has been compiled for the El Paso PM10 SIP. For purposes of this analysis, the six sources closest to Anthony were included. Even though it is located 26 km from Anthony, the Asarco Smelter was included due to its high PM10 emission rate. The two point sources closest to Anthony

are located across the state line in Texas. These facilities, Proler International and Border Steel, are each within 5 km of Anthony.

A summary of the point source emission inventory and modeling inputs, outputs and results are included as Appendix C to this revision. Maximum impact due to these sources was modeled using ISCST (version 90346). It was determined that the most representative meteorological data was from a station in Las Cruces. One full year of meteorological data (1990) was used. The maximum predicted 24-hour impact from all historical and current point sources was 2.86 ug/m³. The cumulative annual average was predicted to be 0.69 ug/m³.

These two values are extremely low and considered to be de minimis, especially when compared to the 24-hour and annual PM₁₀ standards of 150 ug/m³ and 50 ug/m³ respectively. For comparison, EPA non-attainment new source review requirements in 40 CFR Part 51, Appendix S establish significance levels which define when a major source is causing or contributing to a violation of a NAAQS. Impacts below these Appendix S concentrations are deemed de minimis. The Department has used these same values in AQCR 702-Permits to define sources impacting non-attainment areas. For PM₁₀, the significance values are 5 ug/m³ and 1 ug/m³ for the 24-hour and annual standards, respectively. Not only does each point source in the analysis have an ambient impact below these concentrations, but the cumulative impact of all sources combined is below these significance levels.

Based on the modeling analysis, the Department finds industrial point sources have no significant impact on air quality in Anthony. As allowed by the EPA SIP Guidance for PM₁₀ Moderate Areas, it is not necessary to consider the appropriate level of RACT to be required of point sources because the current impact is de minimis. There would be no improvement in PM₁₀ concentrations in Anthony brought about through additional controls on point sources. In addition, there is no reason to conduct any other more advanced modeling analysis regarding point sources when their impact is very clearly minimal.

Regarding future emissions from point sources, the Department recognizes that Anthony is officially designated non-attainment for PM₁₀. As such existing requirements for new sources locating in or impacting Anthony in AQCR's 702 and 709 will be applied and followed. The Department will also strive to meet EPA guidance on non-attainment new source review issued in response to the 1990 Amendments prior to revising AQCR's 702 and 709 when this is possible.

EPA recently promulgated new test methods (201 and 201A) for PM₁₀ and proposed test method 202 for measurement of condensible particulate emissions. Although this SIP revision contains no emission limits, any future source given PM₁₀ emission limits will be required to use appropriate EPA approved test methods.

B. Area Sources

Available emission inventories indicate that the majority of PM₁₀ emissions in New Mexico are from area sources. Area sources include fugitive and reentrained dust from roads, fugitive dust from sparsely vegetated surfaces, range lands and agricultural areas, motor vehicles and residential woodburning.

1. Unpaved Roads

The Dona Ana County Planning Department has estimated that almost 10 miles, or about 1/3, of the streets in Anthony are unpaved. Traffic along unpaved roads is observed to be slow, an apparent attempt to minimize dust. PM10 emissions from unpaved roads in the non-attainment area are estimated to be 36.7 tons per year (see Table 2 for calculations).

Area residents are eager to have these streets paved, or at least improved. However, County and State funds only cover 2 road projects per year in each (Road Commissioner) district. Anthony shares District 2 with 5 other communities. As a result, progress has been slow. However, some streets have been primed (sprayed with oil) or treated by double penetration (grading, oil and large aggregate, oil and small aggregate) until funds are available to pave them. Priming is expected to last about a year. Double penetration treatment should last 5 to 6 years. Last year, 4 streets were primed in Anthony. Other streets were treated (double penetration) in conjunction with the installation of new sewer lines.

In the 1986 EPA Rural Fugitive Dust Area Study in Grant County, New Mexico, researchers determined that:

"The possible control strategies for the area are limited due to the nature of the dust sources. Because agricultural tilling and wind erosion represent negligible dust sources, common controls such as conservation tilling and acreage stabilization are unwarranted. Since the greatest source of dust is generated by vehicular traffic on dirt roads, the control having the greatest effect would be paving or treating the dirt roads. This form of dust control may prove to be cost prohibitive. Grant County road officials estimated paving costs to be \$80,000 per mile. This would amount to \$2,000 per ton of particulates removed assuming paving would eliminate the 22,997 tons/year particulates reported in [the 1983] NEDS. The county paved a total of 3 miles in 1985."

It is not clear whether EPAs cost estimate has been annualized, or if it includes the continuing costs of maintaining and repaving these roads. However, the Division agrees that the cost to government of paving public roads as a form of dust control is prohibitive. This cost has risen since the 1986 Grant County report. The Dona Ana County Road Department estimates that one mile of (hot mix) paved road costs \$4.59 per square yard, or \$108,000 per mile (40 foot width). This 26% cost increase translates to an estimated control cost of \$2520 per ton of particulate. Assuming that 47% of the total suspended particulate is PM10 (PM10 SIP Development Guide, EPA, June 1987), the cost of controlling PM10 by paving roads may be estimated at approximately \$5360 per ton.

The County and State continue to pave and treat roads as expeditiously as funding allows. However, to pave all of the unpaved roads in Anthony (assuming a road width of 24 feet) will cost approximately \$693,000 (1991 dollars). Paving as a PM10 control strategy is economically infeasible.

Recent growth in the area has raised concerns about the creation of additional unpaved residential roads. A number of low-cost housing developments have been built or proposed in the region. The recently revised Land Subdivision Regulations of Dona Ana County (December 11, 1990) require most developers to pave newly established roads. If these streets are up to (hot mix) code, the county will annex and maintain them. The New Mexico Constitution prohibits the county from paving or maintaining private roads.

2. Paved Roads

The Dona Ana County Road Department is responsible for maintaining the paved public roads in Anthony. This includes clean-up after heavy rains or winds have deposited soil onto paved roads. Climate has not necessitated the salting of roads in the winter. Due to a lack of funding, sidewalks are rare in Anthony and street sweepers are operated on a complaint basis only.

The State has estimated PM10 emissions due to re-entrained dust from paved roads to be 0.7 tons per year. These emissions are considered de minimis.

3. Haul Trucks

By policy, all Dona Ana County haul trucks are covered. Most commercial trucks are covered as well, in order to avoid material loss and complaints from broken windows. Emissions from these sources are considered de minimis.

4. Unvegetated Areas

Dona Ana County receives less than 9 inches of rain per year. This scarcity of water virtually guarantees an abundance of dry, dusty yards, vacant lots and ball fields. All of these fugitive dust sources are adjacent to (and up wind of) the monitor. The only ballfield in Anthony is about 1000 feet southwest of the monitor. This well used ballpark is devoid of plantlife, and the parking area and adjacent road are unpaved.

Nearer the monitor, the (historically) paved parking lot on which the monitors sit is now either ground to dust and gravel or simply covered with dust and gravel. A vacant lot sits across the street (south and slightly west). Although the nearest streets are paved, there are no curbs, sidewalks or lawns. A partially vegetated vacant lot sits due east of the monitors (emissions from this vacant lot are shown in Figures 21 and 22 of Appendix B).

Clearly, these sources can be significant, although during high winds dust from surrounding range land may dominate impacts on the monitor site. However, for a region in which virtually all areas not covered by pavement or buildings are sparsely vegetated and subject to wind erosion, feasible control strategies are not forthcoming. Irrigated crop lands and school lawns are notable exceptions; however, in the desert not all areas can be irrigated. In fact, water pressures in the overextended residential water system in Anthony are often feeble and erratic. Even with the planned improvements to the system, area water resources cannot sustain the kind of groundcover necessary to prevent wind erosion. It is technologically infeasible to vegetate the surrounding area with ground cover.

Earth moving activities further raise dust. An ordinance regarding the grading of land has recently been developed by the County Road Department. The new ordinance requires individuals to obtain a permit and to water while grading.

5. Trash Burning

New Mexico Air Quality Control Regulation (AQCR) 301, included as Appendix G, prohibits the burning of refuse in towns the size of Anthony. It is also illegal to burn trash in Dona Ana County (Dona Ana County Ordinance No. 79-1, Section III.E). Violators may be fined up to \$300 or sentenced to up to 90 days in jail for each offense of the County regulation, and fined up to \$1000 per day for violation of the State regulation. In addition, the transfer facility where residents deposit their trash will not accept the remains of

burnt trash. This policy was instituted after smoldering garbage ignited and destroyed one of their bins. The county is also developing a system to provide household pick-up. These efforts reduce both blowing trash and trash burning.

PM-10 emissions due to the burning of trash are considered well controlled and de minimis.

6. Wood Burning (home heating)

The 1990 census information regarding the use of wood burning for home heating is not yet available. According to the 1980 census for Anthony, 'House heating fuel' use was 71% utility gas, 27% bottled, tank or LP gas, 2% electricity and zero wood, fuel oil, coal or other fuel. However, it is not clear how many migrants, illegals or illiterate were included in the 1980 census, or how many of these individuals winter in Anthony. The 1990 results will likely be higher, as woodstoves became more popular during the 1980's. Although fireplaces have always been common, the regional practice is to use them on Christmas Eve and not for general home heating.

Woodsmoke contributions to PM10 exceedances would be most significant on low wind days in the winter. However, the filter analyses described in Appendix B have shown that wood smoke was not a significant contributor to any of the exceedances, including the exceedance which occurred on the (low wind) Christmas Eve of 1989. Based on filter analyses and available information, emissions from these sources are considered de minimis.

7. Off-road recreational vehicles

Due to low income levels, off-road recreational vehicles are uncommon in or around Anthony. Although some of these vehicles were observed near Sunland Park, aerial photographs do not show any areas near Anthony with the distinctive patterns of off-road vehicle use.

8. Agricultural and range lands

A report describing the PM10 contributions from rural land soils in the Anthony area is included as Appendix D. As documented in that report and in Appendix F (correspondence from the Soil Conservation Service), Dona Ana County's croplands are in compliance with the Food Securities Act. The EPA PM10 Moderate Area SIP Guidance: Final Staff Work Product (April 1991) lists, as an available fugitive dust control measure, reliance "upon the soil conservation requirements... of the Food Security Act to reduce emissions from agriculture operations." Thus, the favored RACM for agricultural land is already in place. PM10 emissions from these areas are not considered significant.

As discussed in Appendix D, open burning (for weed control) is not commonly practiced in this area. However, New Mexico Air Quality Control Regulation (AQCR) 301 (Open Burning) is included as reference in Appendix G. AQCR 301 was most recently revised in February of 1983.

The federal Bureau of Land Management (BLM) leasing requirements are designed, in part, to minimize overgrazing. In fact, the average carrying capacity for allotments in the area is less than two animal units per (640 acre) section per year. However, the soil composition of regional rangelands are inherently susceptible to wind erosion, regardless of impacts from humans. Estimated potential PM10 emissions from rangelands, based on soil types and natural vegetation, are high, approximately 150 tons per acre per year, and apt to contribute significantly to windy day exceedances (Control of Open Fugitive

Dust Sources, EPA-450/3-88-008, September 1988). There are no range lands within the Anthony non-attainment area. However, approximately 86%, or 3350 square miles, of Dona Ana county are classified as range lands. This represents potential countywide emissions of 502,584 tons per year. Similar desert soils in Mexico, Arizona, Texas, California and other parts of New Mexico are also likely PM10 contributors during high wind seasons. Long range transport of PM10 is an established phenomenon. The State finds that these emissions, while significant, should not be considered anthropogenic.

C. Summary

The State finds all point and area sources of PM10 in or effecting the Anthony non-attainment area to be de minimis, with the exception of unpaved roads, unvegetated and sparsely vegetated areas, and range lands. Of these, the paving of roads is economically infeasible and enhancement of ground cover in the area or region is technologically infeasible. Emissions from range lands are considered non-anthropogenic. The State is aware of no additional reasonable or available control measures for anthropogenic sources of PM10 in the Anthony area.

III. Attainment Feasibility and Waivers

The State finds the attainment of the PM10 NAAQS in Anthony by the required deadline impracticable. Although the continuing efforts of County, State and Federal agencies have reduced dust levels within the area, the State is not confident that the implemented control strategies can prevent exceedances which are predominantly non-anthropogenic. As acknowledged by EPA in the establishment of the RFDA program and current waiver provisions, high winds, friable soils and low annual rainfall are not within regulatory control.

Under section 188(f) of the CAAA, the EPA Administrator may waive the attainment date if he or she determines that non-anthropogenic (natural) sources of PM10 contribute significantly to a violation of the PM10 NAAQS in the area. The State believes this to be the case in Anthony, as filter analyses have shown that the overwhelming contributor to PM10 violations is airborne soil. Although some of this soil may originate from unpaved roads, a significant portion arises from regional terrain which is sandy, dry and only partially vegetated.

The State understands that a waiver of the attainment date does not release it from full implementation of its moderate area SIP requirements. Despite significant economic hardship and onerous control costs, anthropogenic sources of PM10 are being controlled as rapidly as practicable.

IV. Conclusion

The State and County have been working steadily to reduce PM10 levels in Anthony. Existing roads are being paved as quickly as funding allows. Permitting regulations in both New Mexico and Texas are designed to prevent industrial source contributions to PM10 violations. Agricultural and range lands are being managed as recommended and required by Federal agencies.

These State, County and Federal efforts have been successful. Whereas in 1988, the first year of PM10 monitoring, seven exceedances were measured, in 1989 four were measured and in 1990 only one. No exceedances have been

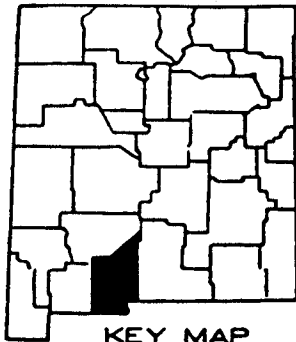
measured to date in 1991. Likewise, the annual arithmetic mean in 1990 was significantly lower than those measured previously.

However, the region continues to be dry and sparsely vegetated. Recent improvements in air quality may be the result of fortunate climactic. Dust storms and dust devils will continue to occur, especially in the Spring. Non-anthropogenic sources persist and will, at times, prevail. This was acknowledged in EPA's acceptance of Anthony as an RFDA.

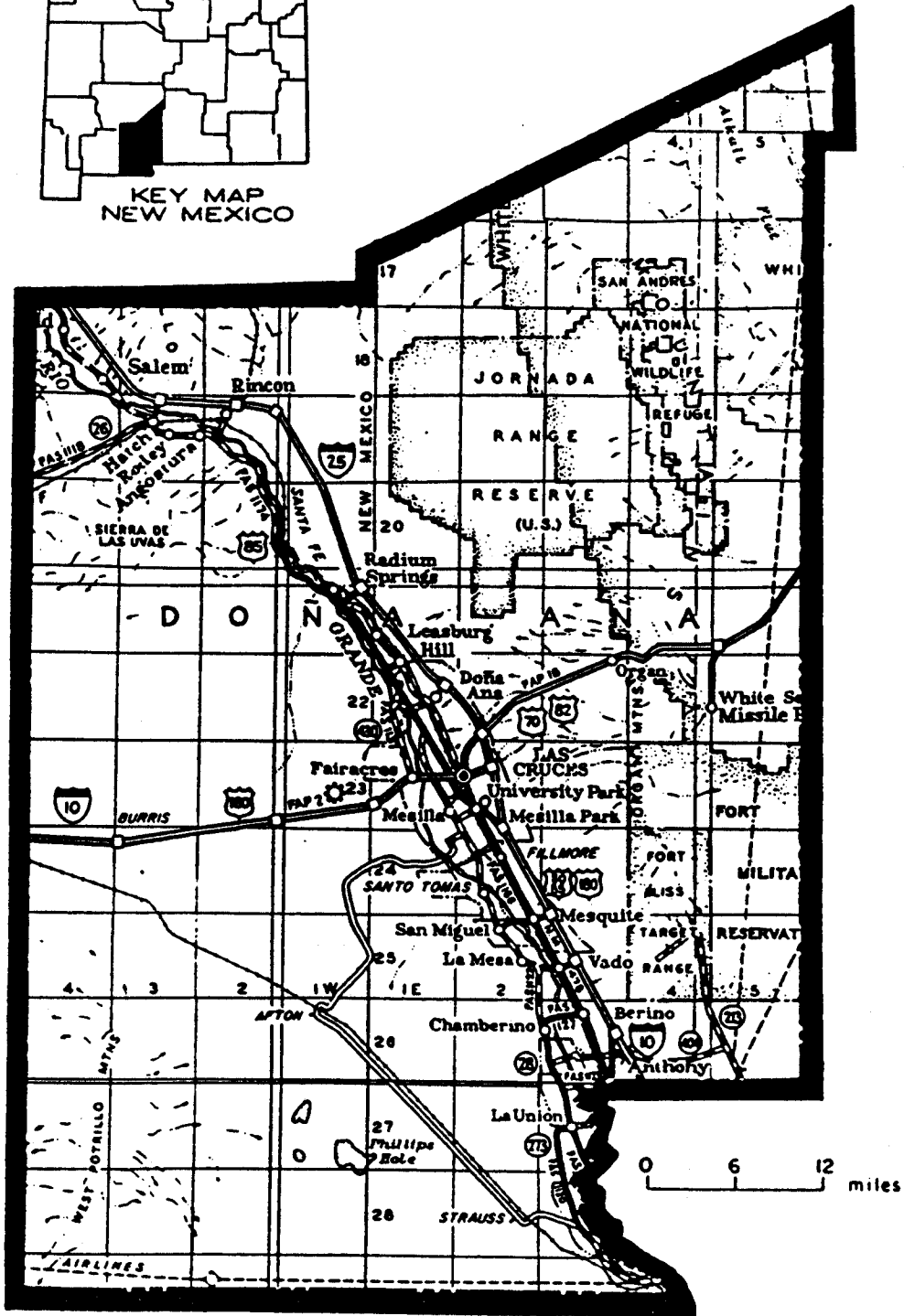
The State remains committed to the dust control measures implemented by Dona Ana County, moderate area control strategies as agreed to in this SIP submittal and to the established air quality monitoring schedule. However, the State is requesting a waiver of the moderate area attainment deadline of December 31, 1994. While efforts towards the mitigation of anthropogenic sources continue, recurring non-anthropogenic sources thwart ambitions of consistent attainment.

Appendices:

- A. Air Quality Data
- B. PM10 Exceedances at Anthony and Sunland Park, New Mexico
- C. Air Quality Dispersion Modeling Summary for Anthony PM10 SIP
- D. PM10 Contributions from Rural Land Soils and Open Burning
- E. Dona Ana County Soils Information from the Soil Conservation Service
- F. Soil Conservation Service Correspondence Regarding Food Security Act
- G. Air Quality Control Regulation 301



KEY MAP
NEW MEXICO



DOÑA ANA COUNTY

NOTE: ALL OF THIS COUNTY IS LOCATED
WITHIN THE RIO GRANDE BASIN

Figure 1

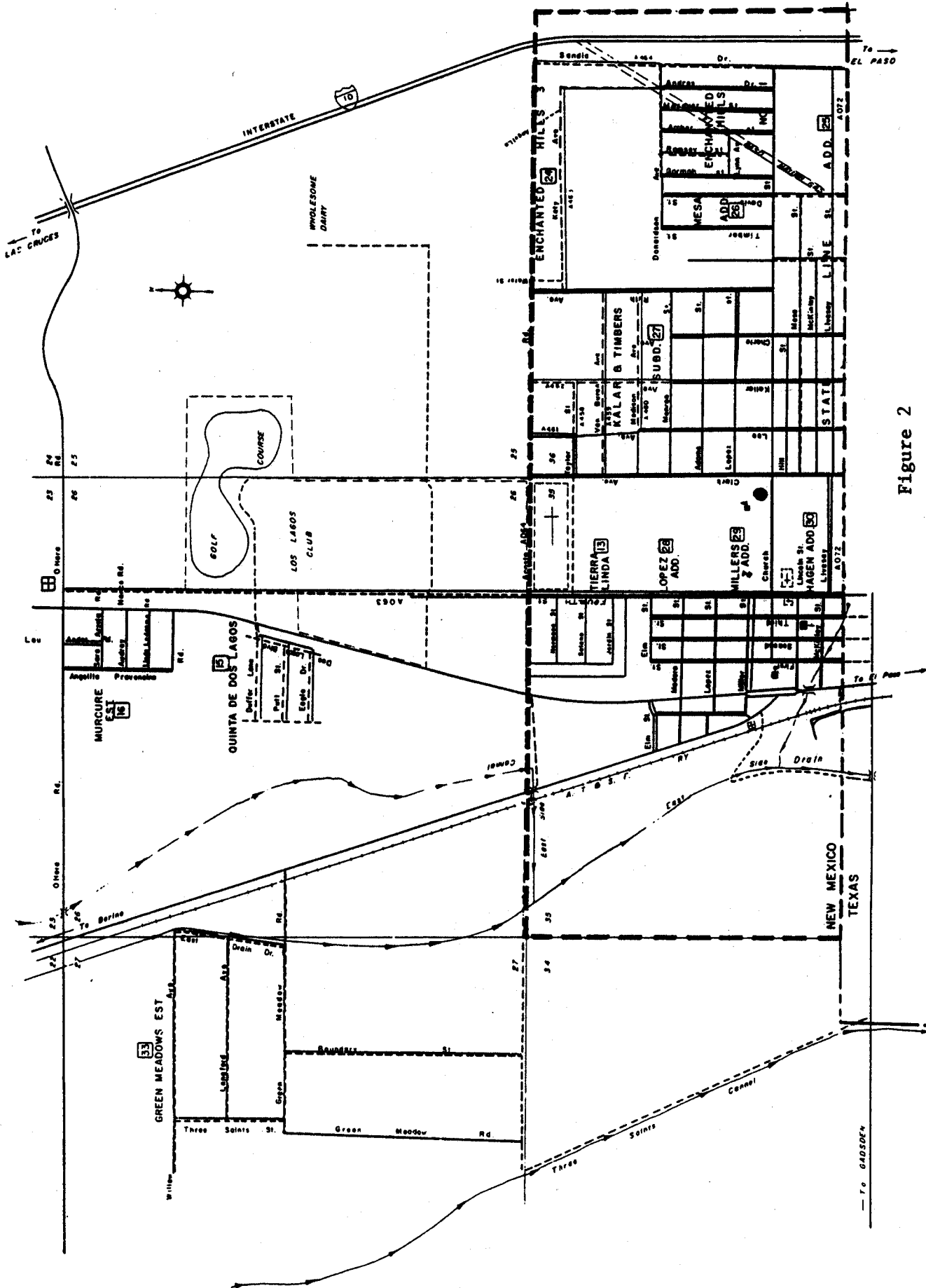


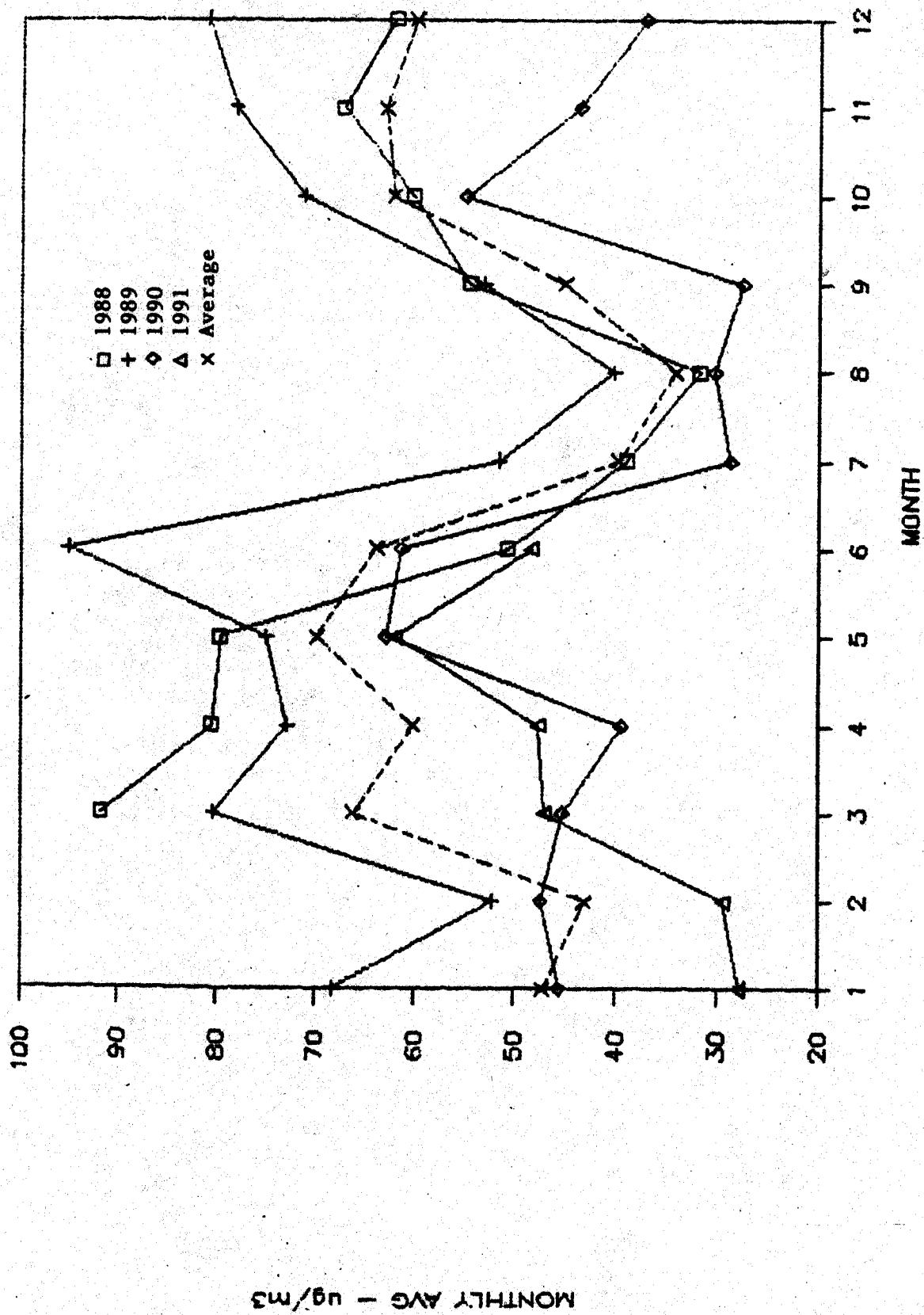
Figure 2

Anthony, New Mexico
 Dona Ana County Engineering Dept.
 1986

— Paved Roads
 - - - - Unpaved Roads
 - - - - Non-attainment Area ● - PM10 Monitoring Site
 Note: Fourth St. and Green Meadows Est have since been paved
 1 inch equals 1500 feet

Figure 3

PM-10 MONTHLY AVERAGES - ANTHONY, NM



Total Number Exceedances
in Each Month:

0 0 0 1 2 0 0 0 0 1 0 2

Table 1
PM10 Exceedances at Anthony, New Mexico

<u>24-Hour Average (Standard: 150 ug/m3)</u>		
<u>Date</u>	<u>Concentration (ug-PM10 /m3)</u>	<u>Remarks</u>
3/10/88	170	High wind day (1)
3/19/88	151	
3/28/88	227	
3/29/88	226	
4/21/88	223	High wind day (1)
5/01/88	154	High wind day (1)
12/31/88	173	
3/03/89	297	Flagged as exceptional event
6/13/89	202	High wind day (1)
10/27/89	176	
12/24/89	176	
5/19/90	198	Flagged as exceptional event
(No exceedances recorded in first 2 quarters of 1991)		
<hr/>		
(1) Requested to be flagged as an exceptional event		

<u>Annual Arithmetic Mean (Standard: 50 ug/m3)</u>	
<u>Year</u>	<u>Concentration (ug-PM10 /m3)</u>
1988	59
1989	68
1990	44 (2)
1991	44 (3)
<hr/>	
(2) In compliance with standard	
(3) First two quarters only	

Table 2
PM10 Emission Inventory
(Tons per Year)

Source	Area		Notes
	Dona Ana County	Anthony Non-Attainment Area	
<u>Point Sources</u>			
Joab Incin.	7.5	0	(1)
Ribble Asphalt	13.1	0	
El Paso Electric	46.0	0	
Santo Tomas Gin	1.4	0	(2)
Santo Tomas Short	1.4	0	(2)
Chamberino Coop	1.8	0	(2)
Mesa Farmer's Coop	0.9	0	(3)
<u>Area Sources</u>			
Unpaved Roads	N/A	36.7	(4) (5)
Paved Roads	N/A	0.7	(6)
Rangelands/Desert	502,584	0	(7)

Notes:

(1) Emission estimates derived from permit files and AIRS data base. Only sources in New Mexico are included in this table. Sources in both New Mexico and Texas are listed and modeled in Appendix C.

(2) Closed down as of January, 1991. While in operation, these cotton gins ran a maximum of 24 hours a day, 4 months per year (September 15 - January 15). Also closed in January was the Anthony Gin in Texas, just across the state line and near the southwest corner of the Anthony non-attainment area.

(3) Opened October 1991, to replace closed gins. Permitted to operate a maximum of 24 hours a day, 4 months per year (September 15 - January 15).

(4) Specific emission estimates regarding haul trucks, trash burning, wood burning, off-road vehicles and agricultural practices are not available but are expected to be minimal (see text).

(5) Calculated to be 36.74 tons/yr using AP-42 (Section 11.2.1) and CARB (Calif. Air Resources Board) factors, County estimates and observation:

Emission Factor, EF = $k (5.9) (s/12) (S/30) (W/3)^{0.7} (w/4)^{0.5} (d/365) \text{ lb/VMT}$

Where: k (particle multiplier) = 0.49 for PM-10 (from CARB)

s (silt) = 15% (AP-42)

S (speed) = 20 mph (observation)

W (weight) = 3 tons (AP-42, observation)

w (wheels) = 4 (observation)

d (dry days per year) = 305 (AP-42)

Emissions = (EF) (VMT per day) (m) (365 days/year) / (2000 lb/ton)

Where: EF = 2.013 lb/VMT (calculated above)

VMT (vehicle miles traveled) = 10/day (CARB for equivalent areas)

m (miles of unpaved roads) = 10 (County estimate)

(6) Calculated using AP-42 (Section 11.2.5) (which recommends a PM-10 emission factor of 0.018 lb/VMT for local streets) and above assumptions for 20 miles of paved roads: $(0.018)(10)(20)(365)/(2000) = 0.657 \text{ t/y}$

(7) Non-Anthropogenic Source

APPENDIX A

STATE: NEW MEXICO (32) AQDHS-II AIR QUALITY DATA REPORT
 DISPLAY N>9997

PAGE 178

AQCR: 153 AGENCY: STATE
 COUNTY: 0340 PROJECT: SOURCE-ORIENTED AMBIENT SURV.
 AREA: 0340 PARAMETER: PM10 TOTAL 0-10 MICRONS
 SITE: 016 UNITS: MICROGRAMS PER CUBIC METER
 6C/6CM ANTHONY ELEMENTARY SCHOOL
 PRIMARY
 FEDERAL STANDARD 150 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN
 COLLECTION METH: HIVOL SAS21A
 ANALYSIS METHOD: GRAVIMETRIC
 SAMPLING INTERVAL: DAILY
 SAROAD KEY: 32153034003400
 KEY-1: 3215303400340016F02888 KEY-2: 811025201
 SECONDARY
 YEAR: 1988
 MIN DET: 4
 UNITS CODE: 01
 KEY-3: 030100

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NO.	MEAN	MAX
01				20.2	153.5	68.8	24.4	31.3	19.0	60.4	85.7	34.5	5	65.04	153.5
02				47.8	82.3	44.5	38.0	26.7	30.6	67.0	53.0	80.7	5	44.08	68.8
03				81.2	83.7	85.5	28.1	23.2	59.2	88.1	96.1	34.0	5	64.78	82.3
04				83.7	75.7	68.7	15.8	27.7	90.7	34.7	117.2	109.3	5	52.76	83.7
05				60.4	77.4	68.7	15.8	27.7	90.7	34.7	117.2	109.3	5	57.88	96.1
06				79.1	77.4	68.7	15.8	27.7	90.7	34.7	117.2	109.3	5	68.0	88.1
07				74.3	77.4	68.7	15.8	27.7	90.7	34.7	117.2	109.3	5	81.18	117.2
08				61.1	50.1	42.7	42.7	64.6	76.6	16.4	38.4	15.4	6	52.28	90.7
09				138.9	50.1	58.9	58.9	64.6	76.6	16.4	38.4	15.4	6	61.05	138.9
10				112.4	90.2	169.5	169.5	29.3	76.6	16.4	68.8	38.5	5	81.30	169.5
11				85.0	90.2	45.5	34.9	29.3	24.6	57.5	68.8	38.5	5	61.38	90.2
12				91.7	101.5	50.1	41.5	37.4	66.1	51.4	53.5	67.9	6	49.35	91.7
13				104.4	101.5	50.1	41.5	37.4	66.1	51.4	53.5	67.9	6	65.55	104.4
14				60.3	103.3	36.1	31.7	39.3	46.0	37.2	78.2	34.8	5	53.88	66.1
15				99.8	103.3	36.1	31.7	39.3	46.0	37.2	78.2	34.8	5	70.85	103.3
16				114.5	50.3	50.7	29.0	20.3	7.4	76.1	66.2	32.1	6	53.10	114.5
17				38.8	50.3	50.7	29.0	20.3	7.4	76.1	66.2	32.1	6	37.43	66.2
18				72.9	58.5	44.8	44.8	29.3	49.8	71.9	37.2	34.1	6	47.22	76.1
19				150.7	58.5	44.8	44.8	29.3	49.8	71.9	37.2	34.1	6	60.70	150.7
20				94.6	50.7	50.7	29.0	29.3	49.8	71.9	37.2	34.1	6	65.28	94.6
21				74.2	50.7	50.4	56.1	34.4	33.7	37.2	123.8	66.4	5	91.74	233.0
22				63.7	56.1	67.2	78.3	23.0	77.3	73.0	123.8	66.4	5	48.22	63.7
23				90.8	56.1	67.2	78.3	23.0	77.3	73.0	123.8	66.4	5	67.15	123.8
24				66.9	111.8	32.9	50.0	35.4	82.7	68.1	53.7	131.9	6	72.54	178.3
25				108.3	111.8	32.9	50.0	35.4	82.7	68.1	53.7	131.9	6	82.55	131.9
26				74.0	85.7	26.3	41.2	22.2	68.4	58.3	19.1	34.1	5	61.54	82.7
27				109.4	85.7	26.3	41.2	22.2	68.4	58.3	19.1	34.1	5	62.72	109.4
28				226.6	66.2	39.6	43.5	10.9	85.8	105.6	49.6	64.5	6	84.16	226.6
29				225.8	66.2	39.6	43.5	10.9	85.8	105.6	49.6	64.5	6	72.38	225.8
30				85.7	59.1	39.6	43.5	51.7	85.8	105.6	49.6	64.5	5	72.04	105.6
31				77.0	59.1	39.6	43.5	51.7	85.8	105.6	49.6	64.5	4	90.18	172.9
NO	0	0	24	21	16	14	14	16	15	15	14	16	165		
MIN			91.75	80.46	79.53	50.79	38.86	31.67	54.53	60.19	67.18	62.01		64.12	
MX			226.6	233.0	153.5	85.5	78.3	64.6	90.7	105.6	123.8	172.9			233.0

STATE: NEW MEXICO (32)

AQDHS-II AIR QUALITY DATA REPORT

AQCR: 153 AGENCY: STATE
COUNTY: 0340 PROJECT: SOURCE-ORIENTED AMBIENT SURV.
AREA: 0340 PARAMETER: PM10 TOTAL 0-10 MICRONS
SITE: 016 UNITS: MICROGRAMS PER CUBIC METER
ANTHONY ELEMENTARY SCHOOL
ANTHONY
PRIMARY

DISPLAY N>9997 COLLECTION METH: H1VOL SA321B
ANALYSIS METHOD: GRAVIMETRIC
SAMPLING INTERVAL: DAILY
SAROAD KEY: 32153034003400
KEY-1: 3215303400340016F02889 KEY-2: 811026401
KEY-3: 010100 SECONDARY

YEAR: 1989

MIN DET: 4
UNITS CODE: 01

FEDERAL STANDARD 150 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN

DAY	MONTH												NO.	MEAN	MAX			
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC						
01																		
02	75.4	31.8	46.3	27.0	84.1	64.9	76.6	41.1	52.5							5	56.42	76.6
03	25.5	32.5	297.0	85.5	93.1	92.8	59.3	42.6	41.6	104.4						4	56.90	84.1
04		82.7	30.1	66.3	120.2	67.4	53.6	70.8	28.5	27.0						4	61.68	93.1
05	54.7	25.7	111.6	54.5	89.9	79.8	70.5	31.4	30.6	50.8						4	48.22	82.7
06	26.9	39.1	107.6	85.2	36.3	89.7	67.1	96.6	63.6	40.1						4	61.50	111.6
07	95.2	91.1	42.8	55.8	65.9	67.7	81.0	47.8	69.4	71.1						4	50.68	89.9
08	99.3	86.5	63.9	103.5	76.4	202.3	58.5	25.0	17.7							4	78.33	96.6
09	87.4	51.7	97.6	57.2	65.3	76.8	75.4	27.8	75.6							4	70.52	91.1
10	76.8	25.6	106.2	59.0	16.3	117.0	33.8	30.6	40.3							4	85.78	202.3
11	67.7	32.5	83.4	82.4	88.7	80.2	90.7	20.1								4	73.08	103.5
12	87.8	25.7	39.6	77.4	54.2	88.8	39.4	45.4	48.7							4	56.78	76.8
13	64.4	85.8	54.2	59.9	59.3	56.9	24.8	62.3	40.2							4	64.58	117.0
14	87.0	41.8	62.3	85.7	75.7	117.1	22.8	18.5	51.3							4	43.40	67.7
15	121.6	79.1	6.1	108.7	149.6	106.2	22.7	13.6	67.7							4	71.70	90.7
16	19.4		25.9	82.9	47.5	115.5	20.1	27.4								4	69.75	88.7
17	34.0		109.3				29.2		115.2							4	60.35	88.8
18																4	52.38	85.8
19																4	67.13	87.0
20																4	59.06	117.1
21																4	75.38	121.6
22																4	56.36	106.2
23																4	72.83	149.6
24																4	69.18	115.5
25																4	47.95	82.9
26																2	69.25	109.3
27																		
28																		
29																		
30																		
31																		
NO	15	14	16	15	15	15	16	15	14	5	0	0	0	0	0	140		
MN	68.21	52.26	80.24	72.73	74.83	94.87	51.59	40.07	53.06	58.68							65.27	
MX	121.6	91.1	297.0	108.7	149.6	202.3	90.7	96.6	115.2	104.4								297.0

STATE: NEW MEXICO (32)

AQCR: 153 AGENCY: STATE
COUNTY: 0340 PROJECT: SOURCE-ORIENTED AMBIENT SURV.
AREA: 0340 PARAMETER: PM10 TOTAL 0-10 MICRONS
SITE: 016 UNITS: MICROGRAMS PER CUBIC METER
6C ANTHONY ELEMENTARY SCHOOL

FEDERAL STANDARD 150 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN

AQDHS-II AIR QUALITY DATA REPORT

DISPLAY N>9997

COLLECTION METH: HIVOL WEDDING INLET
ANALYSIS METHOD: GRAVIMETRIC
SAMPLING INTERVAL: DAILY
SAROAD KEY: 32153034003400
KEY-1: 3215303400340016F02889 KEY-2: 811026201
SECONDARY

PAGE 175

YEAR: 1989

MIN DET: L 4
UNITS CODE: 01
KEY-3: 100100

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NO.	MEAN	MAX
01													0		
02											52.7	31.3	2	42.0	52.7
03											98.7	78.5	0		
04													0	88.60	98.7
05											73.8	86.0	0	79.90	86.0
06											86.8	85.8	0	86.30	86.8
07											132.0	134.7	0	133.4	134.7
08											96.5	67.9	0	82.20	96.5
09											83.1	89.1	1	96.10	83.1
10											107.7	91.0	2	86.10	107.7
11											43.5	49.5	1	64.0	43.5
12											75.3	108.3	2	99.35	75.3
13											63.3	73.3	1	62.40	63.3
14											88.2	176.1	2	64.90	88.2
15											61.8	91.9	1	46.50	61.8
16											81.0	31.9	2	64.90	81.0
17											25.5	17.4	2	176.0	25.5
18											100.5		1	56.45	100.5
19											10	15	40	50.10	10
20											77.22	80.85	1	21.45	77.22
21											176.0	176.1	1	108.5	176.0
22															
23															
24															
25															
26															
27															
28															
29															
30															
31															
NO	0	0	0	0	0	0	0	0	0	10	15	15	40		
MN										77.22	77.99	80.85		78.87	
MX										176.0	132.0	176.1			176.1

AGCF: 153 AGENCY: STATE
 COUNTY: 034 PROJECT: SOURCE-ORIENTED AMBIENT SURV.
 AREA: 0340 PARAMETER: PM10 TOTAL 0-10 MICRONS
 SITE: 146 UNITS: MICROGRAMS PER CUBIC METER
 6C ANTHONY ELEMENTARY SCHOOL ANTHONY

COLLECTION METH: FIVCL MEDDING INLET
 ANALYSIS METHODE: GRAVIMETRIC
 SAMPLING INTERVAL: DAILY
 SARCAD KEY: 3215203400340
 KEY-1: 321520340034016FQ2892
 KEY-2: 8110262L1
 SECONDARY

YEAR: 1982

MIN DET: 4
 UNITS CODES: 01
 KEY-3: 310111

FEDERAL STANDARD 15 UG/M3 (050) 24 HR AVERAGE (250) ANN ARI MEAN

MONTH

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	NC.	MEAN	MAX
01	50.4	43.0	48.4	28.5	93.0	73.5	25.3	31.0	39.2	19.4	64.9	70.0	6	55.0	93.0
02				20.1	15.8	77.0		38.3			24.9	18.7	6	43.68	73.9
03				38.7	33.3	95.7			20.9	28.1			5	43.34	95.7
04	18.1			40.0	23.8			18.3				60.5	5	33.14	60.5
05	42.1	55.2	11.0				37.2	12.2	23.1	47.2	71.5	34.7	5	53.32	117.9
06				36.2	40.2	42.5							7	41.20	84.7
07				35.0	43.1	52.7	22.6	29.8	17.2	36.7	50.0	121.7	6	35.87	63.1
08	84.6			35.2	44.5				24.7	58.7			6	61.63	121.7
09	74.8			35.5	72.7	34.1	26.7	43.2			47.2	47.8	6	52.60	74.8
10				46.3	18.7		15.7		37.6	57.0	41.7	21.7	6	33.53	57.0
11	72.6			70.9	12.0	34.4	25.7	17.9	34.2	46.7	63.7	12.8	6	38.97	79.5
12	63.9			61.7	71.4	47.6	26.4	17.3	25.3	51.7			6	48.47	71.4
13	39.8			55.4	52.7			28.1			48.2	0.3	6	26.15	51.7
14				59.2	82.0	5.6	31.0		37.7	69.3			6	40.75	68.2
15	20.6			14.9	52.1	72.7	35.8	35.0	26.8	37.9	40.3	11.5	6	55.12	82.0
16	16.7			43.0	54.5	146.3	27.1	15.6			27.5	19.4	6	61.53	197.7
17				92.8	42.1	79.2	35.3	24.1	14.0	74.7			6	40.38	72.7
18				6.5	33.4	44.1		44.6	26.3	77.5	27.5	19.4	6	20.58	77.5
19	39.9			32.7	63.3	56.2	24.3	46.7	38.6	92.5	42.1	0.1	6	59.93	146.3
20	51.5			68.8	61.0	34.3	15.3	37.0	32.3	47.2			6	28.92	47.0
21								43.7	13.1	101.6			6	57.87	92.8
22	14	14	14	15	15	16	16				31.2	38.4	6	35.50	46.3
23	45.53	47.43	45.24	35.41	62.81	61.24	28.55	30.23	27.39	54.95	43.51	37.01	6	51.62	92.5
24	84.6	97.8	117.9	68.8	157.7	146.3	30.3	66.7	39.2	101.6	60.3	121.7	5	33.45	56.2
25													4	44.74	68.8
26													2	41.05	101.6
27													2	29.45	43.7
28															
29															
30															
31															
NO	14	14	14	15	15	16	16	16	15	15	14	15	177		
PN	45.53	47.43	45.24	35.41	62.81	61.24	28.55	30.23	27.39	54.95	43.51	37.01		43.68	
MX	84.6	97.8	117.9	68.8	157.7	146.3	30.3	66.7	39.2	101.6	60.3	121.7			197.7

STATE: NEW MEXICO (32) AODHS-II AIR QUALITY DATA REPORT PAGE 102
 AOCR: 153 AGENCY: STATE AGRICULTURE COLLECTOR METH: HIVAL WEDDING INLET
 COUNTY: 0340 PROJECT: SOURCE-ORIENTED AMBIENT SURV. ANALYSIS METHOD: GRAVIMETRIC
 AREA: 0340 PARAMETER: PM10 TOTAL 0-10 MICRONS SAMPLING INTERVAL: DAILY
 SITE: 016 UNITS: MICROGRAMS PER CUBIC METER SAROAD KEY: 32153034003400
 6C ANTHONY ELEMENTARY SCHOOL ANTHONY PRIMARY KEY-1: 321530340016F02891 KEY-2: 811026201
 FEDERAL STANDARD 150 UG/M3 (25C) 24 HR AV 50 UG/M3 (25C) ANN ARI MEAN SECONDARY
 MIN DET: 4
 UNITS CODE: 01
 KEY-3: 010100

DAY	MONTH												NO.	MEAN	MAX		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC					
01						45.7									3	30.47	45.7
02	48.2	18.7	27.0	33.4	105.9	48.6									3	62.50	105.9
03	39.9	16.3	29.4	89.8	38.5	54.7									3	31.43	48.6
04		43.1	25.7	34.1	70.4	55.1									3	56.07	89.8
05	13.2		56.0	35.6	53.7	21.5									3	41.17	54.7
06	17.5		32.3	55.7	66.4	28.6									2	39.23	70.4
07		51.9	21.4	33.9	58.0	29.3									3	55.55	56.0
08	13.7	12.8	17.8	34.3	83.2	46.4									3	35.23	53.7
09	49.7	27.6	46.5	47.1	34.8	51.2									4	39.30	66.4
10	28.7	14.3	39.9	34.4	79.3	58.2									3	47.20	58.0
11	50.0	13.3	131.3	54.1	98.8	60.1									3	31.20	46.5
12		27.0	18.6	31.5	27.7	56.0									3	48.73	83.2
13	13.1	50.1	69.3	41.6	46.7	76.6									3	41.63	50.9
14	14.4	27.0	18.6	54.5	53.7	47.0									3	35.13	51.2
15	26.9	53.4	58.7	81.3	49.8	46.3									3	42.27	79.3
16	22.5	42.8	22.0	54.0	61.5	15									3	67.60	131.3
17	31.1		24.0	54.0	61.5	15									3	55.77	98.8
18	26.8		24.0	81.3	49.8	15									3	35.23	60.1
19	20.9		38.5	54.0	61.5	15									3	28.70	31.5
20		14	16	15	15	15									3	58.47	69.3
21	27.77	29.32	47.04	47.69	61.89	48.35									3	36.93	46.7
22	50.0	53.4	58.7	81.3	49.8	46.3									3	62.93	76.6
23		42.8	22.0	54.0	61.5	15									3	46.43	54.5
24			24.0	81.3	49.8	46.3									3	37.27	47.0
25			38.5	54.0	61.5	15									3	52.63	81.3
26				54.0	61.5	15									2	35.15	46.3
27				54.0	61.5	15									3	45.47	61.5
28				54.0	61.5	15									1	38.50	38.5
29				54.0	61.5	15											
30				54.0	61.5	15											
31				54.0	61.5	15											
NO				15	15	15									90		
MN				29.32	47.04	47.69	61.89	48.35								43.87	
MX				53.4	131.3	89.8	105.9	76.6								131.3	

APPENDIX B

PM₁₀ Exceedances at Anthony and Sunland Park, New Mexico

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2. Description of Sites
3. Data Analysis
 - a. Overview
 - b. Elemental Distributions
 - c. Crustal Fraction of PM₁₀ Deposits
 - d. Meteorological/PM₁₀ Correlations
4. Summary

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- BA: XRF Analyses of PM₁₀ Samples
- BB: XRF Analyses of Anthony Soil Samples
- BC: XRF Analyses of Sunland Park Soil Samples

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2. PM_{10} exceedances and La Union wind speeds
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4. Elemental mass fractions, Sunland Park soil
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6. Precision of elemental determinations by XRF

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1. Problem Statement.

Exceedances of the federal PM₁₀ standard have been recorded at two monitoring sites operated by the New Mexico Air Quality Bureau. Both sites are in Dona Ana County close to the Texas border and within about fifteen miles of the El Paso/Ciudad Juarez metropolitan area. PM₁₀ sampling was begun at Anthony in March, 1988 on an alternate-day schedule, and alternate-day sampling was begun at Sunland Park in February, 1989. Sampling frequency at Sunland Park was increased to daily in July, 1989.

Through June, 1991, the following PM₁₀ exceedances have occurred at these two sites:

TABLE 1

	AIRS #	DATE	PM ₁₀ CONC. ug/m ³ (STP)
ANTHONY	35-013-0016	3/10/88	170
		3/19/88	151
		3/28/88	227
		3/29/88	226
		4/21/88	233
		5/1/88	154
		12/31/88	173
		3/03/89	297
		6/13/89	202
		10/27/89	176
		12/24/89	176
5/19/90	198		
SUNLAND PARK	35-013-0017	3/03/89	169
		11/23/89	221
		4/24/90	169
		5/19/90	177
		3/26/91	161

2. Description of the Area.

Both Sunland Park and Anthony are in the Rio Grande valley just north of a narrow gap between two mountain ridges (Figure 1). South and east of the gap lie El Paso on the north side of the river and Juarez on the south side. To the north of the gap the valley spreads out into a 5-km wide, shallow agricultural strip. Chief crops are cotton, alfalfa, pecans, asparagus and other table vegetables. Commercial milk production is currently growing rapidly in this area. Agricultural practices that might create airborne particles are plowing (mainly in the spring), burning of irrigation ditches to

rid them of unwanted vegetation, especially wind-blown tumbleweed, and activities associated with milk production (see Figures 2, 3, and 4).

In addition to agriculture, there is some industry in the valley, especially close to the gap separating Sunland Park from El Paso. The most visible industry is the Asarco smelter right in the gap, on the El Paso side. In addition, there are concrete and brick factories (Figure 5) in the gap, an oil/gas fired power plant operated by El Paso Electric Company (Figure 6) about a quarter mile from the Sunland Park site, a steel mill (Figure 7) about three miles from Anthony in Vinton, Texas, and numerous other small factories and shops.

The community of Anthony spans the border between Texas and New Mexico. It is a small community (combined NM and TX 1990 population = 8488) on the unirrigated shelf just to the east of the agricultural strip along the river. It lies on the old road connecting Las Cruces and El Paso. There is still heavy local traffic on this road, but through traffic and commuters now use Interstate 10 which skirts the eastern edge of Anthony.

The Anthony monitoring site (Figure 8) is located at the corner of Church and Clark Streets, in the parking lot of Dona Ana Community College. The parking lot, approximate area 22,000 sq. ft., is paved although the pavement is covered with a layer of loose soil that is an inch or more deep in places. Vehicle tire tracks are visible in the soil covering (Figure 9). Three Wedding PM_{10} monitors are installed on a sturdy wooden platform which is about five feet above ground level (Figure 10). The wooden platform is enclosed in an area of about 400 sq. ft. by a chain-link fence. There are vacant lots to the east and southwest of the site. Two churches are located on Church Street which is paved. No ambient air constituents other than PM_{10} are monitored at Anthony.

The Sunland Park monitoring site lies about 100 yards to the north of New Mexico route 273, which is the major road on the southern and western periphery of the agricultural strip. It carries mostly local traffic, except for traffic to the Sunland Park Raceway and truck traffic to a landfill and incinerator on the west mesa. The monitoring site is next to a sewage treatment plant where sludge appears to be always damp and not a source of particulates (Figure 11). Sulfur dioxide and lead are also monitored at this site because of the presence of the Asarco smelter about 3 km to the southeast (Figure 12).

The annual rainfall in the area is less than 10 inches per year. The long term average for nearby Las Cruces, for example, is 8.7 inches per year.

3. Data analysis.

3a. Overview. There is no meteorological tower at the Anthony site and the one at Sunland Park was established only in May of 1990. Thus, except for 5/19/90 and 3/26/91, no meteorological data were recorded at either site on exceedance days. The nearest meteorological tower in the New Mexico monitoring network is located at La Union, which is approximately 17 km northwest of Sunland Park and 11 km southwest of Anthony (Figure 1). Table 2 gives the maximum hourly

windspeeds and maximum gusts recorded at La Union on exceedance days. Simultaneous PM₁₀ concentrations from selected El Paso sites are included for comparison.

TABLE 2

ANTHONY AND SUNLAND PARK PM₁₀ EXCEEDANCES

DATE	PM ₁₀ (ug/m3)		LA UNION		PM ₁₀ FROM EL PASO SITES (ug/m3)		DAY OF WEEK
	ANTHONY 350130016	SUNLAND 350130017	MAX HR WIND SPEED (mph)	MAX GUST (mph)	2G 481410002	41F 481410041	
3/10/88	170		20.8	40.7	177		TH
3/19/88	151		5.8	14.5	86		SA
3/28/88	227		1.1	17.9	85		M
3/29/88	226		15.2	29.8			TU
4/21/88	233		21.9	45.9	263		TH
5/1/88	154		13.3	41.4	136		SU
12/31/88	173		4.5	10.1	105		SA
3/03/89	297	169	31.2	NA	272	412	F
6/13/89	202	71	19.1	50.5	61	67	TU
10/27/89	176		9.0	NA	109	93	F
11/23/89		221	9.2	20.3			TH
12/24/89	176	126	4.4	8.1	126	161	SU
4/24/90		169	34.7	NA	129		TU
5/19/90	198	177	31.7(27.9)	NA		165	SA
3/26/91		161	(32)	(>56)			TU

(Wind speeds in parentheses are from Sunland Park.)

The most striking fact that emerges from this table is that some -- but not all -- of the exceedances are correlated with high winds as measured at La Union. A high wind may be considered to be an hourly average wind speed greater than 30 mph or a gust greater than 40 mph. These are the criteria used to define an exceptional wind event in Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (EPA-450/4-86-007). A reasonable hypothesis to draw from Table 2 is that exceedances on the following dates were caused by wind-entrainment of loose soil:

3/10/88
4/21/88
5/01/88
3/03/89
6/13/89
4/24/90
5/19/90
3/26/91

Of the other seven (low-wind) exceedance days high PM_{10} concentrations appear to have been regional on 12/24/89 and possibly on 12/31/88 as well. The time of year of these two exceedances suggests the trapping of locally generated particulates by an atmospheric inversion. Another possible explanation is traffic-caused dust connected with church activities on these holidays. There are two churches on Church Street close to the monitoring site, one at the corner of 4th and Church and the other at the corner of Lee and Church (see Figure 8).

3.b Elemental Distributions. To aid in the identification of the source of air particulates in Anthony and Sunland Park, 28 exposed PM_{10} filters and soil samples were submitted to Nuclear Environmental Associates of Tigard, Oregon, for elemental analysis by x-ray fluorescence. (See Appendix BA for details.) All 1989 exceedance filters were analyzed, along with other filters exhibiting a wide range of loadings from Anthony (6C), Sunland Park (6ZG) and Las Cruces (6R). Seven soil samples from the Anthony site and seven samples from Sunland Park were also submitted for analysis. These soil samples were taken from the loose crust at distances on the order of 100 m from the PM_{10} samplers. (More detail is given in Appendices BB and BC.)

If the hypothesis of section 3.a is correct, then the three 1989 exceedance filters from high-wind days (3/03/89 and 6/13/89) should exhibit elemental distributions similar to the corresponding soil patterns. Figures 13 through 17 show that this is indeed the case.

In these figures elemental distributions in mass percent have been plotted on a logarithmic scale where total mass is the sum of all elements included in the analysis, not total mass collected. This mode of display makes it possible to span a broad range of concentrations, but has the drawback of overemphasizing the relative abundance of elements in low concentrations. Disregarding aluminum, sulfur and copper, the only elements in these figures with a relative mass greater than 1% are the crustal elements K, Ca, Ti, and Fe, which exhibit roughly the same pattern in both air and soil samples. This tends to confirm the hypothesis of soil as the major source of PM_{10} matter on windy days.

The justification for disregarding aluminum is the very high uncertainty entailed in its measurement by x-ray fluorescence. (This can be seen by perusal of the laboratory data of Appendix BA. The estimated uncertainties associated with aluminum are an order of magnitude greater than for other elements.) Copper should be ignored because of its very high representation in control samples of Anthony soil possibly because of contamination from brass beads used to break up the soil and suspend it in air during analysis (Appendix BB). Sulfur warrants special consideration, because it is a constituent of Sunland Park soil, but not Anthony soil. This is not unexpected, since the Sunland Park PM_{10} site is close to the Asarco copper smelter, the biggest source of air-borne sulfur in the region. Note that the composite Sunland Park soil sample shows not only a greater relative abundance of sulfur but also of As, Cd, Sb and Pb, which are commonly emitted by copper smelters. Of the six potentially toxic elements As, Cd, Sb, Se, Hg, and Pb, only Pb at an average of 0.04 mass percent was above the level of 0.005 mass percent in the Anthony fine soil fraction. The corresponding averages for Sunland Park were: 0.01 for

As, Cd, Sb; 0.07 for Pb; and less than 0.005 for Se and Hg. The role of sulfur is dicussed more fully in section 3.c below.

Note that two major crustal elements do not appear on any of the graphs, namely oxygen and silicon. The former because it is not detected by x-ray fluorensence and silicon because it is a major constituent of the quartz filters used to collect the PM_{10} particles and therefore interferes with the measurement of small amounts of silicon in particulate matter deposited on the filters.

The seven soil samples from each site were suspended in air and divided into fractions greater and smaller than about 2.5 microns using dichotomous samplers. The fine fraction distributions have been used in Figures 14 and 17 because the fine fractions are thought to be more like PM_{10} in size. (The coarse and fine fractions are similar chemically, so conclusions do not depend on this choice.) The fine soil distributions shown are averages of the seven separate soil distributions in the interest of simplicity. The variation among the individual soil distributions is small (on the order of 10%) for major elements, and the averages can be considered quite representative, as is demonstrated in section 3.c.

Available exceedance PM_{10} elemental distributions for low-wind days are compared with soil distributions in Figures 18, 19, and 20, where, for ease of comparison, both distributions have been plotted together. What is striking in all these figures is the similarity in the patterns of the elements characteristic of the local soil, namely K, Ca, Ti, and Fe. This suggests soil as the major source of particulates even when the air at La Union was comparatively still.

Figures 21 and 22 offer an explanation. These photos were taken toward the west on Church Street in Anthony within 50 feet of the PM_{10} monitoring site on a day (3/14/91) when the maximum hourly wind speed at La Union was 25 mph, below the criterion for an exceptional event as defined above. The dust blowing across the street appears to be a very localized disturbance not caused by vehicular traffic in this case, although there is so much loose dirt and sand on the street that it is conceivable that it could easily become airborne during heavy traffic.

Piles of wind-blown soil collected along fences to the east and south of the Anthony site can be seen in Figures 23 and 24. Figure 25 shows tire tracks in the silt on the paved Anthony parking lot. In order to enter the monitoring compound at this site, operators must occasionally first remove silt and sand piled against the gate. The nature of the unvegetated soil at Sunland Park can be seen in Figure 12. The looseness of the soil at the Sunland Park site is evident in Figure 26.

3.c Crustal Fraction of PM_{10} Deposits. Soil appears to be the major component of PM_{10} at Anthony and Sunland Park on high-wind days, and possibly on low-wind days as well. The contribution of crustal material to each of the PM_{10} deposits analyzed by x-ray fluorensence can be calculated if we assume that certain elements in the PM_{10} deposits come only from soil. Looking at Tables 3 and 4, it is clear that soil tracer condidates are Al, Si, K, Ca, Ti, and Fe,

these being the major components of soil from both Anthony and Sunland Park. Silicon cannot be used, because of its presence in quartz filters. Potassium is not a good choice, because it is a component of organic matter often used as a tracer for woodsmoke, and the uncertainty in the aluminum determinations is comparatively high. That leaves Ca, Ti, and Fe. There is no clear choice among these three based upon the data of Tables 3 and 4. Calcium is more abundant than iron or titanium, but the variability of titanium among the seven soil samples is less at Sunland Park and the variability of iron is less for Anthony soil samples. Since there is no clear choice, the fraction of soil in PM_{10} has been computed all three ways for all 25 analyzed PM_{10} deposits from Anthony and Sunland Park. Using three different elements as a tracer can be useful in detecting an error in the underlying assumption, namely that Ca, Ti and Fe in the PM_{10} deposits do in fact come only from soil.

The process here is very simple. From the average mass fraction found for Ca, Ti and Fe in the crustal samples, the crustal mass in PM_{10} deposits can be calculated if the Ca, Ti and Fe in the PM_{10} deposits come only from soil. The results are presented in Table 5 where the crustal contribution to total PM_{10} has been calculated using the appropriate averaged soil mass fractions for Ca, Ti and Fe. In all cases the calculated crustal fraction is on the order of 1 or less, which is consistent with the assumption that Ca, Ti and Fe are indeed satisfactory crustal tracers. For Anthony titanium gives the highest crustal fractions for the most part (column L), and for Sunland Park iron does (column M). This may reflect biases in XRF determinations, or it may be that there is another source of Ti in Anthony and another source of Fe in Sunland Park. Simply averaging the three results (column N) shows clearly a division between high and low PM_{10} loadings with respect to crustal contributions.

For high ($>75 \text{ ug/m}^3$) PM_{10} loadings the averaged crustal contribution is on the order of 65% for both Anthony and Sunland Park. For low ($<20 \text{ ug/m}^3$) PM_{10} loadings the crustal contribution is considerably less, on the order of 30-40%. Presumably the representation of background aerosol is higher in low PM_{10} loadings. This is reinforced -- since the background PM_{10} aerosol is high in sulfate -- by the observation that the fractional contribution of sulfur (column O) in the low PM_{10} loadings is much higher than in the high loadings for both Anthony and Sunland Park. The sulfur mass fraction at Sunland Park is also consistently higher than at Anthony, as would be expected from its proximity to the Asarco smelter.

Of special interest in Table 5 is the fact that there is no clear division of computed crustal fraction between high- and low-wind days. Of the 10 Anthony filters with loading $>75 \text{ ug/m}^3$, the average crustal fraction of the four filters corresponding to wind speeds greater than 15 mph is 70%, whereas those corresponding to lower wind speeds is 60%, not an overwhelming difference. Of the seven Sunland Park filters with loadings $>75 \text{ ug/m}^3$ the same breakdown is 70% versus 68%, a negligible difference. This may simply mean that winds recorded at La Union are not representative of winds at Anthony and Sunland Park.

The last column of Table 5 has been included to find out whether there is any K enrichment in any of the samples. There is none obvious, suggesting no major contribution from wood or agricultural burning.

TABLE 3

XRF RESULTS

ANTHONY SOIL, FINE FRACTION

ELEMENT MASS AS PERCENT OF TOTAL DEPOSIT

	T03	T05	T07	T09	T11	T13	T15	AVG	STD	STD/AVG*100
AL	3.168	3.752	3.168	9.344	5.976	8.347	3.947	5.39	2.56	47.6
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
CL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
K	2.235	2.068	1.659	2.073	1.850	2.152	2.122	2.02	0.20	9.9
CA	26.287	23.183	15.997	20.320	17.698	19.162	20.498	20.45	3.43	16.8
TI	0.286	0.231	0.203	0.151	0.224	0.198	0.263	0.22	0.04	20.0
V	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.00	0.00	264.6
CR	0.008	0.007	0.018	0.007	0.007	0.005	0.004	0.01	0.00	56.0
MN	0.108	0.126	0.084	0.026	0.085	0.059	0.097	0.08	0.03	39.3
FE	2.978	2.683	2.523	2.401	2.818	2.759	3.046	2.74	0.23	8.4
NI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
CU	4.917	3.442	1.286	2.028	1.274	0.431	0.379	1.97	1.67	84.9
ZN	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.00	0.01	259.9
GA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
AS	0.000	0.000	0.000	0.000	0.001	0.000	0.005	0.00	0.00	224.5
SE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.00	0.00	254.8
BR	0.000	0.001	0.000	0.000	0.000	0.000	0.003	0.00	0.00	147.9
RB	0.005	0.007	0.013	0.009	0.014	0.010	0.003	0.01	0.00	47.7
SR	0.104	0.078	0.065	0.061	0.073	0.059	0.071	0.07	0.02	20.8
Y	0.000	0.000	0.000	0.001	0.001	0.000	0.003	0.00	0.00	142.3
ZR	0.014	0.011	0.009	0.004	0.010	0.005	0.002	0.01	0.00	56.1
MO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
PD	0.012	0.000	0.000	0.000	0.000	0.001	0.002	0.00	0.00	212.9
AG	0.052	0.000	0.000	0.006	0.005	0.014	0.000	0.01	0.02	170.9
CD	0.014	0.000	0.000	0.007	0.005	0.008	0.000	0.00	0.01	110.9
IN	0.031	0.000	0.012	0.000	0.000	0.000	0.000	0.01	0.01	193.1
SN	0.414	0.288	0.053	0.141	0.105	0.036	0.018	0.15	0.15	98.0
SB	0.000	0.018	0.000	0.000	0.000	0.003	0.000	0.00	0.01	229.4
BA	0.000	0.000	0.000	0.023	0.023	0.033	0.000	0.01	0.01	128.2
LA	0.000	0.000	0.000	0.000	0.000	0.057	0.000	0.01	0.02	264.6
HG	0.000	0.000	0.000	0.002	0.000	0.000	0.003	0.00	0.00	159.9
PB	0.100	0.098	0.037	0.020	0.027	0.023	0.005	0.04	0.04	87.7

TABLE 4

XRF RESULTS

SUNLAND PARK SOIL, FINE FRACTION

ELEMENT MASS AS PERCENT OF TOTAL DEPOSIT

	1F	2F	3F	4F	5F	6F	7F	AVG	STD	STD/AVG*100
AL	6.355	4.584	4.950	11.003	6.815	6.932	5.511	6.59	2.14	32.5
SI	18.446	19.273	20.946	13.586	14.787	19.731	19.042	17.97	2.72	15.1
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
S	0.193	0.088	0.051	0.061	0.180	0.000	0.164	0.11	0.07	70.3
CL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
K	2.391	2.527	2.509	1.896	1.925	2.420	2.928	2.37	0.36	15.2
CA	8.700	11.235	8.008	5.976	7.251	10.373	10.272	8.83	1.90	21.5
TI	0.418	0.444	0.467	0.361	0.382	0.435	0.408	0.42	0.04	8.8
V	0.010	0.002	0.008	0.000	0.003	0.004	0.009	0.01	0.00	70.3
CR	0.023	0.050	0.026	0.156	0.073	0.044	0.110	0.07	0.05	70.8
MN	0.113	0.082	0.122	0.104	0.092	0.087	0.083	0.10	0.02	16.1
FE	3.306	3.351	3.700	2.960	2.554	3.064	3.120	3.15	0.36	11.3
NI	0.001	0.012	0.000	0.053	0.022	0.011	0.037	0.02	0.02	100.8
CU	0.057	0.053	0.068	0.153	0.112	0.046	0.061	0.08	0.04	50.0
ZN	0.075	0.052	0.138	0.091	0.069	0.042	0.045	0.07	0.03	46.1
GA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
GE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
AS	0.010	0.013	0.008	0.018	0.017	0.006	0.009	0.01	0.00	40.6
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
BR	0.000	0.001	0.001	0.001	0.000	0.000	0.000	0.00	0.00	127.8
RB	0.006	0.008	0.007	0.000	0.002	0.006	0.004	0.00	0.00	61.3
SR	0.052	0.061	0.044	0.032	0.028	0.038	0.074	0.05	0.02	34.8
Y	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.00	0.00	118.6
ZR	0.012	0.015	0.014	0.011	0.018	0.017	0.013	0.01	0.00	17.3
MO	0.000	0.005	0.000	0.021	0.003	0.004	0.006	0.01	0.01	127.3
PD	0.000	0.000	0.006	0.000	0.000	0.000	0.017	0.00	0.01	195.7
AG	0.000	0.000	0.008	0.003	0.008	0.000	0.010	0.00	0.00	104.8
CD	0.010	0.000	0.004	0.028	0.002	0.020	0.027	0.01	0.01	91.5
IN	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.00	0.00	264.6
SN	0.000	0.000	0.009	0.000	0.001	0.000	0.000	0.00	0.00	247.9
SB	0.000	0.000	0.003	0.049	0.000	0.000	0.000	0.01	0.02	247.6
BA	0.000	0.000	0.000	0.000	0.000	0.031	0.171	0.03	0.06	221.2
LA	0.000	0.084	0.000	0.000	0.241	0.113	0.045	0.07	0.09	127.6
HG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	ERR
PB	0.087	0.040	0.123	0.063	0.066	0.024	0.069	0.07	0.03	47.6

TABLE 5

CALCULATION OF CRUSTAL FRACTION IN PM10*

A	B	C	D	E	F	G	H	I	K	L	M	N	O	P
SITE	DATE	PM10 ug/m3	LA UNION MAX HR AVG WIND	S ug/m3	K ug/m3	CA ug/m3	TI ug/m3	FE ug/m3	CRUSTAL FRACTION FROM AVERAGE				S/PM10 %	K/PM10 %
			SPEED mph						CA %	TI %	FE %	%		
ANTHONY	3-03-89	297	31.2	0.338	3.393	18.394	0.531	6.020	30	81	74	62	0.11	1.14
ANTHONY	6-13-89	202	19.1	0.266	2.563	18.111	0.365	4.490	44	82	81	69	0.13	1.27
ANTHONY	12-24-89	176	4.4	1.267	1.836	13.881	0.219	2.632	39	56	55	50	0.72	1.04
ANTHONY	10-27-89	176	9	0.384	1.299	9.449	0.195	2.065	26	50	43	40	0.22	0.74
ANTHONY	5-28-89	150	20.0	0.394	1.893	12.293	0.307	3.385	40	93	82	72	0.26	1.26
ANTHONY	3-06-90	111	24.3	0.095	1.470	7.687	0.265	2.723	34	108	90	77	0.09	1.32
ANTHONY	10-3-89	104	5.8	0.705	1.397	9.968	0.000	2.553	47		90	68	0.68	1.34
ANTHONY	5-08-89	90	8.6	0.189	1.175	9.196	0.179	1.997	50	90	81	74	0.21	1.31
ANTHONY	12-14-89	89	11.7	0.251	0.910	6.865	0.140	1.569	38	72	64	58	0.28	1.02
ANTHONY	9-15-89	76	5.6	0.401	0.581	7.317	0.139	1.278	47	83	61	64	0.53	0.76
ANTHONY	12-30-89	17	6.3	0.069	0.202	0.364	0.000	0.178	10		38	24	0.40	1.19
ANTHONY	8-28-89	14	6.3	0.204	0.000	0.049	0.009	0.162	2	31	42	25	1.46	0.00
ANTHONY	3-14-90	13	18.5	0.113	0.000	0.445	0.022	0.222	17	75	62	51	0.87	0.00
ANTHONY	2-28-90	11	11.7	0.080	0.103	0.462	0.000	0.103	21		34	27	0.73	0.93
SUNLAND	11-23-89	221	9.2	0.474	3.368	7.667	0.632	7.167	39	68	103	70	0.21	1.52
SUNLAND	3-03-89	169	32.1	0.767	2.723	6.920	0.468	4.697	46	66	88	67	0.45	1.61
SUNLAND	12-23-89	141	3.4	1.716	1.087	10.234	0.159	1.707	82	27	38	49	1.22	0.77
SUNLAND	11-22-89	95	11.2	0.335	1.585	3.926	0.311	3.507	47	78	117	81	0.35	1.67
SUNLAND	2-19-90	91	26.5	0.398	1.285	5.233	0.000	2.297	65		80	73	0.44	1.41
SUNLAND	11-16-89	79	4.3	0.375	0.873	6.860	0.154	1.823	98	46	73	73	0.47	1.11
SUNLAND	6-23-89	77	9.3	0.801	0.836	4.203	0.183	1.934	62	57	80	66	1.04	1.09
SUNLAND	5-18-89	17	15.2	0.223	0.000	0.369	0.033	0.327	25	46	61	44	1.31	0.00
SUNLAND	4-02-89	17	19.4	0.081	0.022	0.396	0.040	0.357	26	56	67	50	0.48	0.13
SUNLAND	3-15-90	14	14.4	0.195	0.000	0.380	0.022	0.243	31	38	55	41	1.40	0.00
SUNLAND	2-09-90	10	13.9	0.219	0.065	0.241	0.000	0.128	27		41	34	2.19	0.65

*) Based on elemental soil fractions calculated in Tables 3 and 4.

All in all the elemental data support the notion of a major crustal contribution to high (>75 ug/m³) PM₁₀ loadings at both Anthony and Sunland Park. If one uses only Ti (Table 5, column L) as a tracer at Anthony and Fe (Table 5, column M) as a tracer at Sunland Park, the crustal component accounts for essentially all of the PM₁₀ matter collected for high PM₁₀ loadings.

It is important to keep in mind the uncertainties involved in such calculations. Table 6 shows the differences in percent obtained by Nuclear Environmental Associates in replicate XRF analyses. The averages are about 10% for Ca and Ti, and about 5% for Fe, suggesting that we should have a little more confidence in the results based on iron than on the other two elements. Even so, the uncertainty in the crustal contribution to PM₁₀ is on the order of 20% at best, namely in the case of iron, because of the uncertainty in the mass determinations and the number of mathematical operations involved. Uncertainty in the Ca and Fe results is at least on the order of 30% under the assumption of no bias.

TABLE 6

Precision of Elemental Determinations by XRF

	CA	TI	FE
PM ₁₀ SAMPLE 852	16.7	13.9	8.0
PM ₁₀ SAMPLE 866	6.0	12.8	5.7
PM ₁₀ SAMPLE 874	18.3	**	2.1
ANTHONY SOIL T07	5.1	11.0	6.0
SUNLAND SOIL T0284	6.5	8.9	0.9
AVERAGES	10.5	11.7	4.5

**) Below detection limit.

*) The crustal mass in PM₁₀ is obtained (when Fe comes only from soil) by multiplying the mass of the Fe (or Ca, or Ti) in PM₁₀ by the ratio of total soil mass to soil Fe. The crustal fraction in PM₁₀ is then obtained by division by total PM₁₀ mass. i.e.,

$$X_{\text{crust}} = M_{\text{Fe, PM10}} * (M_{\text{tot, soil}} / M_{\text{Fe, soil}}) / M_{\text{PM10}}$$

Since the uncertainties in these four factors are all about 5%, the overall uncertainty, obtained by summing individual uncertainties in percent, is about 20% for Fe.

3.d Meteorological/PM₁₀ Correlations. To obtain a comprehensive understanding of the dependence of PM₁₀ loadings at Anthony and Sunland Park on other factors, it is of interest to plot various potential interacting factors against one another. Figure 27 is an XY plot of all simultaneous PM₁₀ pairs recorded at Anthony and Sunland Park in 1989 and the first three quarters of 1990. The slope of the least-squares straight line based on the points in Figure 13 is about 1/2 whether or not exceedance values are included, indicating that PM₁₀ concentrations at Anthony are roughly twice as high as at Sunland Park. Thus the problem is more severe at Anthony, as already suggested by the relative number of exceedances at the two sites.

Figure 28 shows maximum daily gusts plotted against maximum hourly averaged wind speeds for the same day during the first half of 1991 at Sunland Park. This demonstrates that there are many days at Sunland Park when gusts exceed 40 mph even though the maximum hourly average remains below 30 mph. Thus the dual definition of "exceptional wind event" as found in Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (EPA-450/4-86-007) may not be appropriate for Dona Ana County.

Figure 29 tends to support this possibility. It shows all PM₁₀ measurements at Sunland Park plotted against the maximum hourly average wind speed since the meteorological tower was installed at Sunland Park. The distribution is two-tailed with the highest PM₁₀ concentrations occurring at low and high wind speeds. This conforms to the notion of high PM₁₀ measurements being correlated with inversions (low winds) or high gusts. Interestingly, high values in the right-hand tail begin at an hourly average of about 24 mph, not 30 mph. As time goes on and more data accumulates, this relationship should continue to be watched.

4. Summary.

All in all the available data support the hypothesis that most high PM₁₀ concentrations at Sunland Park and Anthony have a very large crustal component, whether or not winds are high at La Union. It is unfortunate that there is no coincident meteorological data for most PM₁₀ exceedances at Anthony and Sunland Park. However, the relationship between wind speed and PM₁₀ concentrations in Dona Ana County should become clearer as meteorological data from Sunland Park accumulate.

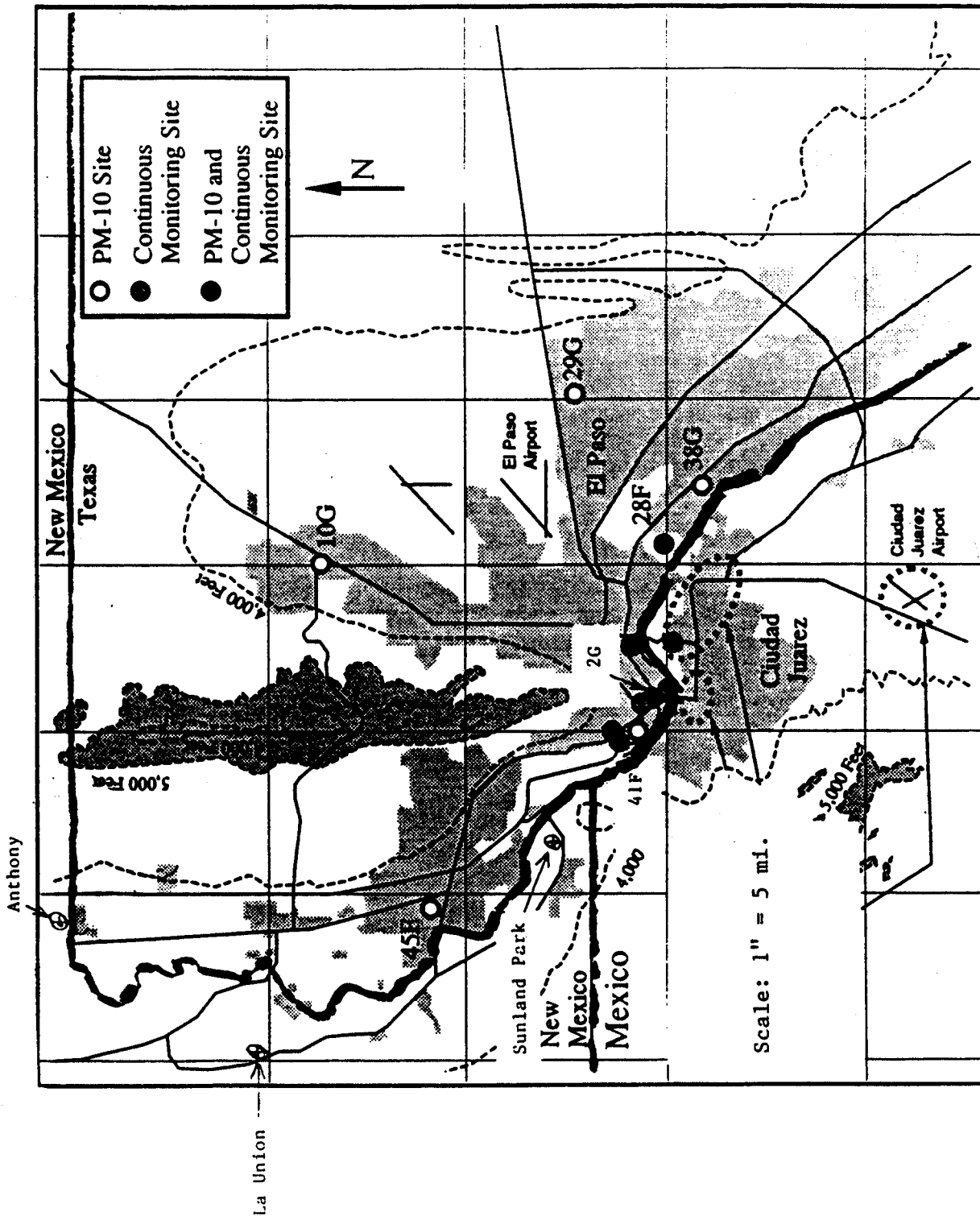


Figure 1



Figure 2



Figure 3

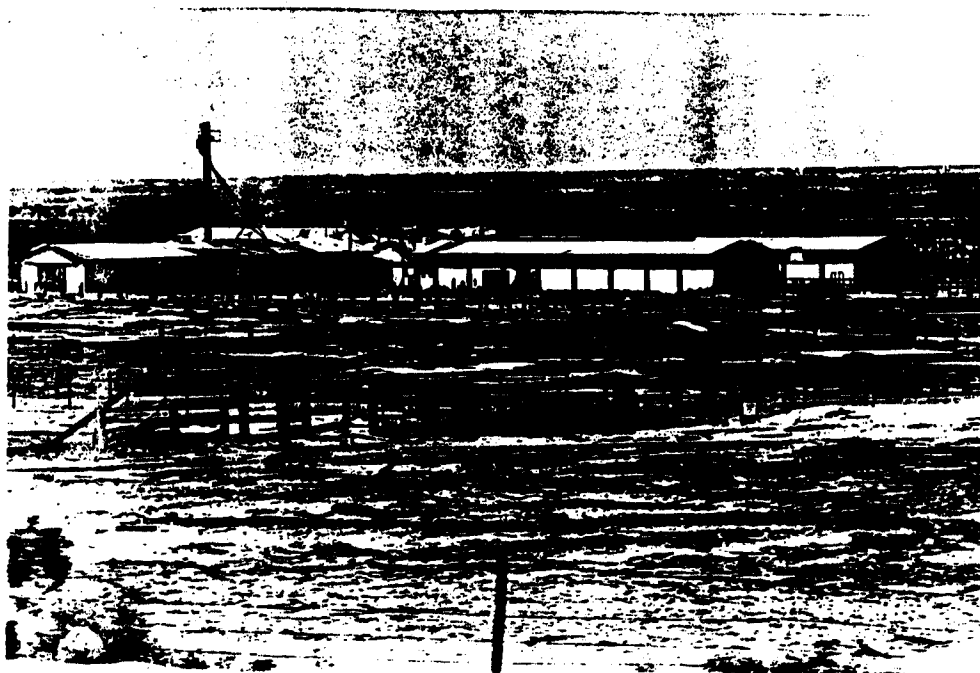


Figure 4



Figure 5

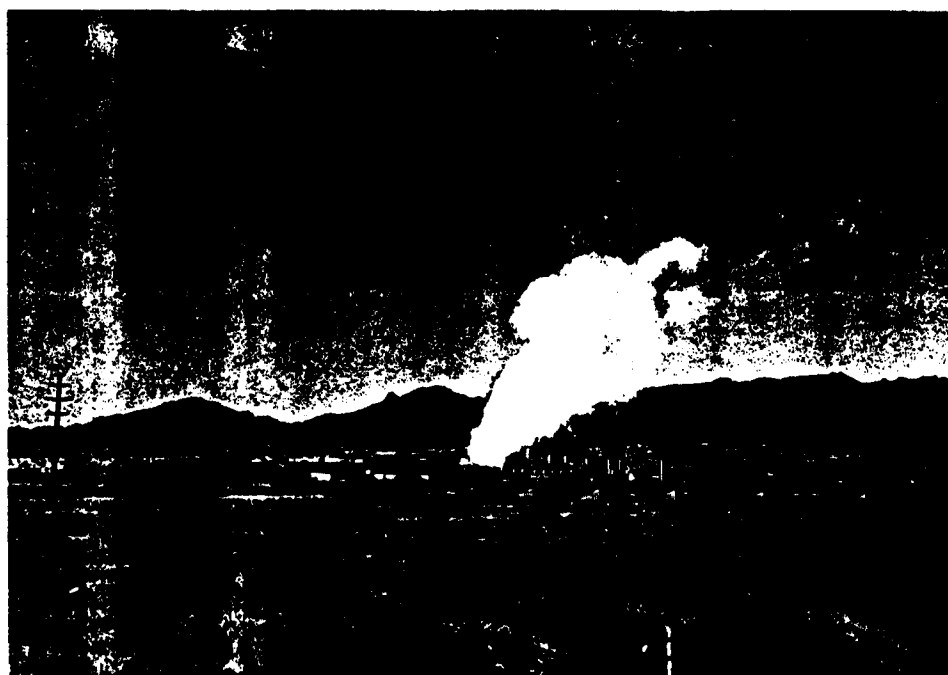


Figure 6

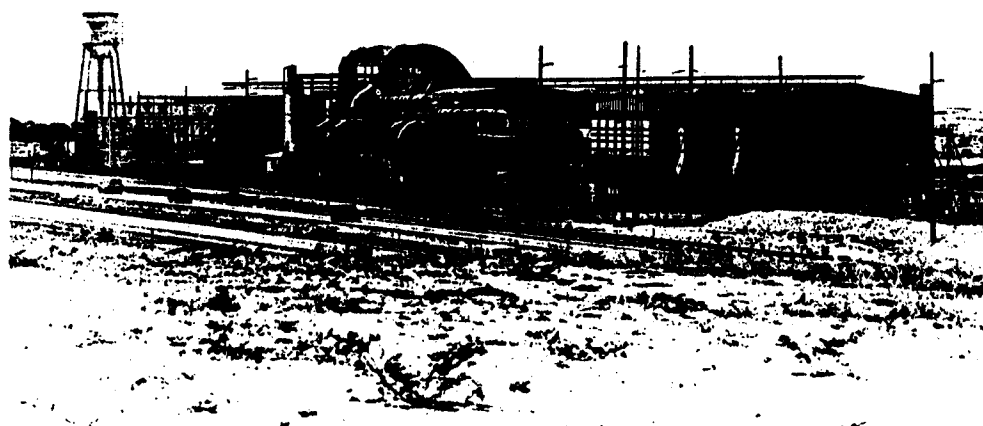
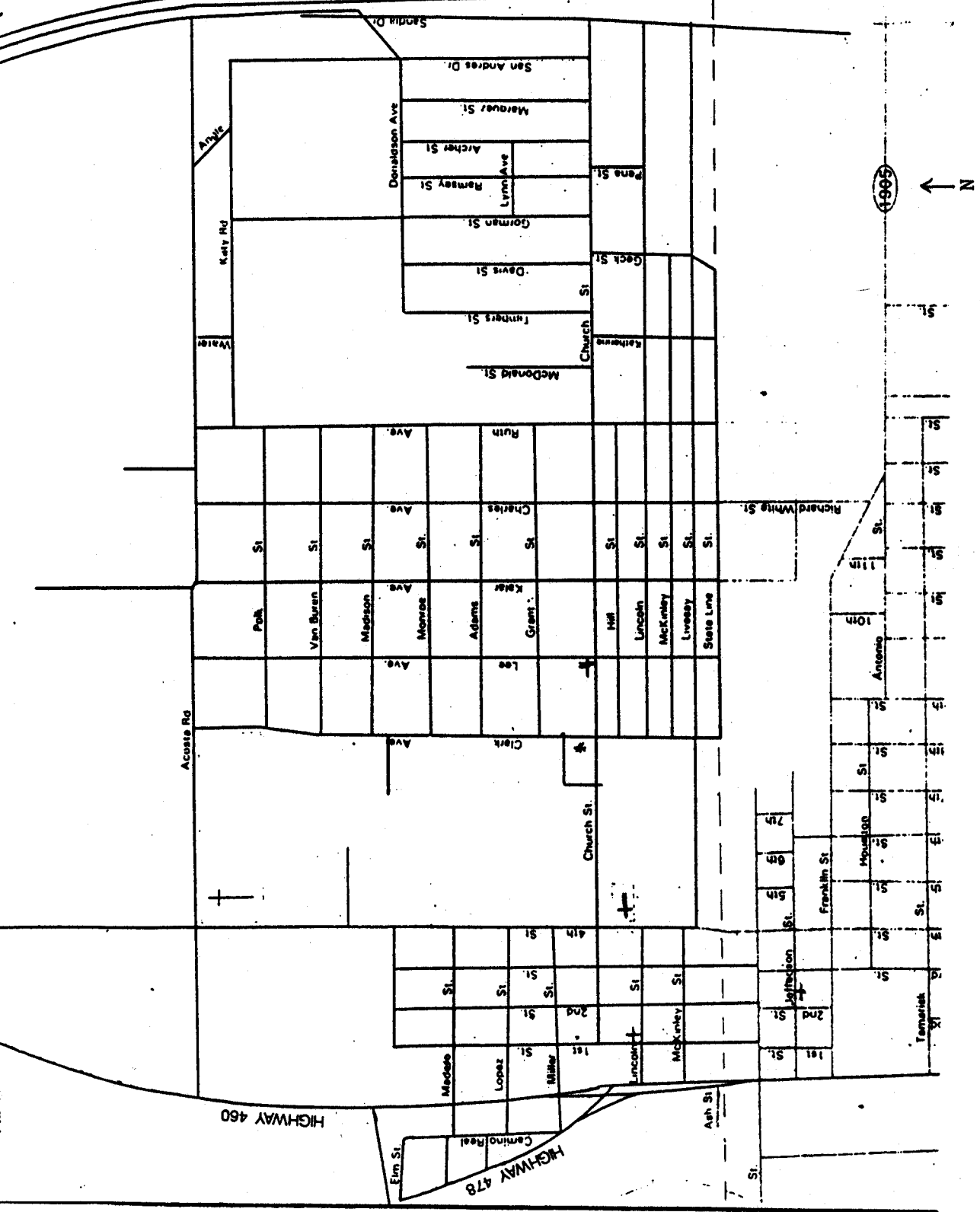


Figure 7

INTERSTATE HIGHWAY 10

New Mexico
Texas



*) Monitoring site

Figure 8 - Street Map Anthony, N.M.



Figure 9

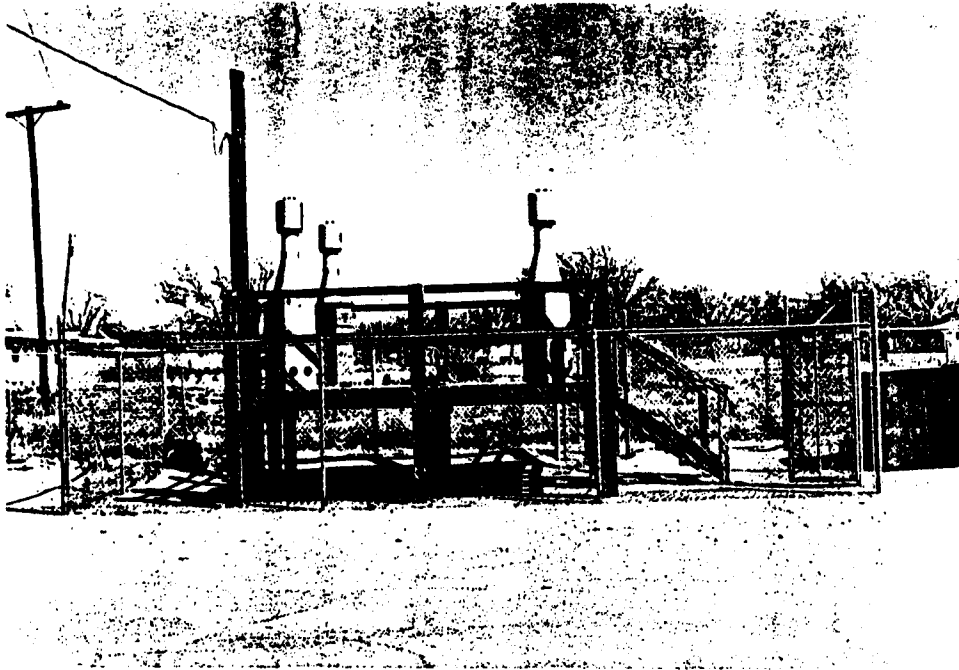


Figure 10

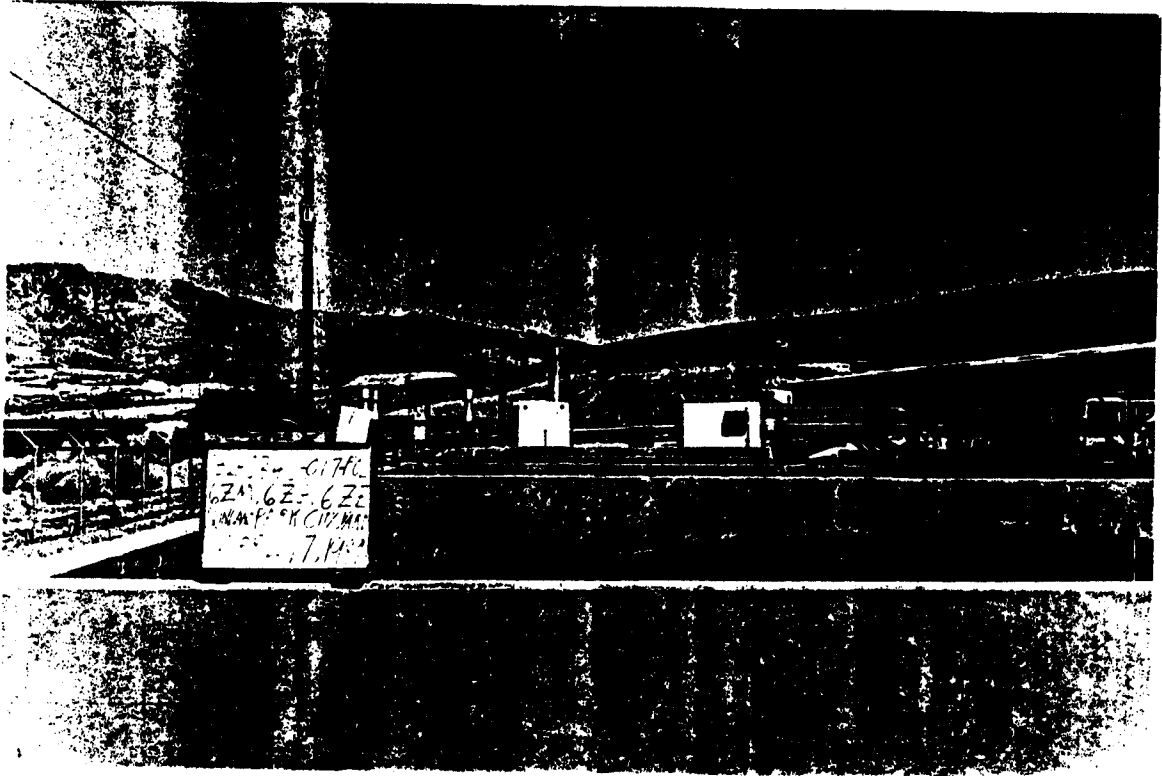


Figure 11

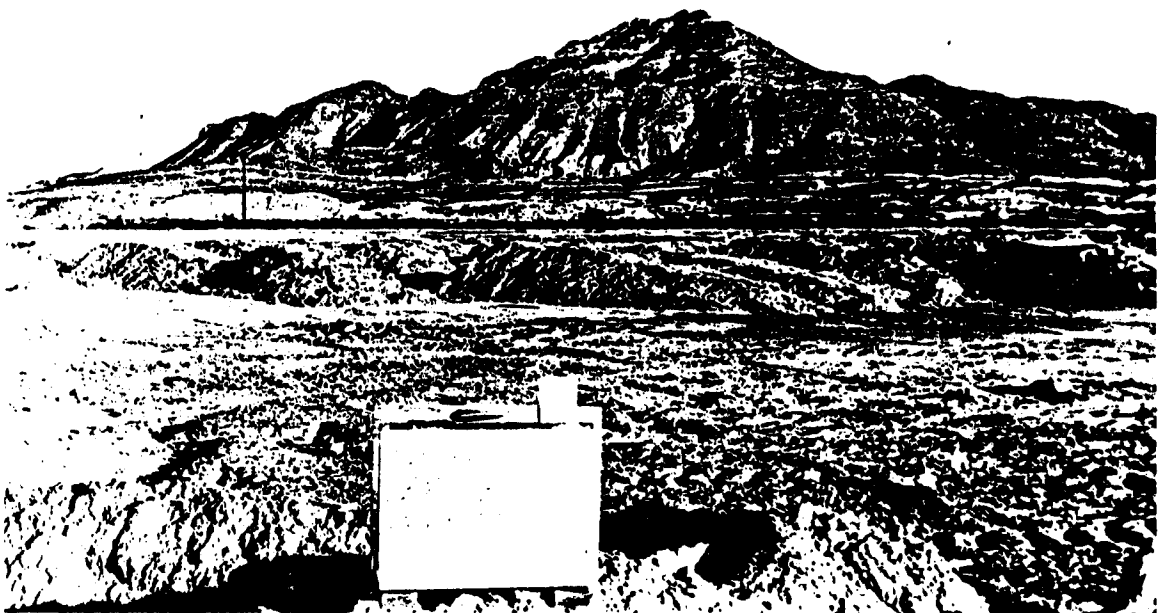


Figure 12

SUNLAND PARK, 3/03/89

PM10 = 169 ug/m3

PERCENT OF MASS

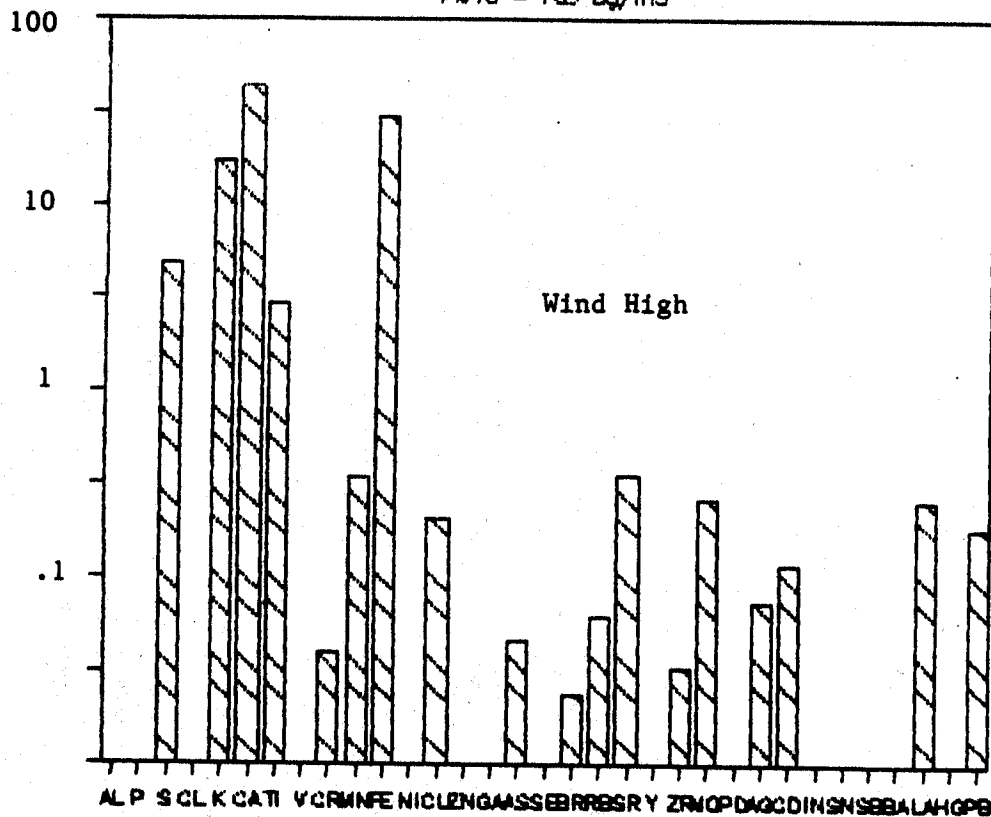


Figure 13

SUNLAND PARK SOIL

COMPOSITE, FINE

PERCENT MASS

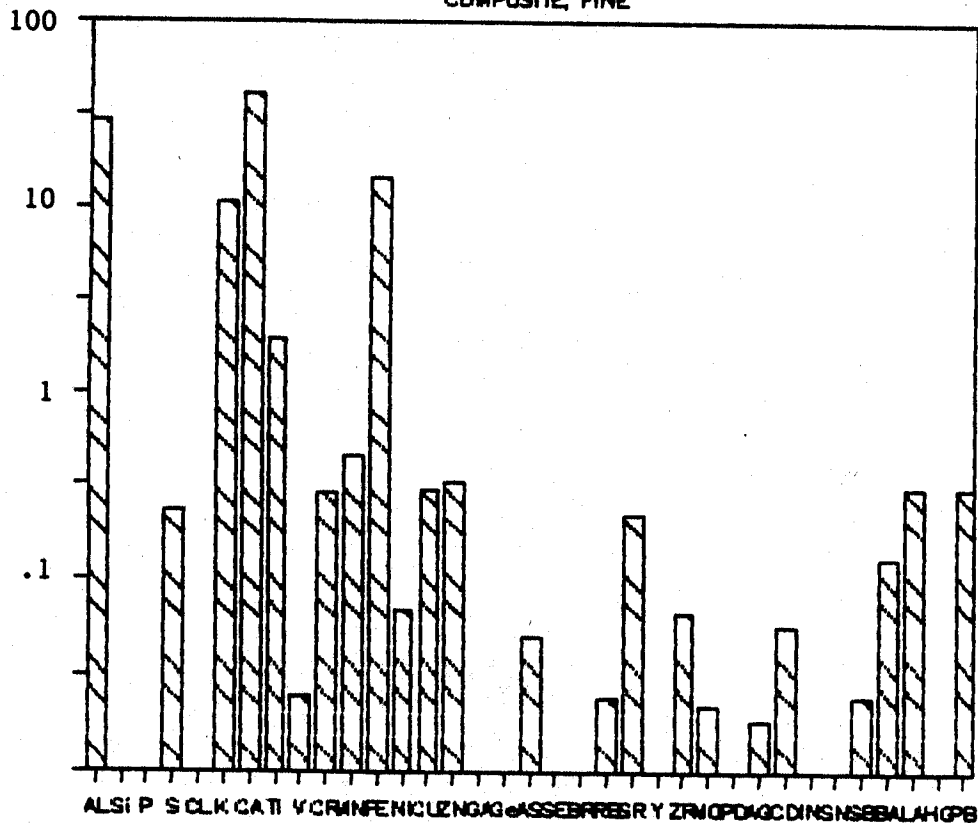


Figure 14

ANTHONY, 3/03/89

PM10 - 297 ug/m3

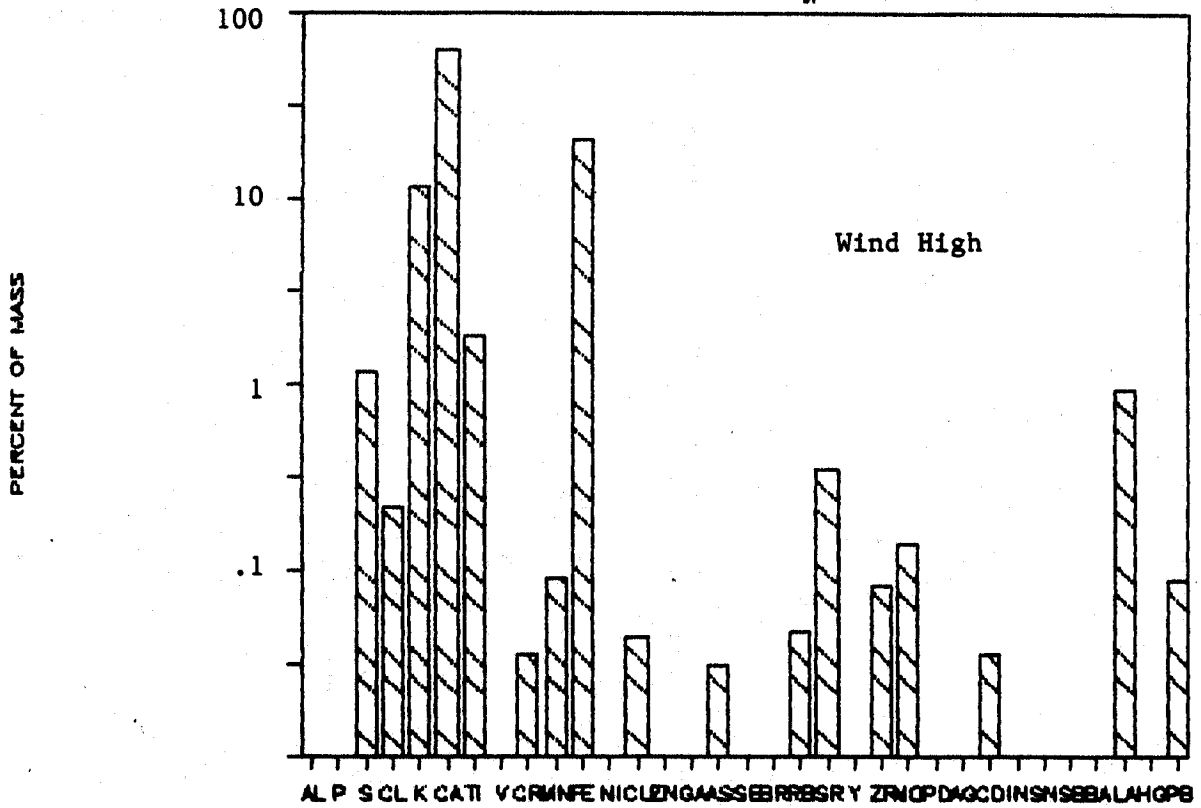


Figure 15

ANTHONY, 6/13/89

PM10 - 202 ug/m3

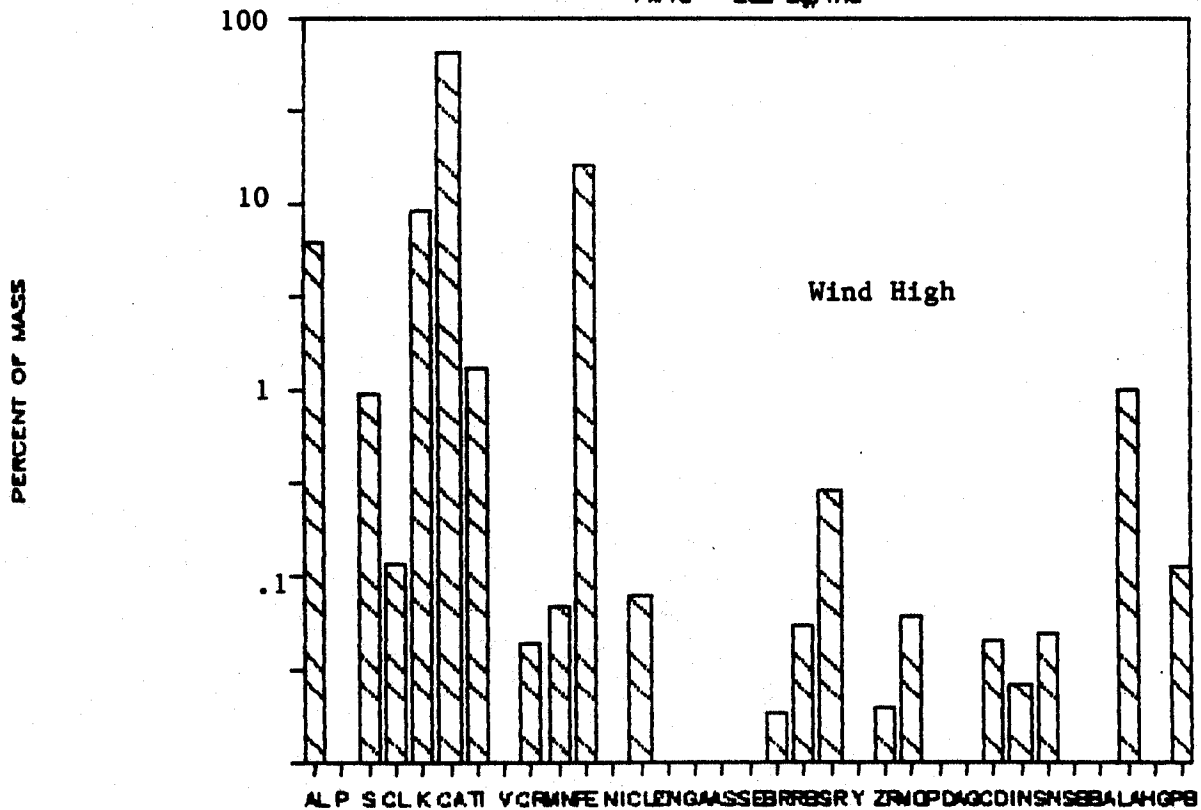


Figure 16

ANTHONY SOIL

COMPOSITE, FINE

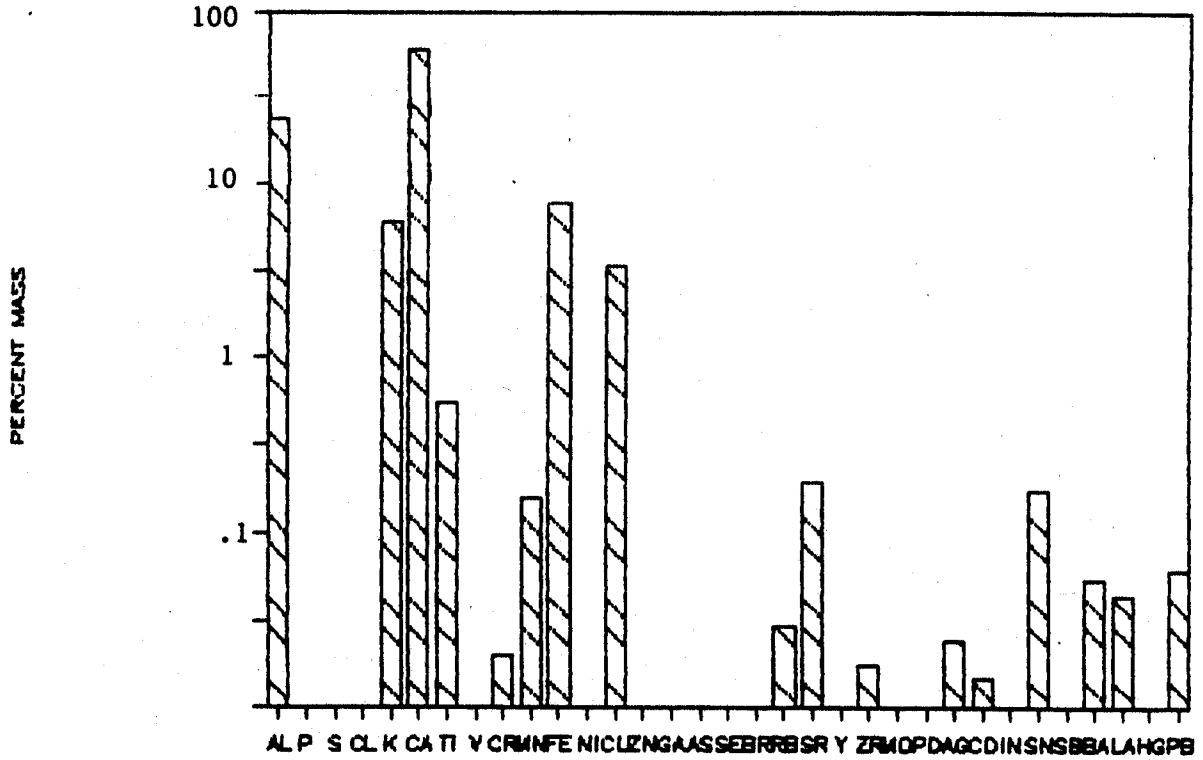


Figure 17

SUNLAND PARK, 11/23/89, AND FINE SOIL

PM10 - 221 $\mu\text{g}/\text{m}^3$

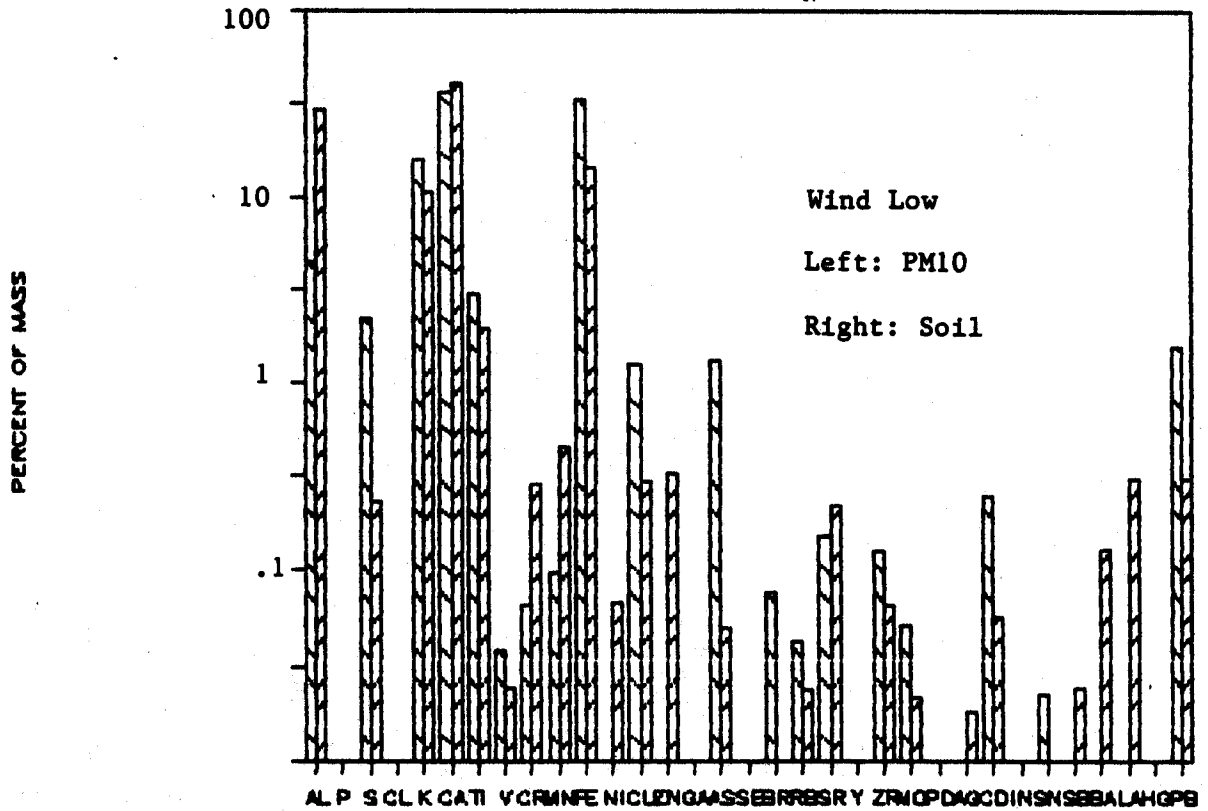


Figure 18

ANTHONY, 10/27/89, AND FINE SOIL

PM10 = 176 $\mu\text{g}/\text{m}^3$

PERCENT OF MASS

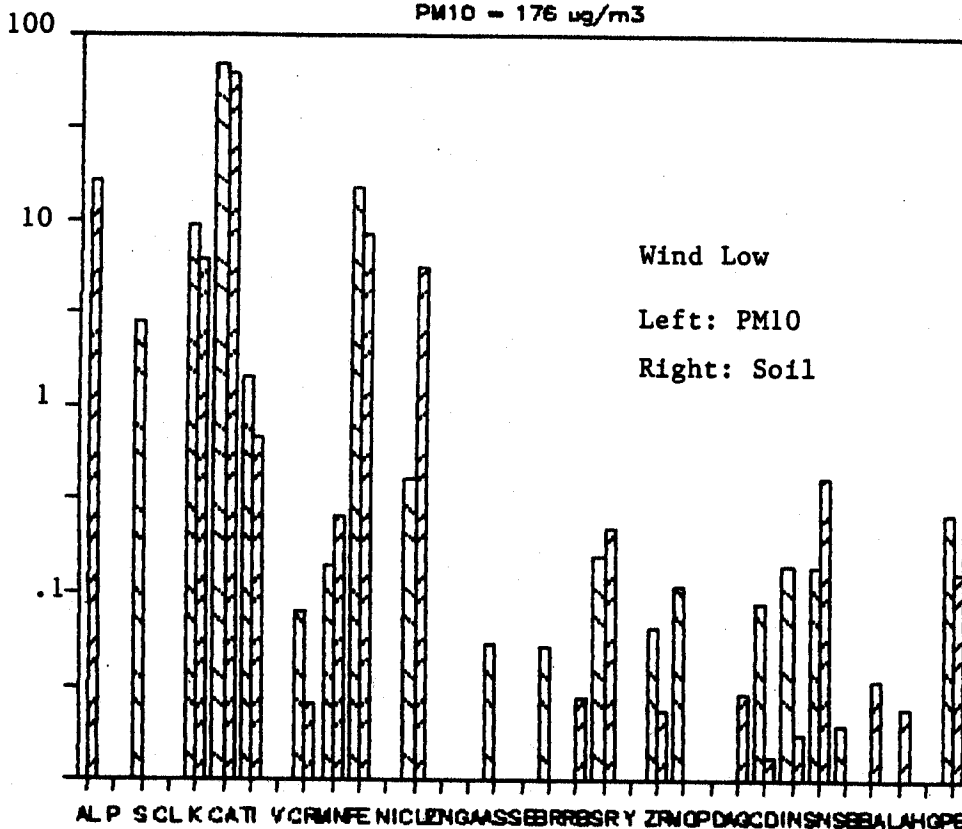


Figure 19

ANTHONY, 12/24/89, AND FINE SOIL

PM10 = 176 $\mu\text{g}/\text{m}^3$

PERCENT OF MASS

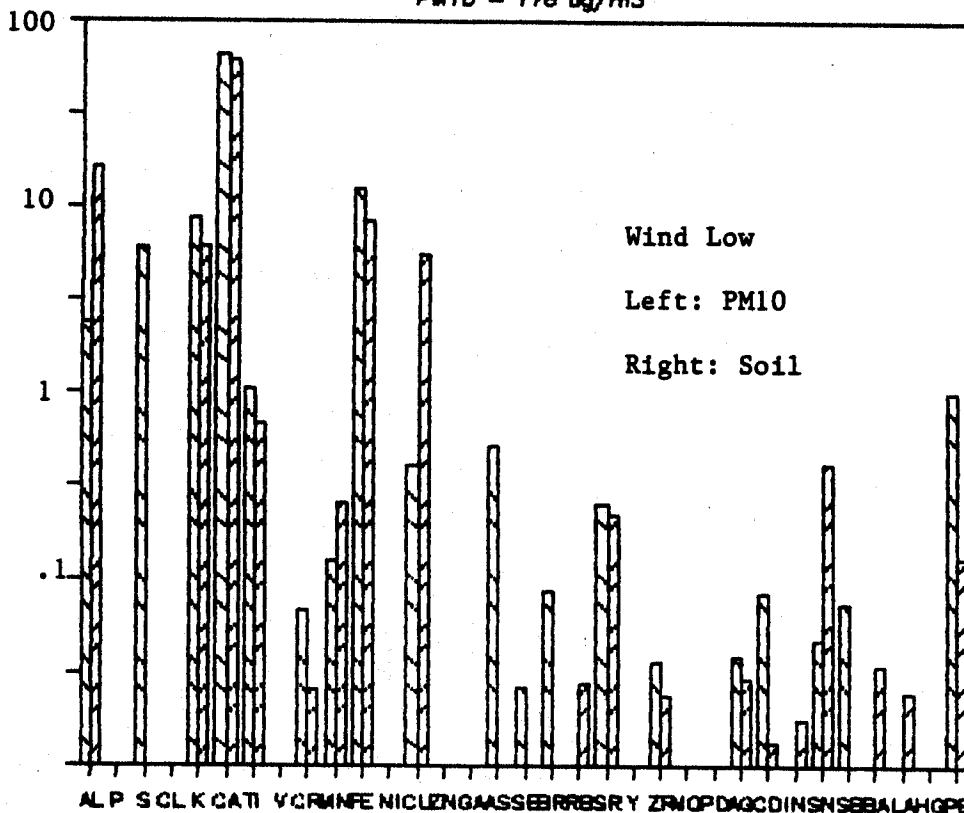


Figure 20



Figure 21



Figure 22

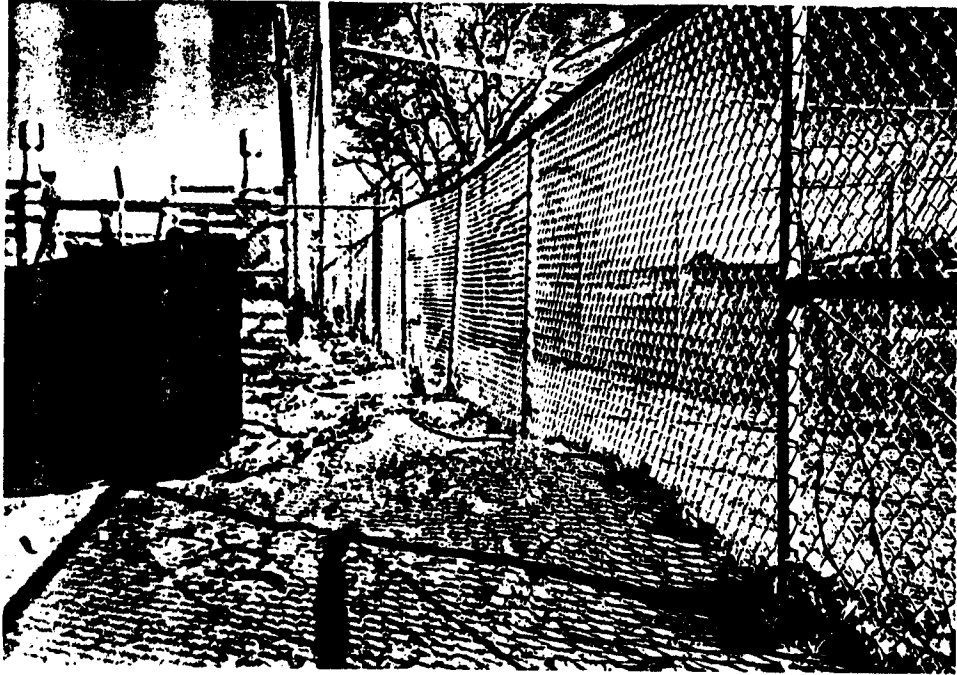


Figure 23



Figure 24

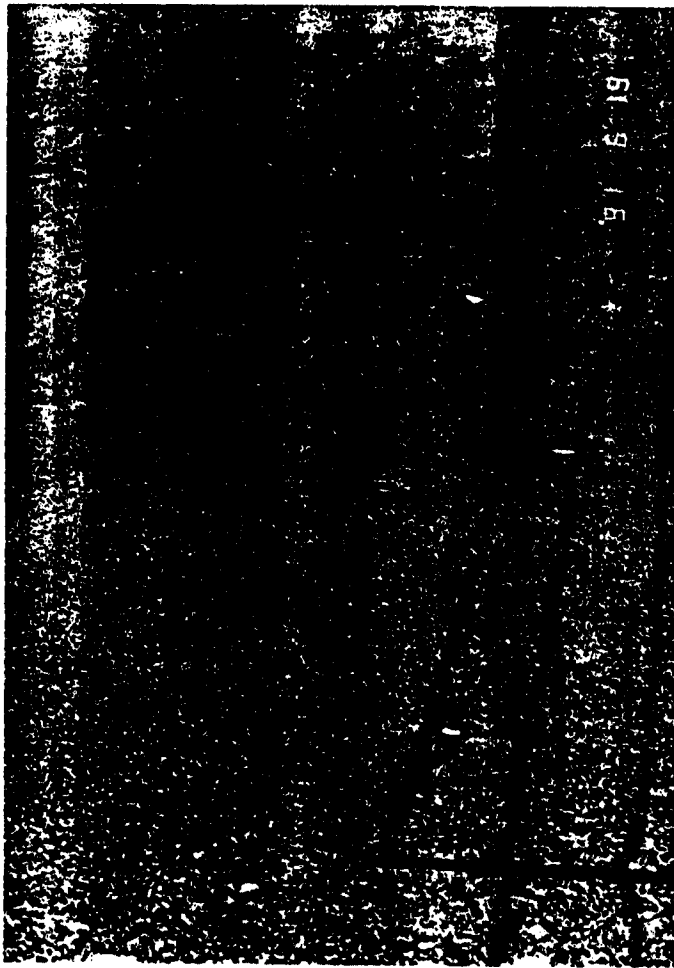


Figure 25



Figure 26

SUNLAND PARK

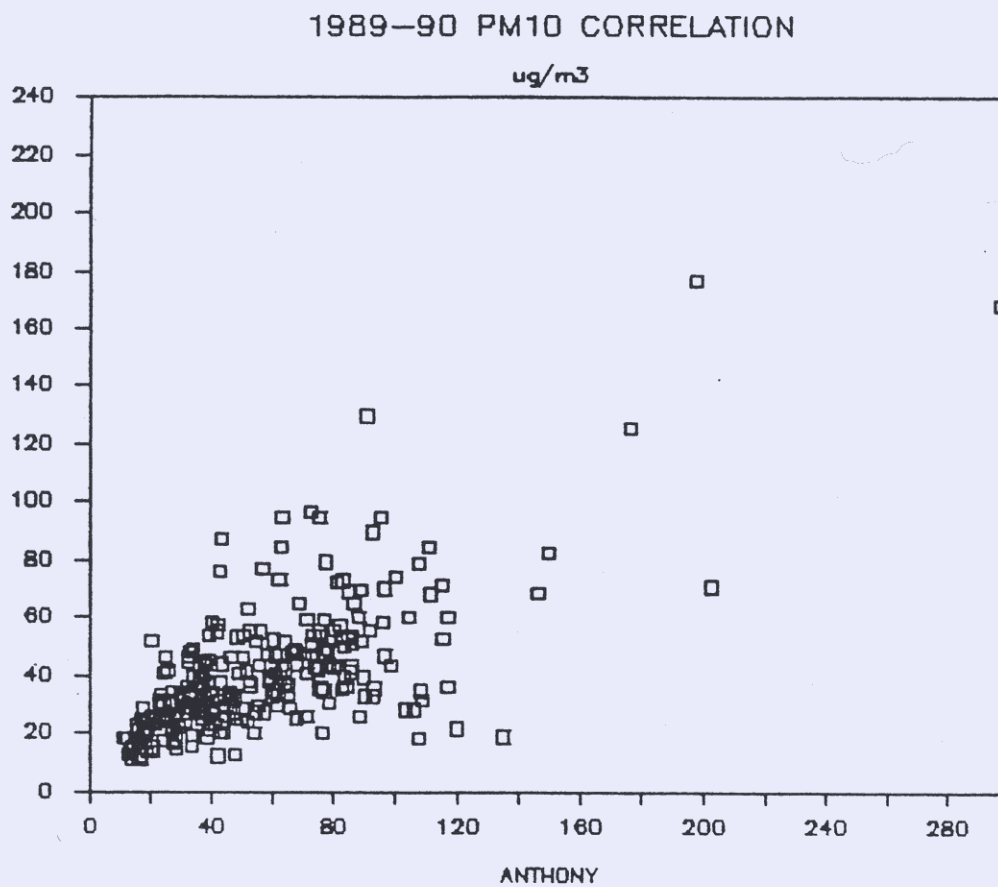


Figure 27

SUNLAND PARK

1991

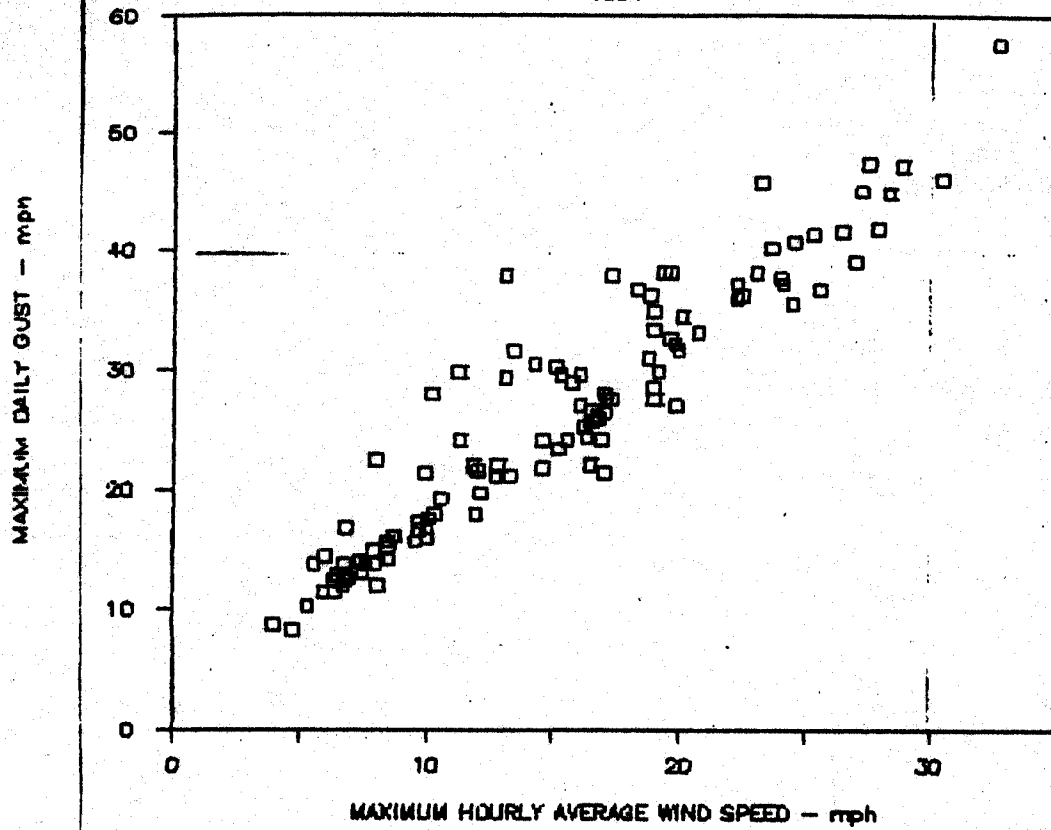


Figure 28

SUNLAND PARK

1990 - 1991

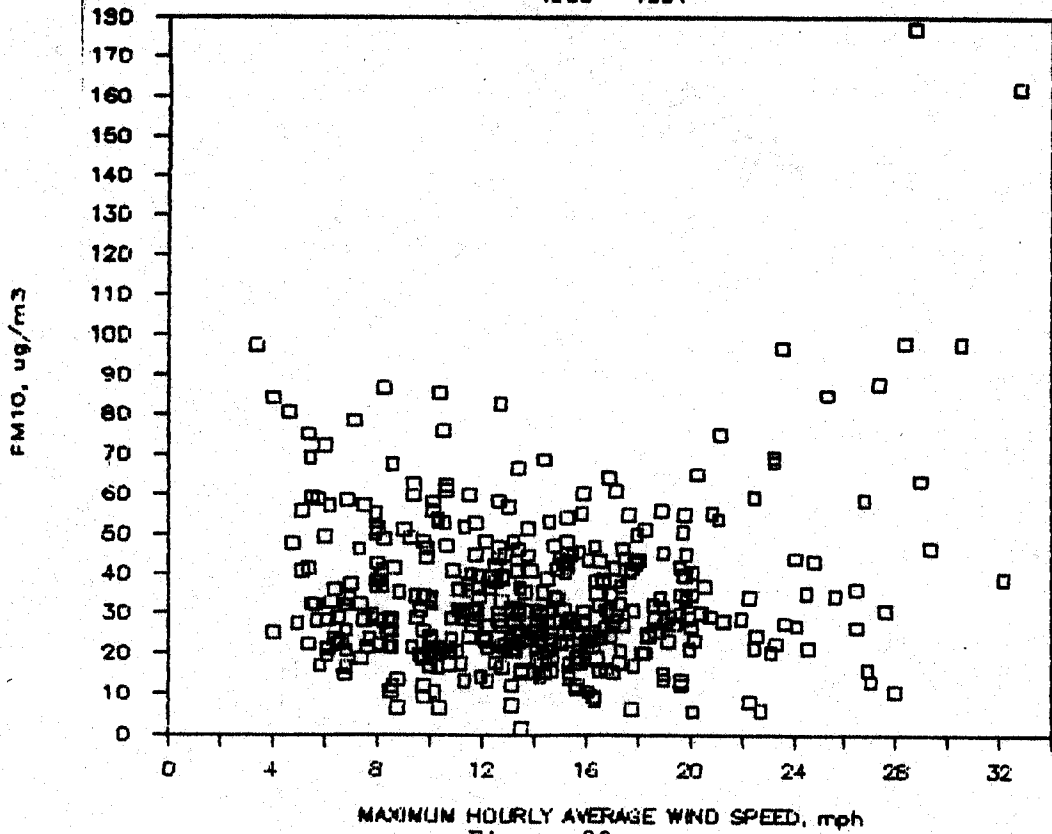


Figure 29

APPENDIX BA

REPORTS OF X-RAY FLUORESCENCE ANALYSES OF PM₁₀ SAMPLES FROM ANTHONY, SUNLAND PARK, AND LAS CRUCES, NM BY NUCLEAR ENVIRONMENTAL ASSOCIATES

A total of 28 PM₁₀ filters from Anthony, Sunland Park and Las Cruces were analysed by Nuclear Environmental Associates of Tigard, Oregon, using x-ray fluorescence. The numbers of filters from these three sites were 11, 11, and 3 respectively. All filters from 1989 exceedances were included. Other filters were selected to give a variety of filter loadings. Filters from the Las Cruces site were included simply to permit broader comparison.

In addition, two blank filters were analysed to provide background correction.

The PM₁₀ filters were made of quartz which has the drawbacks of preventing useful microscopic analysis and preventing the determination of silicon, because of the large background contribution to the silicon signal from the filter.

DELETED FROM THIS COPY OF THE NM PM10 SIP REVISION ARE APPROXIMATELY 100 PAGES OF DATA FROM FILTER ANALYSES. THIS INFORMATION IS AVAILABLE UPON REQUEST FROM THE AIR QUALITY BUREAU (827-2859).

APPENDIX C

AIR QUALITY DISPERSION MODELING SUMMARY

Including Inputs, Outputs,
and Test Cases to Verify Model

October 24, 1991 (8:22am)
 Robert L. Myers II

AIR QUALITY DISPERSION MODELING SUMMARY for ANTHONY PM₁₀ SIP

Anthony PM₁₀ Monitor Site
 Section 35, T 26 S, R 3 E, Dofia Ana County
 UTM coordinates: 348.713 E, 3541.762 N, zone 13
 Elevation = 3820 feet

Brief: In response to the EPA PM₁₀ SIP call for the Anthony Station 6C monitor, point source modelling was performed by the Bureau using New Mexico and Texas sources of particulate emissions with a single model receptor representing the Anthony monitor. The results of this modelling indicate that these point sources did not significantly contribute to the federal PM₁₀ violations registered at this monitor.

Ambient Impact from PM₁₀ Emissions

<u>Source(s)</u>	<u>Averaging period</u>	<u>max impact (ug/m³)</u>	<u>day</u>
<u>federal standard</u>	<u>annual</u>	<u>50.00</u>	<u>n/a</u>
<u>all w/ old gins</u>	<u>annual</u>	<u>0.69</u>	<u>n/a</u>
<u>all w/ new gin</u>	<u>annual</u>	<u>0.56</u>	<u>n/a</u>
<u>federal standard</u>	<u>24-hour</u>	<u>150.00</u>	<u>n/a</u>
<u>1990 violation</u>	<u>24-hour</u>	<u>198.00</u>	<u>139</u>
<u>Asarco only</u>	<u>24-hour</u>	<u>1.93</u>	<u>259</u>
<u>Border + Proler</u>	<u>24-hour</u>	<u>0.67</u>	<u>259</u>
<u>4 old gins only</u>	<u>24-hour</u>	<u>1.37</u>	<u>218</u>
<u>new gin only</u>	<u>24-hour</u>	<u>0.25</u>	<u>253</u>
<u>all w/ old gins</u>	<u>24-hour</u>	<u>2.86</u>	<u>259</u>
<u>all w/ new gin</u>	<u>24-hour</u>	<u>2.82</u>	<u>259</u>

Note: If the NMAAQS is more stringent than the NAAQS, only the NMAAQS is listed.

Stack Parameters: see Table I for complete list of input parameters.

<u>Facility</u>	<u>UTMH (km)</u>	<u>UTMV (km)</u>	<u>Rate (lb/hr)</u>
Anthony Gin (TX)	343.4	3540.6	0.98
Santo Tomas Gin	340.0	3560.0	0.98
Santo Tomas Short	340.0	3560.0	1.24
Chamberino Coop	343.0	3548.0	1.24
Mesa Farmer's Coop	346.6	3551.8	0.60
Ribble Asphalt	348.0	3521.0	1.70
Joab Incinerator	330.0	3567.0	3.00
Chevron (TX)	367.8	3515.3	15.6
El Paso Refining	367.1	3515.5	34.8

Stack Parameters: (continued)

<u>Facility</u>	<u>UTMH</u> <u>(km)</u>	<u>UTMV</u> <u>(km)</u>	<u>Rate (lb/hr)</u>
Proler Intx	349.3	3537.9	1.1
Border Steel	350.3	3537.5	5.0
Asarco	355.8	3517.0	128.5
Jobe-McKelligan	360.5	3520.0	14.3
El Paso Electric	353.6	3519.6	10.5

Model(s) Used: ISCST (dated 90346)

Number of Model Runs: two

Modeling Parameters: ISCST -- regulatory default (stack tip downwash, buoyancy induced dispersion, default vertical potential temperature gradients, default wind profile exponents, final plume rise), calms processing, flat terrain.

Receptor Grid: single receptor located at the Anthony Elementary School Station 6C monitoring site.

Met Data: One (1) year, 1990 Las Cruces Armory

Adjacent Sources: New Mexico particulate sources were obtained from 1) EPA Aerometric Information Retrieval System (AIRS) Quicklook retrieval, 2) data obtained from AQB's Control Strategy Section field trip, and 3) permit file research, including the permit application for Mesa Farmer's new cotton gin in Vado and the subsequent shutdown of four older gins. Texas particulate sources obtained from the Control Strategy Section of the Texas Air Control Board as used in their El Paso County PM₁₀ SIP.

Two sets of emission rates were supplied by TACB - maximum hourly emission rates to determine maximum 24-hour impact and annualized emission rates to estimate the average annual impact. The modelling run done here used only the higher hourly emission rates to estimate both the 24-hour and the annual averages.

Results Discussion and Conclusion

ISCST was run with several source groups to show the impact of individual facilities. Based on this modelling run, it would appear that particulate point sources are not significantly contributing to the federal PM₁₀ violations registered at the Anthony monitor.

The calculated annual PM₁₀ average concentration for 1990 from all sources including the four cotton gins to be replaced by the Mesa Farmer's Coop gin) was 0.69 ug/m³. With the new gin operational and the old gins shut down, the maximum annual PM₁₀ concentration is estimated to be 0.56 ug/m³.

The maximum 24-hour average concentration from all sources, including the older gins, was estimated to be 2.86 ug/m³ on day 259 (Sunday, Sept. 16). The primary contributors to this maximum were Asarco, with 1.93 ug/m³, and Proler Intx and Border Steel (the two closest TX sources to the monitor) with 0.67 ug/m³. With the new gin operational and the old gins shut down, the maximum 24-hour PM₁₀ concentration is estimated to be 2.82 ug/m³.

Table I
Anthony PM₁₀ SIP Point Sources

	Emission Rate g/s	UTMH	UTMV	Height meters	Temp °K	Velocity m/sec	Diameter meters
Anthony Roller Gin							
11	0.984	343700.	3540580.	6.10	327.8	10.36	0.46
Santo Tomas Roller Gin							
12	0.984	340000.	3560000.	6.10	327.8	10.36	0.46
Chamberino Coop Gin							
13	1.236	343000.	3548000.	6.10	327.8	10.36	0.46
Santo Tomas Short Staple Gin							
14	1.236	340000.	3560000.	6.10	327.8	10.36	0.46
Mesa Farmer's Coop Gin							
21	0.178	346600.	3551800.	6.02	322.1	10.20	0.45
22	0.420	346600.	3551800.	9.14	322.1	9.90	1.22
Ribble Asphalt							
101	0.214	348000.	3521000.	7.62	1311.0	7.62	1.01
Joab Sunland Park Incinerator							
102	0.378	330000.	3567000.	6.09	344.0	20.18	0.70
Chevron							
1001	0.004	367840.	3515380.	27.43	511.0	2.74	1.83
1002	0.033	367860.	3515340.	27.43	461.0	4.63	1.83
1003	0.029	367870.	3515330.	27.43	438.7	5.43	1.83
1004	0.019	367780.	3515140.	40.84	783.2	8.20	2.36
1005	0.013	367790.	3515150.	35.36	783.2	6.46	2.13
1006	0.004	367920.	3515330.	27.43	744.3	10.27	1.22
1007	0.006	368090.	3515280.	27.43	633.2	6.07	1.68
1008	0.003	367780.	3515390.	28.65	705.4	2.38	1.83
1009	0.002	367650.	3515650.	22.86	727.6	1.31	1.37
1010	0.002	368080.	3515190.	44.50	894.3	2.59	1.37
1011	0.001	368060.	3515290.	30.78	561.0	.31	1.83
1012	0.003	367760.	3515200.	31.09	683.2	2.77	1.37
1013	0.003	367760.	3515190.	31.09	663.7	3.44	1.37
1014	0.020	367740.	3515200.	45.72	466.5	3.81	2.67
1015	0.009	367730.	3515210.	45.72	455.4	1.61	2.67
1016	0.031	367890.	3515060.	41.15	444.3	8.75	1.83
1017	0.031	367600.	3515400.	7.01	699.9	4.57	.24
1018	1.842	367890.	3515080.	41.15	549.9	18.90	1.83
1019	0.002	368000.	3515080.	45.72	273.0	.01	1.00
El Paso Refining							
1101	0.114	367270.	3515420.	27.74	451.5	5.29	1.93
1104	0.109	367110.	3515530.	25.91	469.3	11.78	1.40
1105	0.021	367120.	3515520.	25.91	491.5	2.74	1.40
1106	0.003	367030.	3515590.	39.93	705.4	4.69	1.22
1107	0.022	367160.	3515650.	30.18	705.4	8.27	1.47
1108	4.212	367090.	3515570.	58.83	1086.0	24.45	1.62
Proler Intx							
1201	0.074	349330.	3537940.	14.33	293.2	20.12	.46
1202	0.040	349330.	3537940.	13.72	293.2	13.41	.59
1203	0.049	349330.	3537940.	3.05	273.0	.01	1.00
1203	0.001	349330.	3537940.	9.14	293.2	.06	.20
1205	0.001	349330.	3537940.	10.06	322.1	6.61	.73

Table I (cont.)

Anthony PM₁₀ SIP Point Sources

	Emission Rate g/s	UTMH meters	UTMV meters	Height meters	Temp °K	Velocity m/sec	Diameter meters
Border Steel							
1301	0.030	350380.	3537140.	6.10	316.5	19.81	1.37
1302	0.100	350350.	3537560.	13.41	316.5	.01	.30
1303	0.030	350360.	3537680.	30.48	408.2	20.73	2.68
1304	0.104	350300.	3537550.	1.00	298.2	.01	.30
1305	0.104	350300.	3537550.	1.00	273.0	.01	1.00
1314	0.062	350250.	3537500.	3.05	299.9	3.05	.61
1315	0.012	350250.	3537540.	3.05	299.9	3.05	.61
1321	0.012	350250.	3537590.	6.10	1088.7	4.46	.91
1324	0.010	350280.	3537620.	16.76	1088.7	13.71	.97
Asarco							
1401	0.354	355860.	3516990.	8.36	308.2	.01	1.00
1402	0.096	355860.	3516990.	1.16	355.4	.01	1.00
1405	0.157	355870.	3516990.	9.14	273.0	.01	1.00
1407	0.020	355910.	3517020.	4.18	422.1	1.27	.32
1408	0.007	355700.	3517340.	5.29	505.4	1.75	.28
1409	0.010	355770.	3517260.	4.83	505.4	.94	.40
1410	0.013	355910.	3517010.	4.18	422.1	.64	.32
1411	0.020	355820.	3516950.	9.14	273.0	.01	1.00
1412	0.527	355690.	3517400.	31.09	338.7	17.68	1.68
1413	1.314	355290.	3517160.	39.93	305.4	9.75	2.74
1414	0.323	355790.	3517090.	13.72	299.9	.61	5.49
1415	0.137	355790.	3517090.	3.05	294.3	.01	.30
1416	9.335	355710.	3517210.	252.37	322.1	3.96	4.08
1417	0.162	356100.	3516930.	1.00	273.0	.01	1.00
1418	3.980	355760.	3517150.	20.12	294.3	9.75	2.29
Jobe-McKelligon							
1501	1.515	360300.	3521100.	1.22	273.0	.01	1.00
1502	0.017	360810.	3520730.	8.53	355.4	20.76	1.25
1503	0.003	360810.	3520730.	.91	273.0	.01	1.00
1504	0.636	360300.	3521630.	9.14	273.0	.01	1.00
1505	0.001	360890.	3520460.	6.10	273.0	.01	1.00
1506	0.028	360760.	3520680.	5.49	273.0	.01	1.00
1507	0.296	360540.	3521130.	3.05	273.0	.01	1.00
1508	0.080	360870.	3520940.	7.62	273.0	.01	1.00
El Paso Electric							
1601	0.378	353500.	3519600.	31.70	394.4	6.87	3.66
1602	0.416	353600.	3519600.	34.75	400.0	6.35	3.66
1603	0.530	353600.	3519600.	43.28	400.0	11.37	4.57

DELETED FROM THIS COPY OF THE NM PM10 SIP REVISION ARE 37 PAGES OF INPUT/OUTPUT DATA AND MODEL TEST CASES. THIS INFORMATION IS AVAILABLE UPON REQUEST FROM THE AIR QUALITY BUREAU (827-2859).

APPENDIX D

PM10 CONTRIBUTIONS FROM RURAL LAND SOILS

AND OPEN BURNING IN THE ANTHONY AREA

Rural Land Derived Soils

Dona Ana County is located in the Rio Grande Basin in south-central New Mexico and shares its southern border with both Texas and Mexico. It is bordered on the west, north and east by Luna, Sierra, and Otero Counties respectively (see Figure 1). The general terrain can be characterized as flat with low lying mountains. The Rio Grande river traverses the county from the northwest corner to the southeast corner. Elevation ranges up to 9,012 feet (Organ Needle) with an average area elevation of 3,896. Dona Ana County is the sixteenth largest New Mexico county in land area covering 3,804 square miles and is the second most populated county with 135,510 people. The average population density is 35.6 persons per square mile but nearly half the population (62,126 or 46%) lives in Las Cruces, the county seat and third largest city in the state (Ref. 1, 1990 census data). With an annual precipitation of 8.49 inches and 350 sunny days annually, the climate in Dona Ana is semi-arid. Daytime temperatures range from an average of 41.6° Fahrenheit in January to an average of 79.5 in July and the annual average relative afternoon humidity is 27 percent. The prevailing wind in Dona Ana County is southwesterly (Ref. 2).

Industrially Dona Ana County is quite diverse. Of the county's labor force of approximately 60,000 people about 12,500 are employed in agriculture. The long growing season of 200 days, plenty of irrigation water, good soil along the Rio Grande river valley, and a high degree of solar insolation make this county so productive agriculturally. Dona Ana County is ranked number one among all New Mexico counties in agricultural production. Receipts for 1986 totaled \$171 million dollars, amounting to about 17 percent of the state's cash receipts from farm commodities. Receipts from the dairy industry alone totalled nearly \$56 million, making it the largest agricultural industry in Dona Ana County.

Chiles and pecans grow well on the Rio Grande flood plain. New Mexico leads the country in chile production and nearly half of its annual crop is grown in Dona Ana County. Pecans are grown in large orchards in Dona Ana County which boasts the largest pecan orchard in the world at Stahman Farms, Inc. In 1986, the combined value of the chile and pecan crops from Dona Ana County was estimated to be in excess of \$40 million dollars (Ref. 2). Dona Ana County farmers and ranchers also produce cotton, lettuce, onions, alfalfa, beef, and poultry. With the exception of ranching, most of the agricultural activity in Dona Ana County takes place exclusively in the Rio Grande river valley on the broad flood plain.

The reason nearly all prime and important farmlands are located along the Rio Grande river (see Figure 2) is because that is where soils suitable for economic plant production have formed and water is available for crop irrigation. Outside of the narrow Rio Grande valley area soils are relatively

poor for crop production and water is not available for irrigation. The rural lands in Dona Ana County fall into two large generalized categories whether you talk about water availability (irrigated and non-irrigated), land use (cropland and rangeland), or ownership (private and public). These categories generally correspond to and are primarily the result of the two general soil types found in Dona Ana County: the well developed rich soils and the young, poorly developed soils. Compare Figures 2 and 3 and the close agreement of location of prime and important farmlands with the location of the best soils for economic plant production becomes apparent. The remaining rural lands are rangeland nearly all of which is state or federally owned (86% of Dona Ana County) and characterized by relatively poorly developed soils. For the purpose of this report rural lands in the Anthony area of Dona Ana County will be discussed categorically as rangelands and crop lands.

Rangeland Derived (Soil) PM10 Contributions

Eighty six percent of Dona Ana County is state or federally owned. Nearly all these public lands lie outside of the Rio Grande river valley and are here termed rangelands. The Bureau of Land Management oversees resource activities through policy and guidance on these lands. The BLM has participated in the National Cooperative Soil Survey Program with the United States Department of Agriculture (USDA) Soil Conservation Service (SCS). The most recent soil survey of Dona Ana County was issued in 1980. The survey culminated from fieldwork done from 1961 through 1975 (Ref. 3). The work was quite thorough in identifying and describing soil types for all of Dona Ana County. Presently soil surveys and soil interpretive data continues to be updated for use in planning, support and implementation of resource activities. The BLM emphasizes prevention of deterioration as well as conservation of soil resources. The Conservation Reserve Program affords some protection as some highly erodible lands aren't suitable for agricultural leases or desert land entry petition applications.

Anthropogenic activities on the public lands that may impact air quality are reduced through mitigation measures developed on a case-by-case basis. For instance, road construction projects or sand and gravel extraction projects are required to have fugitive dust abatement programs as part of their permits or contracts.

The breakdown of ownership of the rangelands in the Anthony area outside of the Rio Grande Valley is illustrated in Figure 4. As can be seen, the vast majority of rangelands are state and federally owned and under BLM management. The BLM leases areas of range to private operators for grazing. Those allotments near Anthony are depicted in Figure 4. As the soils support limited vegetation, very few animal units per section (640 acres) are allowed under the lease. The average carrying capacity for allotments in the area is less than 2 animal units per section per year. Of course, animals are not kept on the same pasture areas year round but overall estimates are made from analysis of number of animal units on acreage over the seasons as they are pastured. This limiting of grazing is in the best interest of the private operators and landowners as well as the BLM. Overgrazing can have a deleterious effect on the proliferation of desirable forage species and associated vegetative ground cover resulting in increased wind erosion of the loose unstable soils.

However, if grazing is controlled as it is on both public and private rangelands, it has a beneficial effect on soil resources. The Southern Rio Grande and Las Cruces/Lordsburg Management Framework Plans analyses done on impacts from grazing found that benefits included long-term increased ground cover, increased production of desirable forage species and reduced wind erosion (Ref. 4).

Wind erosion of the rangeland soils results in seasonally high concentrations of particulate matter in the Anthony area. During the spring, especially large dust storms occur entraining and depositing particulate matter forming dunes, shearing off vegetation at ground level (particularly young seedling plants), and blackening the sky. The soil is easily entrained in high winds. The ease of entrainment is due to low soil moisture, poor vegetative cover and loose soil structure. These factors are understandable when the soil characteristics are studied and the conditions of soil formation are examined.

The transformation of rock into soil is influenced primarily by climate, topography, parent material, vegetation, and time. Soils formed in the Desert Southwest owe much of their character to the absence of regular rainfall or humid conditions. Soil moisture allows for chemical weathering processes of solution, oxidation and carbonization as well as physical weathering processes associated with freezing and thawing actions. Desert soils are poorly developed or young in comparison to most soils because of the lower degree of chemical weathering process exposure. Most weathering processes occurring in desert or arid soils are physical weathering from extreme diurnal temperature range, and the subsequent fracturing due to expansion and contraction, and abrasion due to sand and wind. Clay formation is a slow process as chemical dissolution of minerals and material transport within the soil only occurs during infrequent rains. Another aspect of low moisture content (low rainfall and high evapotranspiration rate) is sparse density of plants, animals and microorganisms. This results in a very small amount of organic matter accumulating in the soil as a product of microorganisms decay of plant and animal residues (Ref. 5).

Organic matter normally resides in the upper horizon of a soil's profile. The profile is a vertical cross section through the soil. Humid soils normally have well developed horizons or layers. Soils of the Desert Southwest (Anthony is technically in the northern portion of the Chihuahua Desert) are not as distinct in their profile as those formed in the floodplains of river valleys or areas with extensive irrigation. The discernible differences in well developed soil horizons are structure, color, texture salt accumulation, alkalinity/acidity, etc. Soil profiles in the Anthony area rangelands exhibit very loose structured sand to loess constituency. Sulfur is prevalent in the soil as is lime, gypsum and other salts (Ref. 6). These soils are various aridisols, entisols (psamments) and fluvents easily entrained due to sandy loess loam textures (Figure 5), loose structure (Figure 6), and poor vegetative cover (Figures 5, 7 and 8). Further evidence of low soil development is the color of the rangeland soil being light yellow to red indicating little organic matter and a fair amount of iron oxides. Wind erosion is evidenced by dune formation. Figures 8, 9, 10, 11 and 12 all show dunes formed in the rangeland near Anthony. Figure 8 shows typical small dune formation around vegetation (creosote bush and yucca). Figures 9, 10, 11 and 12 show less common massive

dune formation. Figures 9 and 10 are an interesting example of dune progression. The railroad tracks (arrow) were in commercial use forty years ago. Now they disappear into the large dunes in the area intermittently. These photographs illustrate how poorly the desert climate and soil supported vegetative cover inhibits wind erosion of the rangelands. Clearly control strategies less than onerous in design are not feasible for control of PM10 contributions from the rangelands.

In an attempt to estimate PM10 contributions from the rangeland area source the Modified Windblown Dust Equation (Ref. 7) was used. The PM10 wind erosion losses (E) were estimated to be 150.5 tons/acre/year by this equation (Fig. 13). Multiply this factor by the number of acres of open range and the potential for rangeland area source ambient PM10 contributions becomes more than adequate to account for recorded exceedances. It is notable that the climatic factor (C) supplied in the EPA document Control of Open Fugitive Dust Sources is the highest in the country at 200. This is consistent with the effect of low rainfall and high evapotranspiration rates on soil structure and texture.

Cropland Derived (Soil) PM10 Contributions

Dona Ana County has 96,030 acres of irrigated land (Ref. 8). Nearly all of this land lies within the Rio Grande river valley and is privately owned. Wind erosion of croplands is much less severe than wind erosion of rangelands. There are several reasons for this. The foremost is that irrigated soils are more well developed in structure and texture and have some degree of moisture at all times as opposed to dry desert soils. Irrigated soils are generally more clayey and alluvial in origin due to their proximity to the river valley flood plain. They are more mature as chemical weathering has had more influence in their development. They have more distinct discernible horizons in their profile and the top soil is cloddy and contains much more organic matter (see Figures 14, 15, 16 and 17).

Another reason for less wind erosion of croplands in the Anthony area is the conservation measures employed by farmers. Not only are economic crop production plants much better vegetative cover but tilling practices are consistent with conservation guidelines outlined in the conservation requirements of the Food Security Act. Appendix E is a letter and attachments from the Albuquerque Soil Conservation Service (SCS) supplying soil data on croplands in Dona Ana County and verifying that all mapped units in Dona Ana County fall into the Highly Erodible Land Listing. Appendix F is a letter from the Las Cruces office verifying compliance with Food Security Act provisions on all croplands in Dona Ana County. These conservation measures are intended to preserve top soil and therefore mitigate wind erosion.

Soil Derived PM10 Contributions from Lands Outside of New Mexico

Long range transport of PM10 is an established phenomenon. Outside of New Mexico many potential sources of soil derived PM10 exist. These include Mexican, Arizonan, Texan and Californian desert soils. The Mexican Chihuahua desert is, due to its proximity and upwind location, particularly suspect.

These sources must be taken into consideration when assessing ambient PM10 level impacts.

Open Burning on Rural Lands

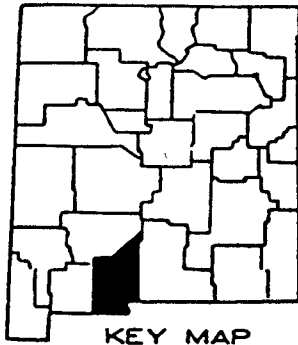
Open burning on rural lands in New Mexico is regulated under State Air Quality Control Regulation (AQCR) 301. Agricultural burning is exempt from the permitting process under AQCR 301; however, agricultural burning is limited in the Anthony area. There are no crops which require field burns in Dona Ana County. Agriculture burns are generally limited to weed control measures along ditches and fencelines normally conducted in the spring.

Rangeland burns on private property are rare and limited to control of invasive catclaw. The BLM and SCS rarely employ burning as a rangeland practice on public lands. Chemical measures are the preferred means of devegetation when necessary.

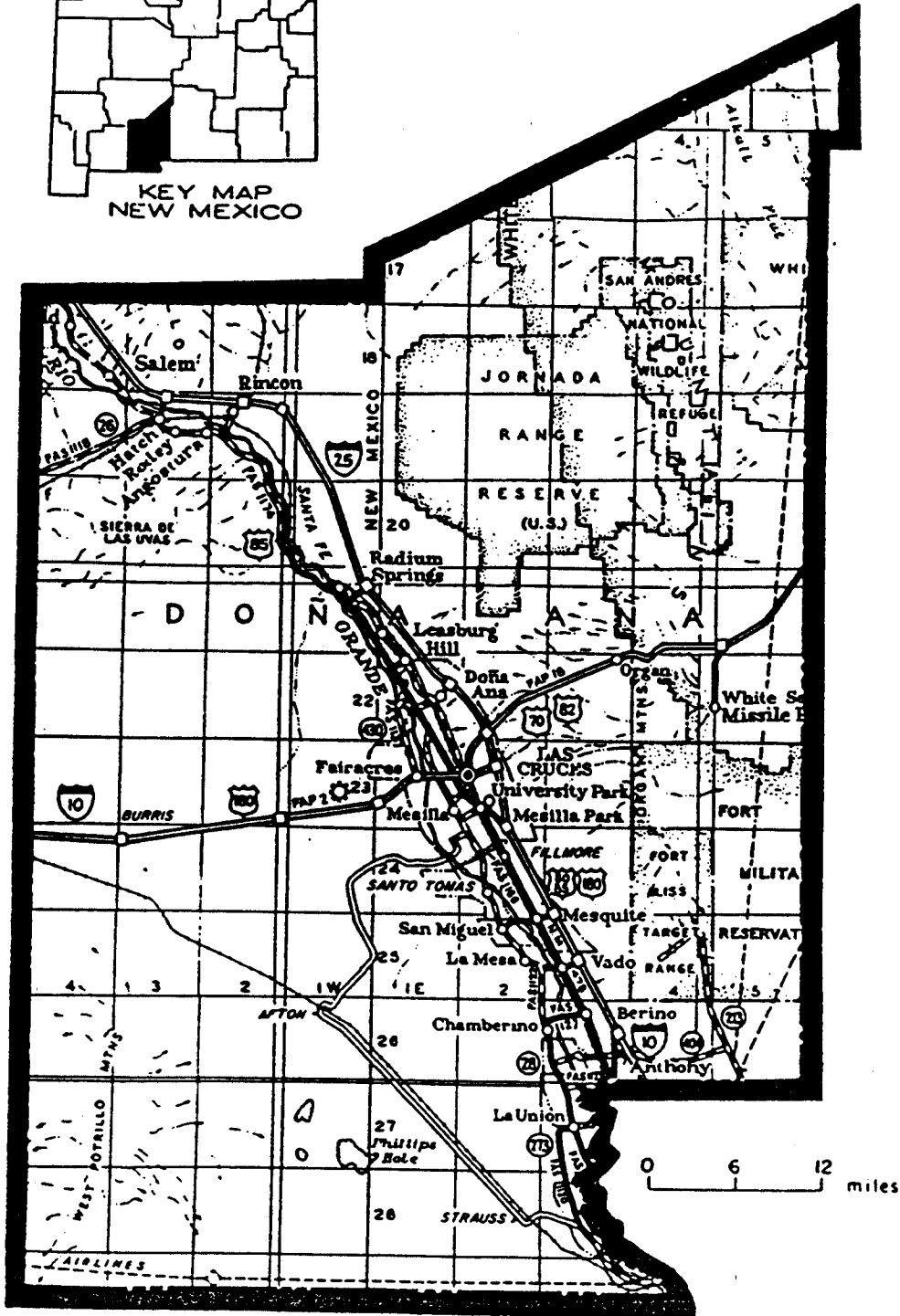
The State of New Mexico Air Quality Bureau is presently involved in a cooperative effort with land management agencies throughout the State to develop a better understanding of smoke management needs in the state. The Bureau is also upgrading permitting procedures for prescribed burns by requiring more stringent permitting conditions be met.

REFERENCES

1. New Mexico. Bureau of Business and Economic Research. Dona Ana County Profile. Albuquerque, NM. 1 Nov. 1988.
2. Las Cruces Chamber of Commerce. Las Cruces, Dona Ana County: Community Profile. 1987.
3. USDA, USCS, USDI, and BLM. Soil Survey of Dona Ana County Area New Mexico. National Cooperative Soil Survey. 1980.
4. Draft Mimbres Resource Management Plan. Courtesy of Jim McCormick, BLM.
5. Fuller, Wallace H., Soils of the Desert Southwest. The University of Arizona Press. 1975.
6. Fuller, Wallace H., Management of Southwestern Desert Soils. The University of Arizona Press. 1975.
7. USEPA OAQPS. Control of Open Fugitive Dust Sources. September 1988.
8. USDA New Mexico Department of Agriculture. New Mexico Agricultural Statistics. 1989.



KEY MAP
NEW MEXICO



DOÑA ANA COUNTY

NOTE: ALL OF THIS COUNTY IS LOCATED
WITHIN THE RIO GRANDE BASIN

Figure 1

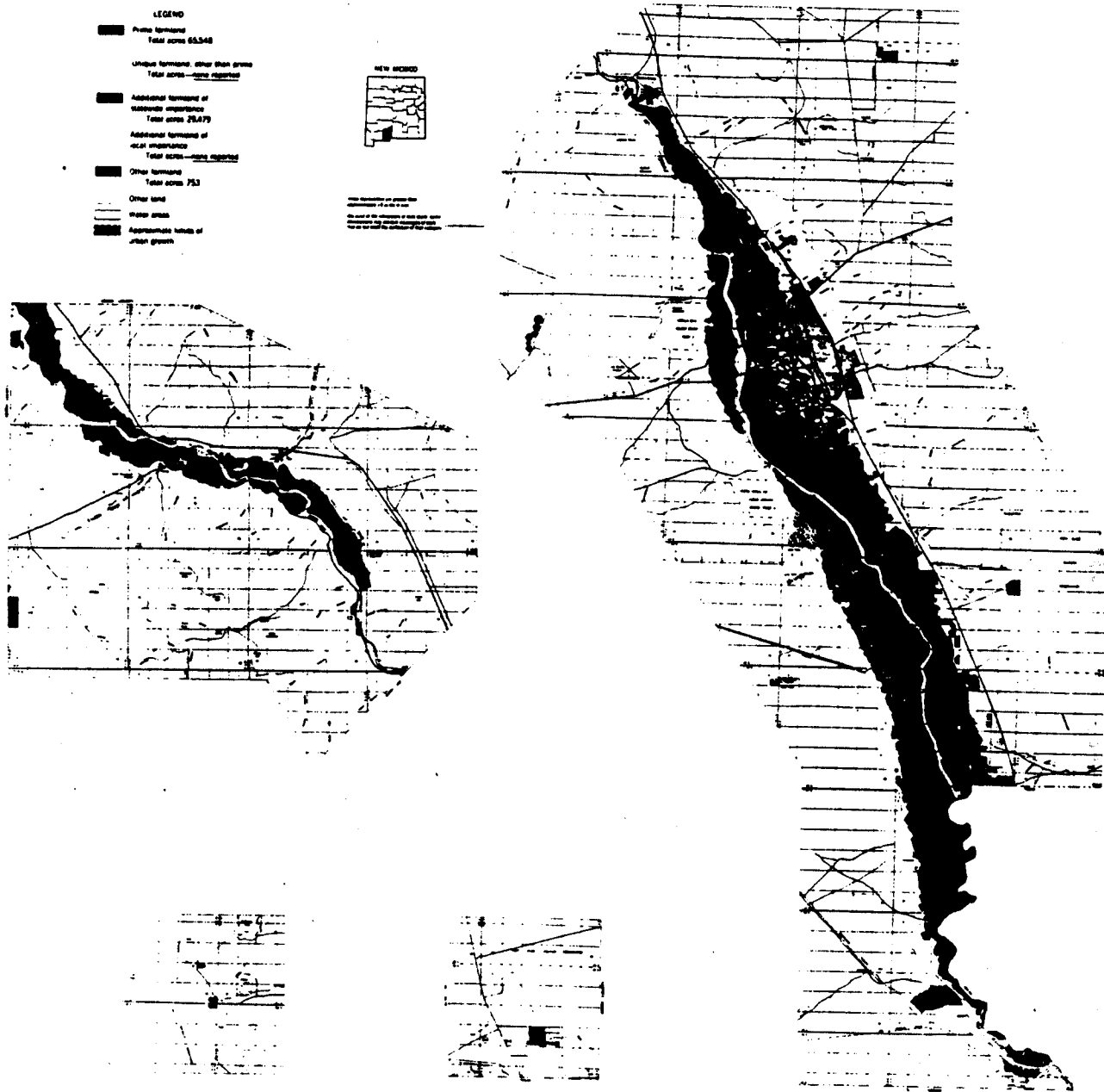




FIGURE 2


MAP UNITS


DEEP, NEARLY LEVEL, WELL DRAINED SOILS THAT FORMED IN ALLUVIUM; ON FLOOD PLAINS AND STREAM TERRACES


 Glendale-Hervey: Deep, nearly level, well drained soils that formed in alluvium; on flood plains and stream terraces


SHALLOW OR DEEP, NEARLY LEVEL TO VERY STEEP, WELL DRAINED TO EXCESSIVELY DRAINED SOILS THAT FORMED IN ALLUVIUM, ALLUVIUM MODIFIED BY WIND, AND EOLIAN MATERIAL; ON FANS, TERRACES, RIDGES, VALLEY AND BASIN FLOORS, FLOOD PLAINS, AND PIEDMONTS


 Bluepoint: Deep, gently undulating to moderately rolling, somewhat excessively drained soils that formed in alluvium modified by wind; on fans, terraces, and ridges


 Caliza-Bluepoint-Yturba: Deep, gently undulating to very steep, well drained, somewhat excessively drained, and excessively drained soils that formed in alluvium, gravelly alluvium, and alluvium modified by wind; on fans and terraces

 Pajanto-Onite-Pintura: Deep, nearly level to undulating, well drained and somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans

 Pintura-Wink: Deep, nearly level to undulating, well drained and somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans


 Benno-Dona Ana: Deep, gently undulating to undulating, well drained soils that formed in alluvium and alluvium modified by wind; on fans, piedmonts, and valley and basin floors

 Mimbres-Stellar: Deep, nearly level to gently undulating, well drained soils that formed in alluvium; on fans, basin floors, and flood plains


 Nickel-Upton: Shallow or deep, undulating to moderately rolling, well drained soils that formed in gravelly and very gravelly alluvium; on fans, terraces, ridges, and piedmonts


SHALLOW TO DEEP, NEARLY LEVEL TO UNDULATING, WELL DRAINED SOILS THAT FORMED IN RESIDUUM, ALLUVIUM, AND EOLIAN MATERIAL; ON MESAS, PLAINS, RIDGES, BASIN FLOORS, AND FANS


 Cacique-Cruces: Shallow to moderately deep, nearly level to gently sloping, well drained soils that formed in alluvium; on basin floors

 Harrisburg-Simona-Wink: Shallow to deep, gently undulating to undulating, well drained soils that formed in residuum from sandstone, eolian material, and alluvium modified by wind; on mesas, plains, ridges, and fans

ROCK OUTCROP AND SHALLOW TO DEEP, GENTLY UNDULATING TO EXTREMELY STEEP, WELL DRAINED SOILS THAT FORMED IN ALLUVIUM, COLLUVIUM, RESIDUUM, AND EOLIAN MATERIAL; ON MOUNTAINS, UPLANDS, AND RIDGES

 Rock outcrop-Motaque: Rock outcrop and shallow, moderately rolling to extremely steep, well drained soils that formed in alluvium and colluvium; on mountains

 Akela-Rock outcrop-Aftaden: Rock outcrop and shallow, gently undulating to moderately rolling, well drained soils that formed in eolian material and residuum from basalt; on lava flows, uplands, and ridges

 Rock outcrop-Tornorthents: Rock outcrop and shallow to deep, hilly to extremely steep, well drained soils that formed in alluvium and colluvium; on mountains

Compiled 1979

FIGURE 3A

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NEW MEXICO AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

DONA ANA COUNTY AREA, NEW MEXICO

Scale 1:443,520

1 0 1 2 3 4 5 6 7 MILES

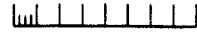
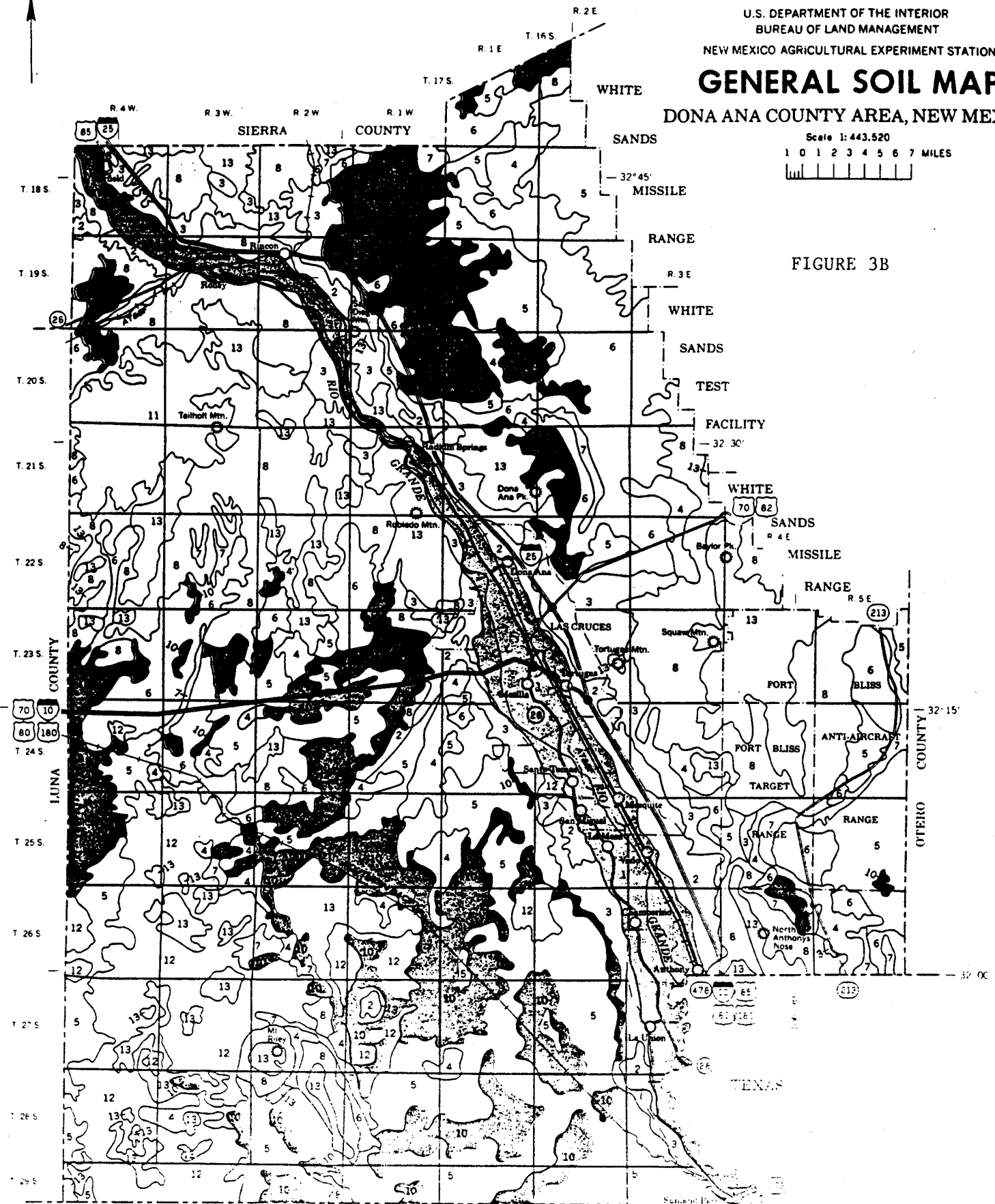


FIGURE 3B



MEXICO

VISUAL A

LAND STATUS and ALLOTMENT BOUNDARIES

LEGEND

 PLANNING AREA BOUNDARY

 ALLOTMENT BOUNDARY

3013 ALLOTMENT NUMBER

NA NOT ALLOTTED

 PUBLIC LAND

 STATE LAND

 PRIVATE LAND

 WATER & POWER
RESOURCES SERVICE

SCALE: 1/4 INCH = 1 MILE

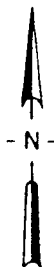


FIGURE 4A

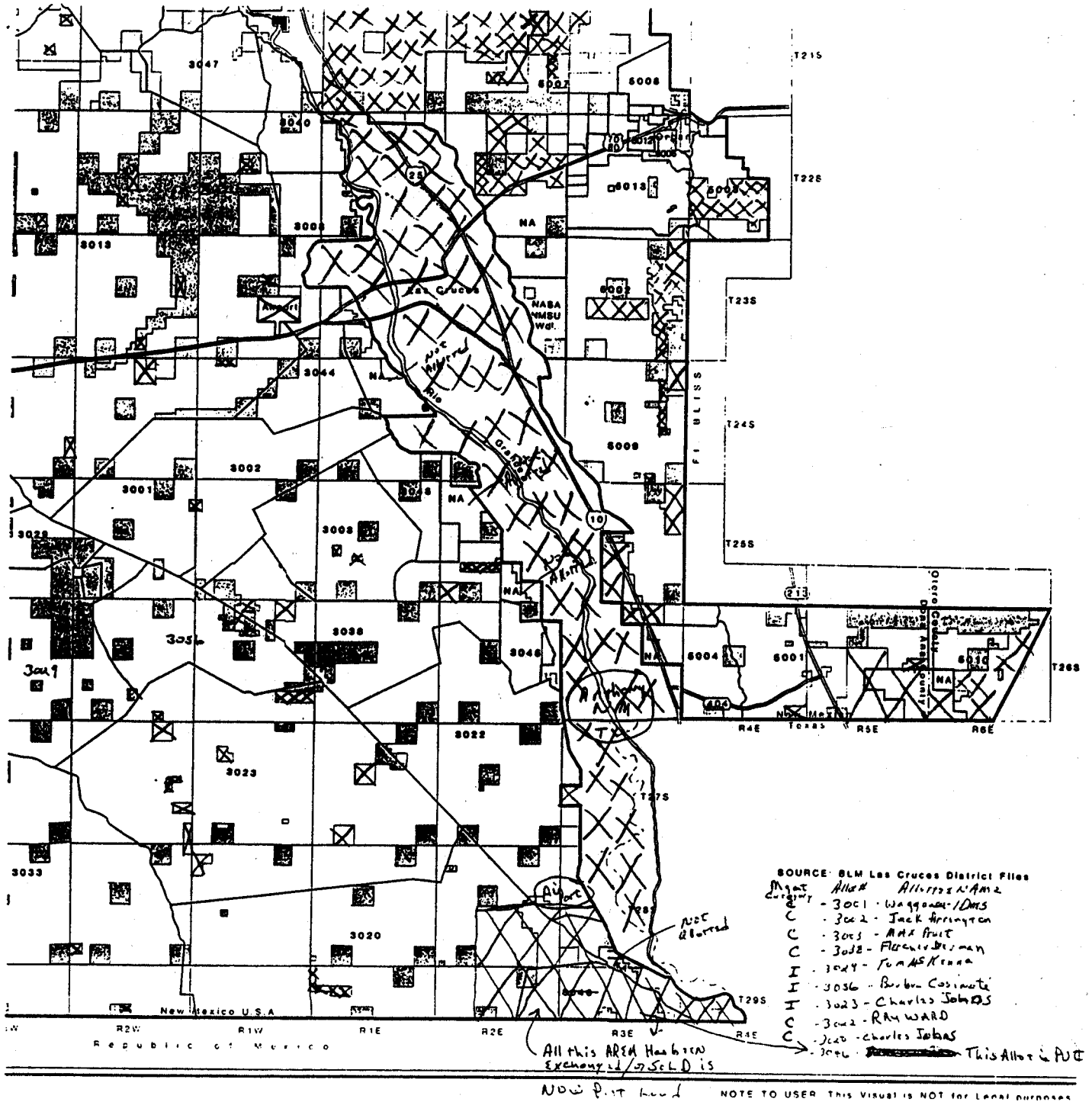


FIGURE 4B

RANGE SITES

- HILLS
- GRAVELLY
- GRAVELLY LOAM
- GRAVELLY SAND
- GRAVELLY SAND (ARROYO)
- SANDY
- DEEP SAND
- SHALLOW SAND
- LOAMY
- SALT FLATS
- BOTTOMLAND & DRAW
- CLAYEY
- BREAKS
- MALPAIS
- UNCLASSIFIED

Sites
just west
of Anthony

VEGETATION TYPES

- | | |
|------------------------------|-------------------------|
| 1 FORBS | 14 YUCCA |
| 2a SHORT GRASS | 15 WHITE THORN |
| 2b MID GRASS | 16 SOTOL |
| 2c TALL GRASS | 17 MARIOLA |
| 3 CREOSOTE BUSH | 18 SNAKEWEED |
| 4 TARBUSH | 19 WILLOW |
| 5 BROOM DALEA | 20 BURROBUSH |
| 6 WINTERFAT | 21 MORMON TEA |
| 7 MESQUITE | 22 SUMAC |
| 8 FOURWING SALT BUSH | 23 OCOTILLO |
| 9 MIXED DESERT SHRUB | 24 BEAR GRASS |
| 10 SAND SAGE | 25 DESERT WILLOW |
| 11 MOUNTAIN MCHOGANY | 26 COTTONWOOD |
| 12 OAK BRUSH | 27 MIXED MOUNTAIN SHRUB |
| 13 CACTUS | 28 PONDEROSA PINE |
| 29 PINON-JUNIPER | |
| 30 FARMLAND and UNCLASSIFIED | |

FIGURE 5A

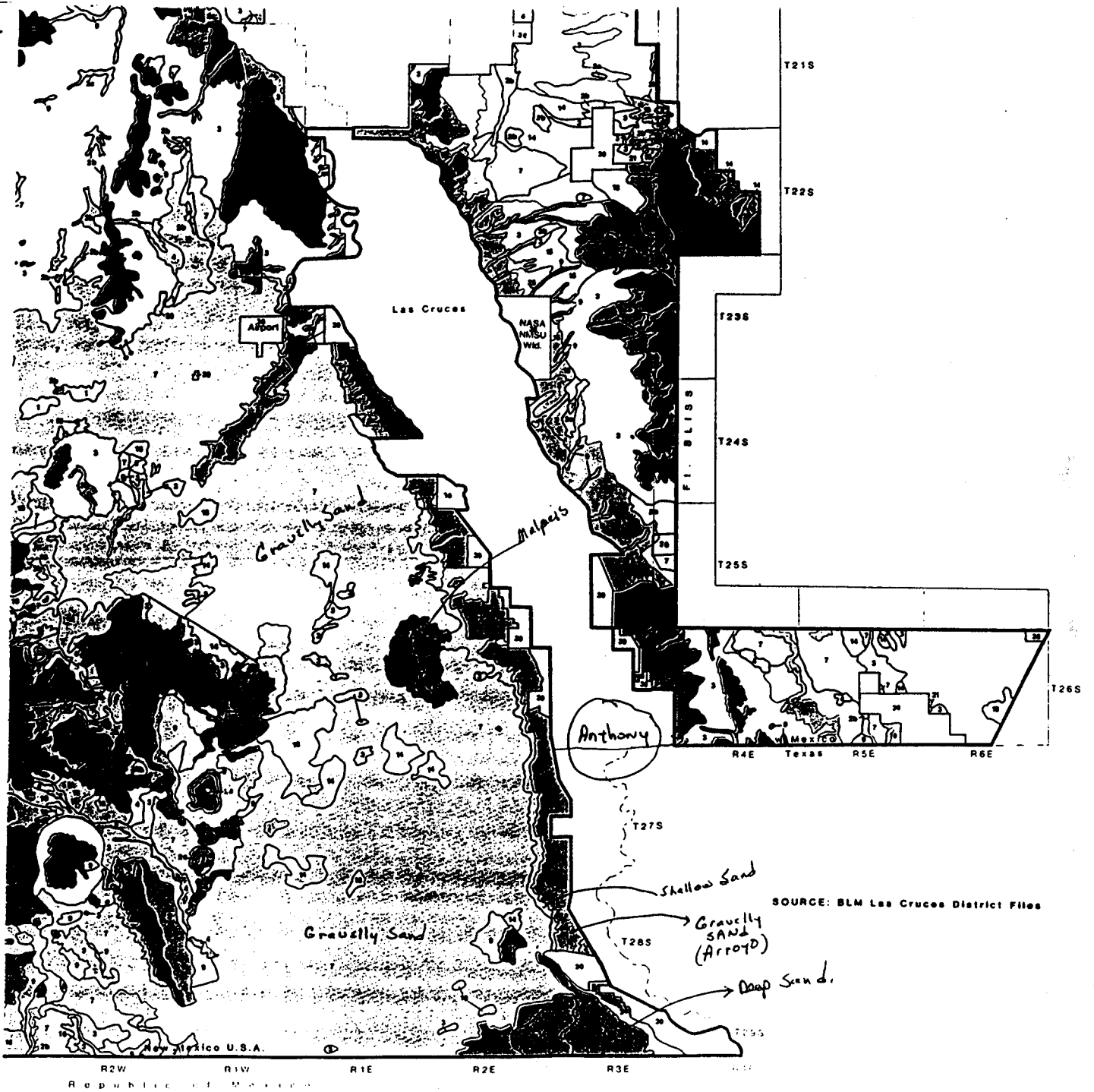


FIGURE 5B



FIGURE 6



FIGURE 7



FIGURE 8



FIGURE 9

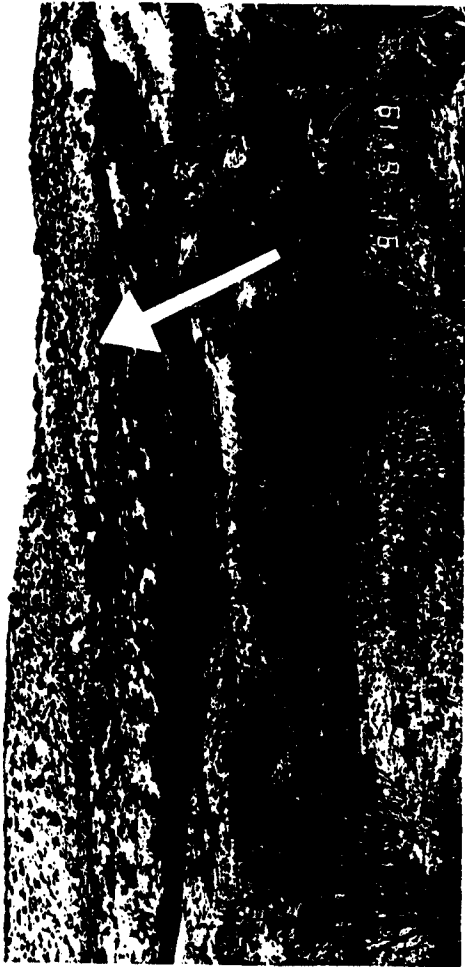


FIGURE 10



FIGURE 11



FIGURE 12

$$\begin{aligned} E &= K a I K C L' V' \\ &= 0.5 (.025) (86) (.7) (200) (1.0) (1.0) \\ &= 150.5 \text{ tons/acre/year} \end{aligned}$$

E is PM10 Wind Erosion Losses

K is Constant

a is Constant

I is from Table 7-1 and Figure 7-2

K is from Figure 7-3

C is from Figure 7-4

L' is from Figure 7-5

V' is from Figure 7-6

FIGURE 13

Windblown Dust Equation
EPA Document Control of Open Fugitive Dust Sources

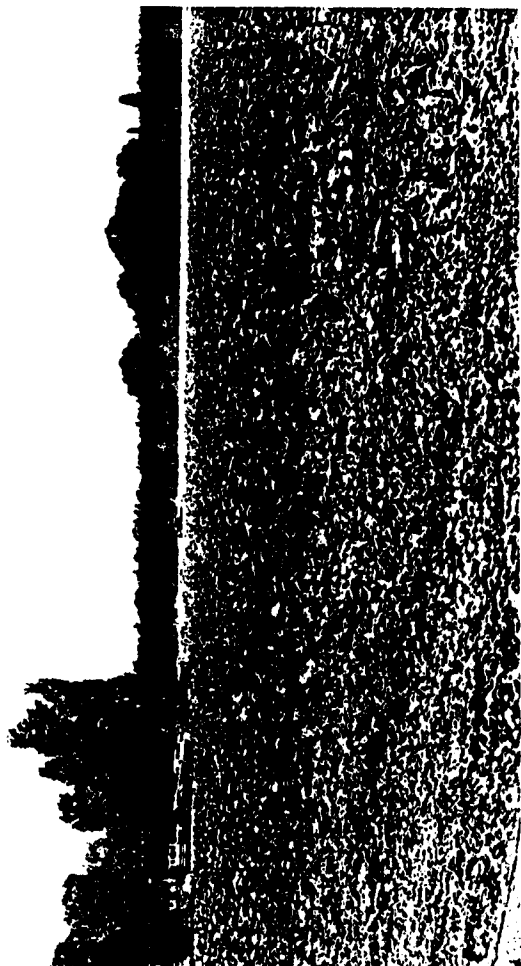


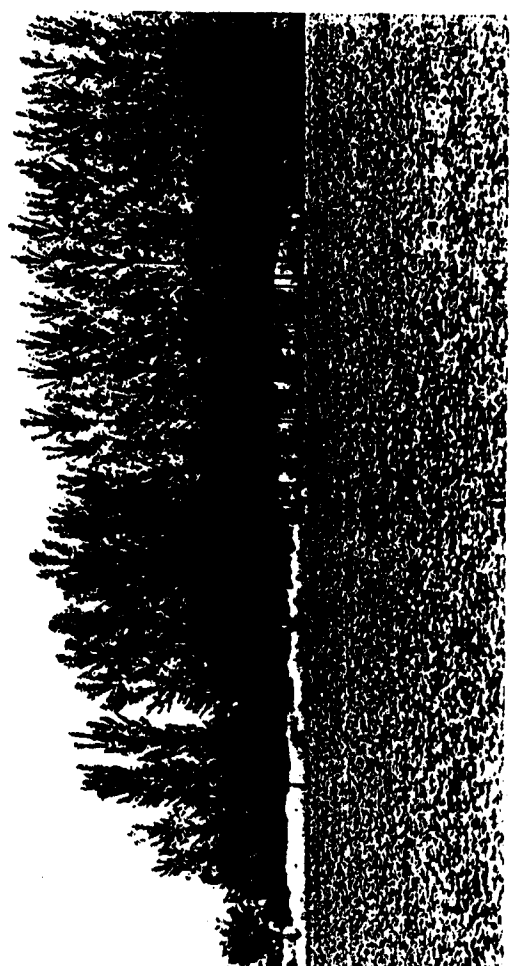
FIGURE 14



FIGURE 15



FIGURE 16



APPENDIX E

United States
Department of
Agriculture

Soil
Conservation
Service

517 Gold Ave., SW.
Room 3301
Albuquerque, NM 87102

Date: June 25, 1991
File Code: 430

Subject: SOI- Dona Ana County Soils Information

Albion Carlson
Air Quality Division
Harold Runnels Building
1190 St. Francis Drive
Santa Fe, NM 87502

As we discussed on the phone, here is the available soils data for prime farmland, farmland of statewide importance and the Highly Erodible Land listing for Dona Ana County. Also attached are the first two sheets from the Federal Register outlining the Final Rule, Food Security Act of 1985. These should be helpful in locating the document in your library. Hope you are successful in locating the old Prime and Important Farmland map.

If we can provide any other information, we would be happy to do so.



Thomas R. McKay
Assistant State Soil Scientist
Albuquerque, NM

attachments.



Mapping Units of Prime Farmland in Dona Ana, County, New Mexico (Irrigated)

August 1978

Ad Adelino sandy clay loam
Ae Adelino clay loam
Ag Agua loam
Ah Agua clay loam
An Anapra silt loam
Ao Anapra clay loam
Ar Anthony-Vinton loams
As Anthony-Vinton clay loams
Ge Glendale loam
Gf Glendale clay loam
Hg Harkey loam
Hk Harkey clay loam
Mo Mimbres silty clay loam
Vg Vinton Variant sandy clay loam

C = 100

* I = less than 60

* I values estimates based on sieving

Mapping Units of Additional Farmland of Statewide Importance in Dona Ana
County, New Mexico (Irrigated) August 1978

- Ap Anthony-Vinton fine sandy loams
- At Armijo loam
- Aw Armijo clay loam
- Ax Armijo clay
- Be Belen loam
- Bf Belen clay loam
- Bg Belen clay
- Bm Bluepoint loamy sand, 1 to 5 percent slopes
- Br Brazito loamy fine sand
- Bs Brazito very fine sandy loam, thick surface
- Cb Canuito and Arizo gravelly sandy loams
- Gg Glendale clay loam, alkali
- Hf Harkey fine sandy loam
- Hh Harkey loam, saline-alkali
- Pa Pajarito fine sandy loam
- Vf Vinton Variant fine sandy loam

APPENDIX F



United States
Department of
Agriculture

Soil
Conservation
Service

Subject: FSA Requirements

Date: 7/22/91

To: Albion Carlson
Environmental Department
Air Quality Bureau, S2100
1190 St. Francis Drive
Santa Fe, New Mexico 87502

File Code:

Dear Mr. Carlson:

Concerning your request for information about the activities of the Soil Conservation Service regarding the Food Security Act. We are presently working with the farmers of Dona Ana County to develop and implement plans that meet the requirements of the Food Security Act for wind and water erosion. Our work has shown that essentially all of the cropland in Dona Ana County is in compliance with the provisions of this Act.

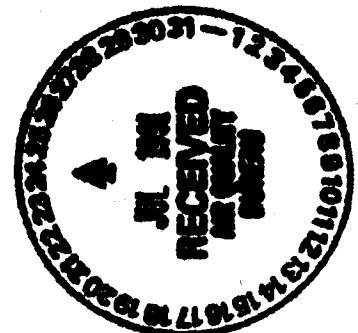
If a problem exists, of air borne particulates exceeding the limits, the source of the problem is probably something other than cropland. Possible sources include: rangelands on the west mesa, construction sites, roads, rangelands in Mexico, and from industry in the El Paso area.

If we can be of any further assistance, please let us know.

Sincerely,

John D. Allen
District Conservationist

cc/Richard T. Smith, AC
Roswell, New Mexico



APPEDDIX G

New Mexico Environmental Improvement Board
P. O. Box 968 - Crown Building
Santa Fe, New Mexico 87504-0968

AQCR 301

AIR QUALITY CONTROL REGULATION 301 - REGULATION TO
CONTROL OPEN BURNING
(Supersedes Air Quality Control Regulation 301,
filed February 7, 1983)

A. Except as otherwise provided in this regulation, no person shall permit, cause, suffer or allow open burning.

B. 1. Open burning is permitted for recreational and ceremonial purposes, for barbecuing, for heating purposes in fireplaces, for the noncommercial cooking of food for human consumption and for warming by small wood fires at construction sites.

2. Open burning of natural gas is permitted at gasoline plant and compressor stations and when used or produced in drilling, completion and workover operations on oil and gas wells when necessary to avoid serious hazard to safety.

3. Open burning of explosive materials is permitted where the transportation of such materials to other facilities could be dangerous.

C. Subject to the conditions contained in Subsection E, open burning of refuse is permitted in communities having:

1. a population of less than 3000; and

2. no public refuse collection service or the economic means of obtaining or establishing one.

Subsection C does not apply to any kind of salvage operation or to any person to whom a collection service is available.

D. Subject to the conditions contained in Subsection E, open burning is permitted for the following purposes:

1. disposal of fully dried tumbleweeds; and

2. agricultural management, excluding timber, directly related to the growing or harvesting of crops.

E. Any open burning permitted under Subsections C and D must be maintained under the following conditions:

1. the emission of smoke shall not be allowed to pass onto or across a public road or landing strip such that a hazard is created by impairment of visibility;

2. no natural or synthetic rubber or petroleum products may be burned. For the purpose of frost control in agricultural operations, natural petroleum products may be burned;

3. care must be taken to minimize the amount of dirt on the material being burned;

4. all burning, except agricultural burning, must take place between the hours of 10:00 a.m. and 4:00 p.m.;

5. the material to be burned must be as dry as possible; and

6. the wind direction at the site of agricultural burning must be such that the smoke will generally be carried away from areas of human habitation.

F. Subject to whatever conditions the department may impose, open burning is permitted for the following purposes when a permit is obtained from the department: weed abatement; prevention of fire hazards; disposal of dangerous materials; instruction and training of bona fide fire-fighting and fire-rescue personnel; civil defense; conservation; game management; disease and pest control; land clearance for highway construction; forestry management; control of vegetation in irrigation ditches and canals; clearance and maintenance of watercourses and flood control channels to eliminate flood hazards; disposal of hydrocarbons spilled or lost from pipeline breaks or other transport failures; and other special circumstances.

G. A permit to burn shall not be issued if the department determines that:

1. a practical alternative to burning exists;

2. the health or welfare of any other person may be detrimentally affected; or

3. ambient air quality of other property may be detrimentally affected.

H. Any person seeking a permit to open burn shall do so by submitting a request to the Air Quality Control Unit of the department. The department may require the requestor to submit his request in writing and any or all of the following information:

1. the requestor's name, address and telephone number;

2. the location where the burning is to be conducted;

3. the type and quantity of material to be burned;

4. the date when the burning is to be conducted;

5. the methods that will be followed to ignite, maintain and control the burning;

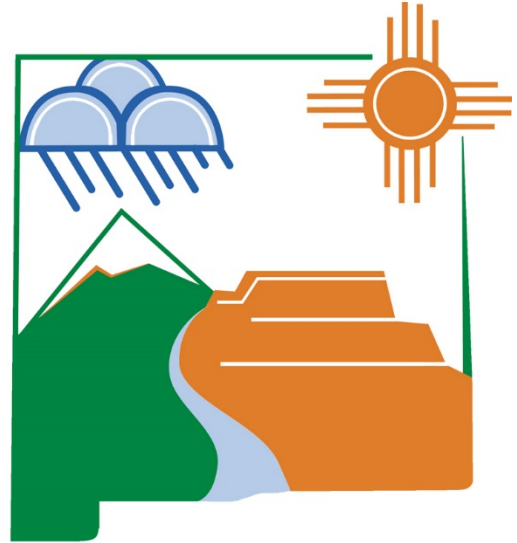
6. reasons why the requestor believes the burning is necessary; and

7. the alternatives to burning and the reasons why the requestor believes them not to be feasible.

I. As used in this regulation "open burning" means any manner of burning not in a device or chamber designed to achieve combustion, where the products of combustion are emitted, directly or indirectly, into the open air.

NMED

New
Mexico
Environment
Department



2015 Ozone NAAQS

DESIGNATION RECOMMENDATION REPORT

Air Quality Bureau
September 2, 2016

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1 Introduction

On October 1, 2015, the United States Environmental Protection Agency (EPA) revised the 2008 8-hour ozone National Ambient Air Quality Standard (NAAQS) from 0.075 parts per million to 0.070 parts per million (ppm) ([80 FR 65291; October 26, 2015](#)). Section 107(d)(1)(A) of the Federal Clean Air Act (CAA) requires states to submit to EPA recommendations on area designations no later than one year after the promulgation of a new or revised NAAQS. Areas are to be identified as attainment, nonattainment, or unclassifiable. The deadline for submitting these recommendations is October 1, 2016.

The State of New Mexico recommends that the counties under the jurisdiction of the New Mexico Environment Department (NMED), exclusive of tribal lands and Bernalillo County, be designated as identified in Table 1-1 below. These recommendations rely on air quality monitoring data using the most recent three consecutive years of quality-assured data (2013-2015) and EPA's February 25, 2016 Memorandum, Area Designations for the 2015 Ozone National Ambient Air Quality Standards (Guidance Memo), as the basis for its recommendations. The Guidance Memo can be found on EPA's website at www.epa.gov/ozone-designations/ozone-designations-guidance-and-data. The data for 2013-2015 for all ozone monitors are presented in Appendix A.

NMED conducted an analysis to determine whether New Mexico would recommend the presumptive boundary for Doña Ana County area designation, or propose an alternate boundary. EPA recommends that the Core Based Statistical Area (CBSA) serve as the presumptive boundary when considering the geographic boundaries of an ozone nonattainment area. Since the CBSA that covers Doña Ana County includes El Paso and Hudspeth Counties in Texas, NMED will use the Las Cruces Metropolitan Statistical Area (MSA). The Las Cruces MSA includes the entirety of Doña Ana County and serves as the presumptive boundary. To assist with the nonattainment boundary recommendation, NMED evaluated the 5 factors listed in Attachment 3 of the Guidance Memo, as follows:

- Air quality data;
- Emissions and emissions-related data;
- Meteorological data;
- Geography/topography; and
- Jurisdictional boundaries.

Based on the results of the analysis, NMED has decided to recommend an area smaller than the Las Cruces MSA as nonattainment.

Table 1-1: New Mexico County Designation Recommendations for the 2015 Ozone NAAQS.

County	2013-2015 Design Value (ppm)	Designation Recommendation
Bernalillo County	Not in NMED’s jurisdiction	Not in NMED’s jurisdiction
Catron County	No data	Attainment/Unclassifiable
Chaves County	No data	Attainment/Unclassifiable
Cibola County	No data	Attainment/Unclassifiable
Colfax County	No data	Attainment/Unclassifiable
Curry County	No data	Attainment/Unclassifiable
De Baca County	No data	Attainment/Unclassifiable
Doña Ana County	La Union --- 0.066	Nonattainment - partial
	Chaparral --- 0.067	
	Desert View --- 0.072	
	Santa Teresa --- 0.072	
	Solano --- 0.065	
Eddy County	Carlsbad --- 0.069	Attainment
Grant County	No data	Attainment/Unclassifiable
Guadalupe County	No data	Attainment/Unclassifiable
Harding County	No data	Attainment/Unclassifiable
Hidalgo County	No data	Attainment/Unclassifiable
Lea County	Hobbs --- 0.067	Attainment
Lincoln County	No data	Attainment/Unclassifiable
Los Alamos County	No data	Attainment/Unclassifiable
Luna County	No data	Attainment/Unclassifiable
McKinley County	No data	Attainment/Unclassifiable
Mora County	No data	Attainment/Unclassifiable
Otero County	No data	Attainment/Unclassifiable
Quay County	No data	Attainment/Unclassifiable
Rio Arriba County	Coyote Ranger District --- 0.065	Attainment/Unclassifiable
Roosevelt County	No data	Attainment/Unclassifiable
Sandoval County	Bernalillo --- 0.065	Attainment
San Juan County	Bloomfield --- 0.064	Attainment
	Navajo Lake --- 0.067	
	Substation --- 0.063	
San Miguel County	No data	Attainment/Unclassifiable
Santa Fe County	Santa Fe Airport --- 0.064	Attainment/Unclassifiable
Sierra County	No data	Attainment/Unclassifiable
Socorro County	No data	Attainment/Unclassifiable
Taos County	No data	Attainment/Unclassifiable
Torrance County	No data	Attainment/Unclassifiable
Union County	No data	Attainment/Unclassifiable
Valencia County	Los Lunas --- .066	Attainment/Unclassifiable
(Bold – exceeds NAAQS)		

2 Air Quality Data

The ozone monitoring network in Doña Ana County contains 5 federal regulatory design-value monitors operated and maintained in accordance with 40 CFR Parts 50, 53, and 58. Table 2-1 below contains information on the current ozone monitors in Doña Ana County. To determine compliance with the 2015 Ozone NAAQS, a design value must be calculated to compare to the level of the standard. The design value is determined by the 3-year average of the annual 4th highest 8-hour ozone average.

Table 2-1: Doña Ana County Monitoring Data (ppm).

Site Name	AQS ID #	4 th Max 8-hour Average			Design Value (2013 – 2015)
		2013	2014	2015	
Desert View	35-013-0021	.071	.072	.074	.072
Santa Teresa	35-013-0022	.080	.066	.070	.072
La Union	35-013-0008	.067	.065	.070	.066
Chaparral	35-013-0020	.069	.067	.065	.067
Solano Road	35-013-0023	.064	.066	.066	.065

(Bold – exceeds NAAQS)

Within the Doña Ana County monitoring network, two monitors have recorded levels that exceed the revised 8-hour ozone standard of 0.070 ppm for the years 2013-2015 (Figure 2-1). Both the Desert View and Santa Teresa monitors have a 2013-2015 design value of 0.072 ppm. Other monitors within Doña Ana County have design values between 0.065 and 0.067 ppm. Figure 2-2 below shows the location of ozone monitoring sites in Doña Ana County.

Figure 2-1: Doña Ana County 2013-2015 Ozone Monitoring Data.

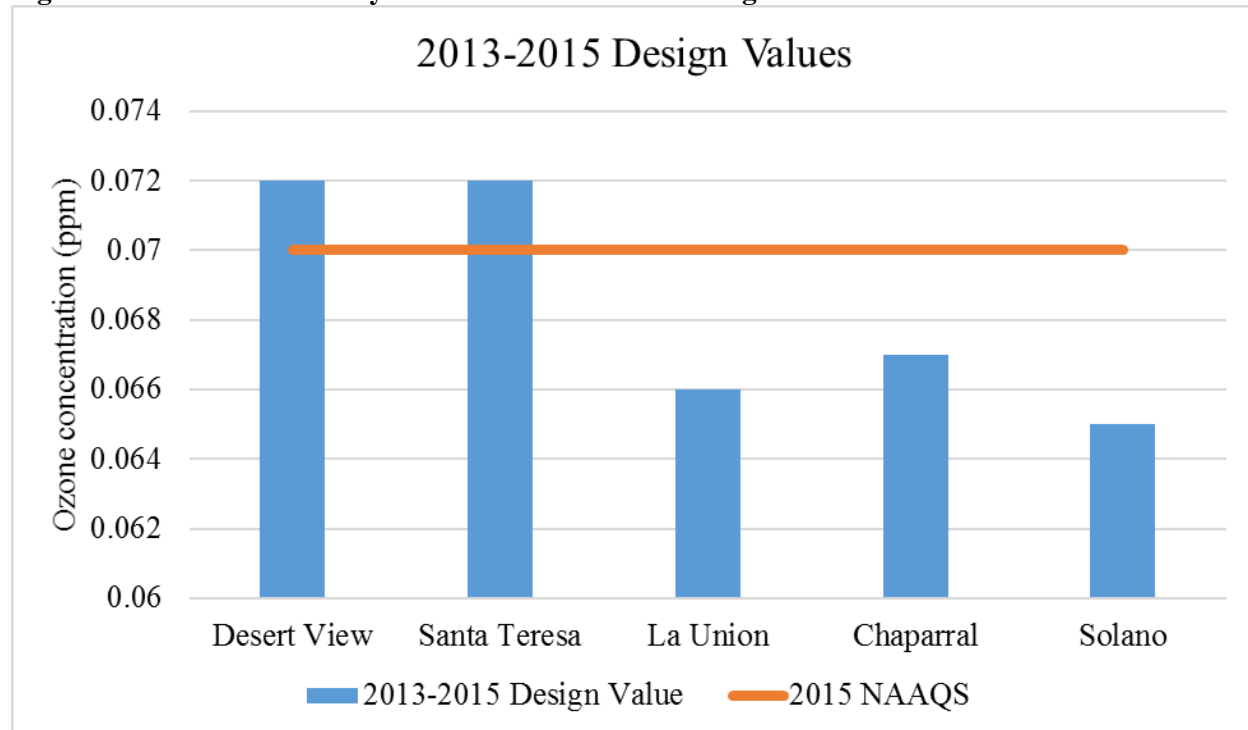
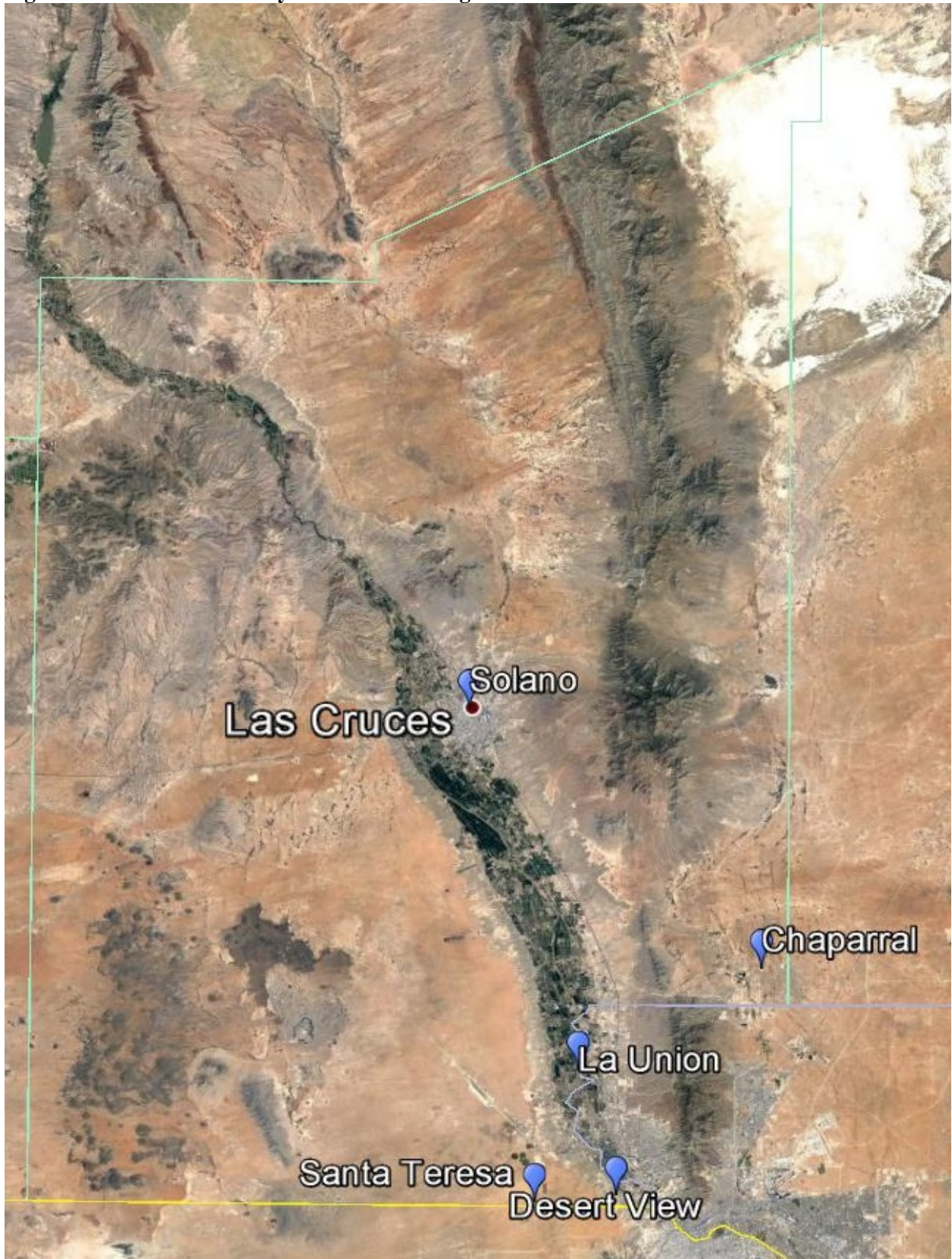


Figure 2-2: Doña Ana County Ozone Monitoring Network.

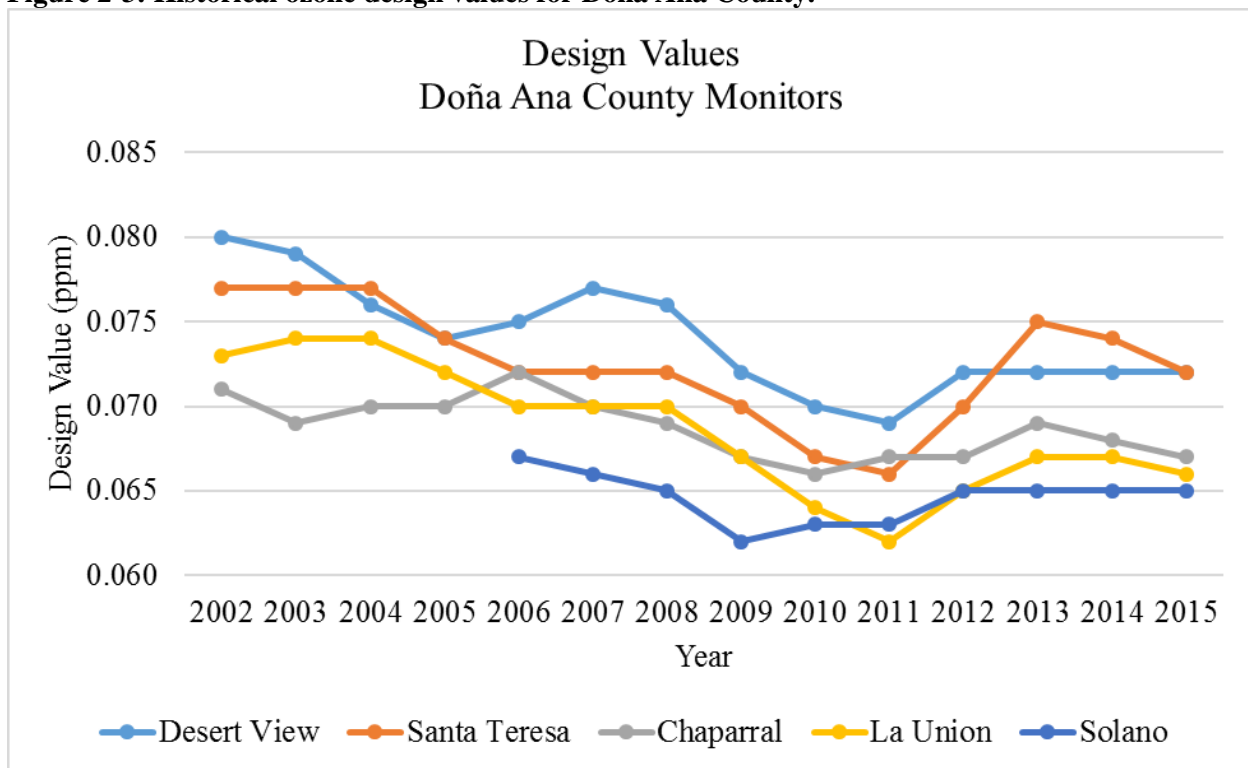


The two monitors that violate the NAAQS are both located in the southern-most portion of the county, north of Mexico and west of Texas. The monitors are located in the city of Sunland Park and the unincorporated area of Santa Teresa, New Mexico, near the international border with Mexico and the state line of Texas.

Established in June 2004, the Desert View monitor is located at 5935 Valle Vista in Sunland Park, New Mexico at an elevation of 3860 feet. This monitoring site measures NO₂, O₃, PM₁₀, PM_{2.5}, and meteorological data. Also established in June 2004, the Santa Teresa monitor is located at 104-2 Santa Teresa International Blvd, west of Sunland Park, New Mexico at an elevation of 4100 feet. This monitoring site measures NO₂, O₃, and meteorological data.

Historical 8-hr ozone design values for the Doña Ana County ozone monitors are shown in Figure 2-3 below.

Figure 2-3: Historical ozone design values for Doña Ana County.



3 Emissions and Emissions-related Data

Ozone is not emitted directly from specific sources, but rather is formed as the result of complex atmospheric processes of precursor gases. The primary precursor pollutants are nitrogen oxides (NO_x) and Volatile Organic Compounds (VOC). To determine the sources and levels of NO_x and VOC, NMED evaluated emissions data from Doña Ana County and nearby sources using the 2011 National Emissions Inventory (2011 NEIv2). For purposes of this analysis, NMED interpreted nearby sources to include those sources located in counties (U.S.) and municipalities (Mexico) surrounding the violating monitors within the El Paso-Las Cruces CBSA.

3.1 NO_x Emissions

Total NO_x emissions in Doña Ana County were estimated at 11,506 tons/year for 2011. On-road mobile sources comprise the majority of NO_x emissions, with 7,535 tons/year or 65% of all NO_x emissions. Area sources account for the second largest amount of NO_x emissions, with 2,278 tons/year. One point source in the county, the Rio Grande Generating Station, emitted more than 100 tons/year of NO_x (717 tons/year), accounting for 84% of point source NO_x emissions. The nearby counties have a similar emissions profile, as shown in Figure 3-1.

Emissions data for Ciudad Juárez is coarser than that for the U.S. counties, being classified only by area, mobile, and point sources. For purposes of comparison, NMED classified emissions into these three source categories by including fire emissions into area sources and combining nonroad and onroad emissions into mobile sources. Although a similar pattern for Cd. Juárez emission sources is seen in Figure 3-2, point sources account for a much larger portion of total NO_x emissions.

Figure 3-1: NO_x emissions by county and source category.

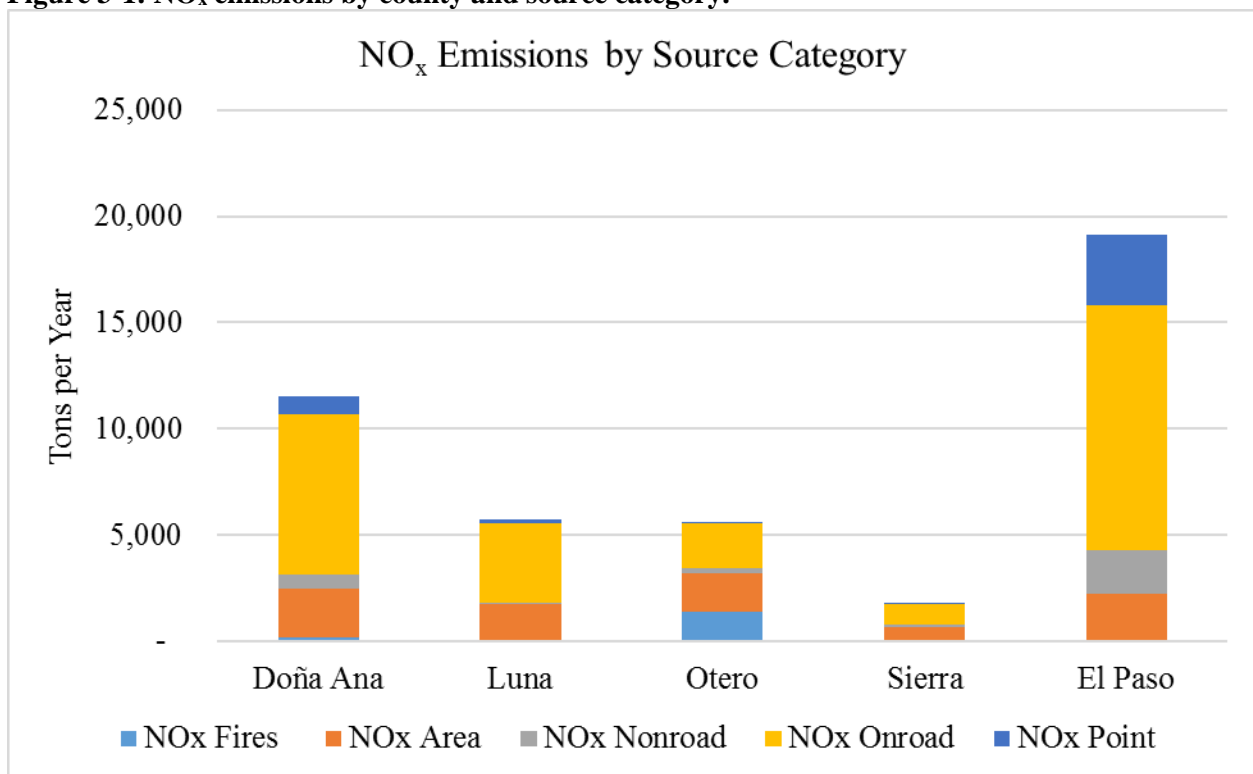
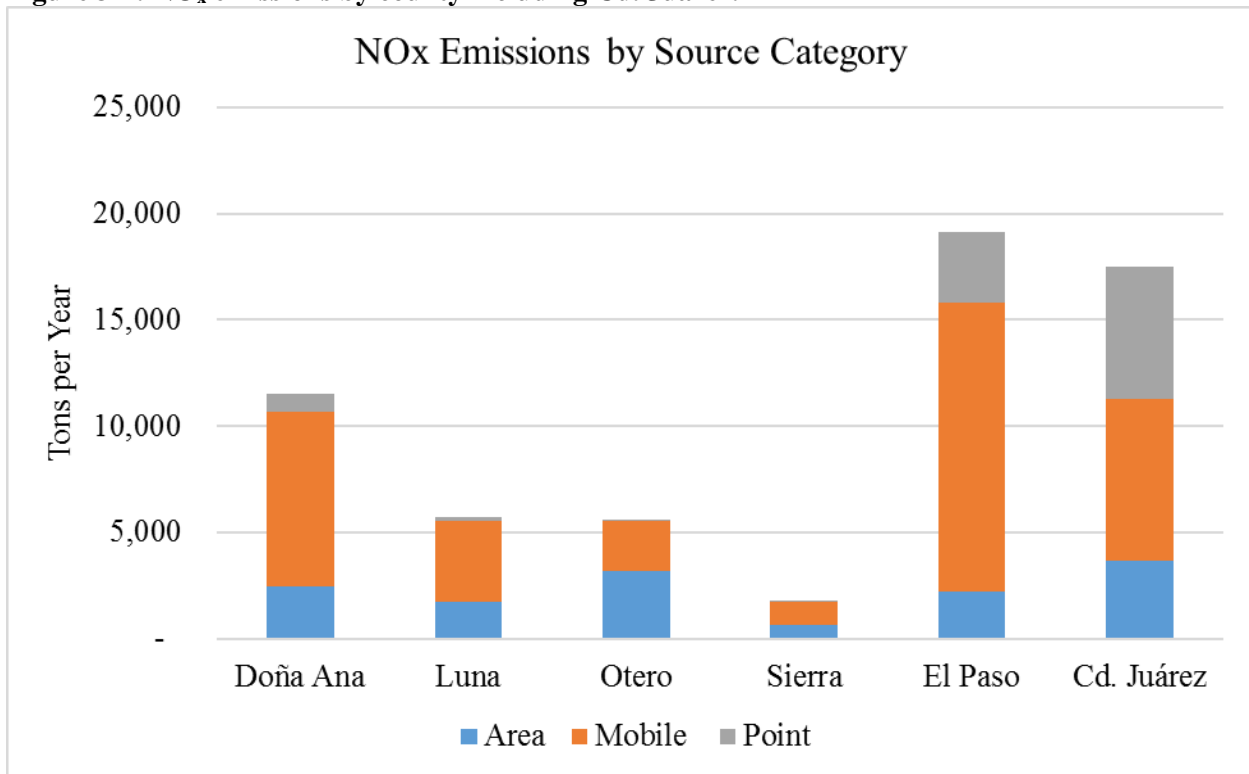


Figure 3-2: NO_x emissions by county including Cd. Juárez.



The areas with the highest NO_x emissions – Doña Ana County, El Paso County, and Cd. Juárez – comprise the Paso del Norte Airshed. El Paso County and Cd. Juárez account for 76% of total NO_x emissions in the airshed (Figure 3-3). Facilities in El Paso County and Cd. Juárez account for 92% of point source NO_x emissions in the airshed (Figure 3-4).

Figure 3-3: Percentage of total NO_x emissions in the Paso del Norte Airshed.

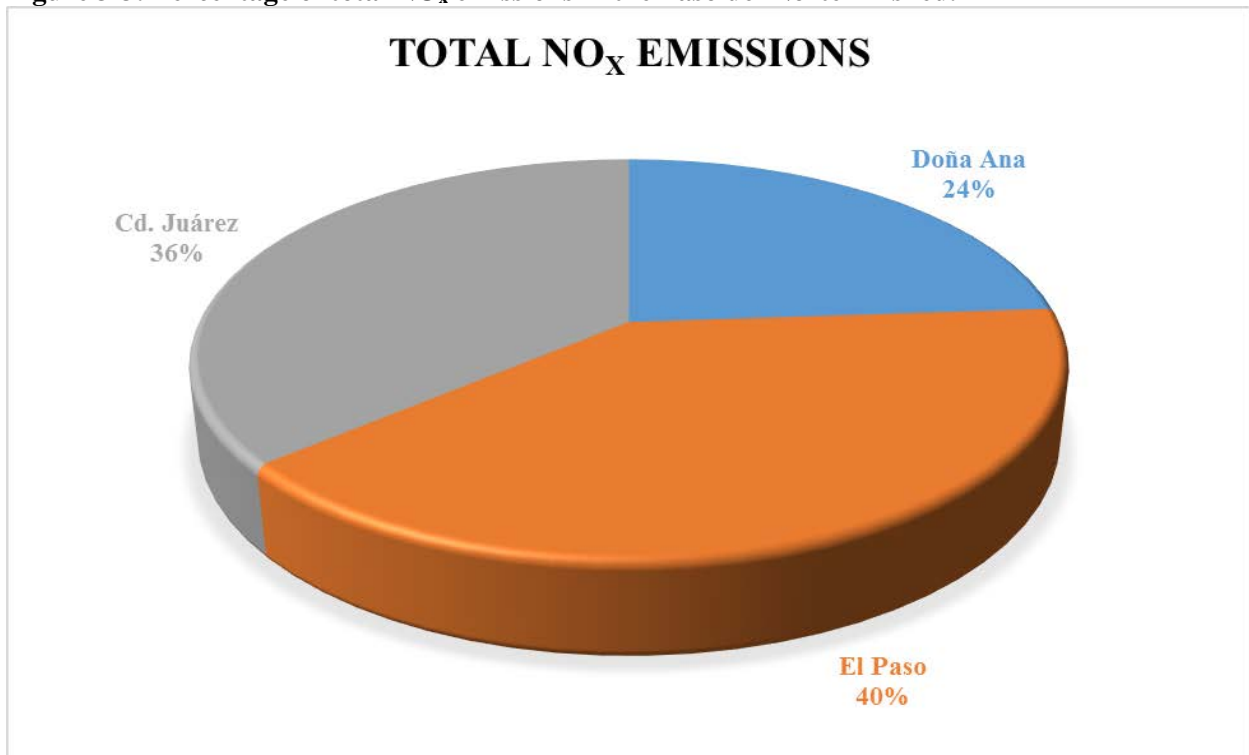
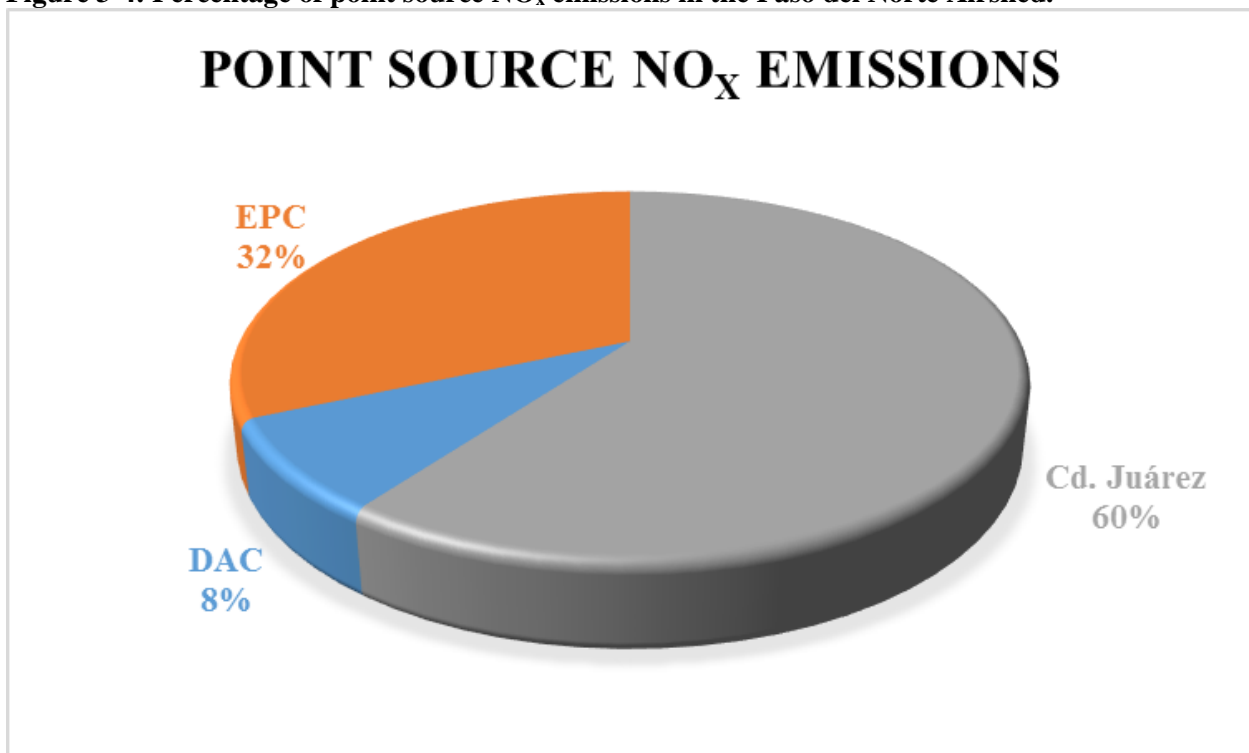


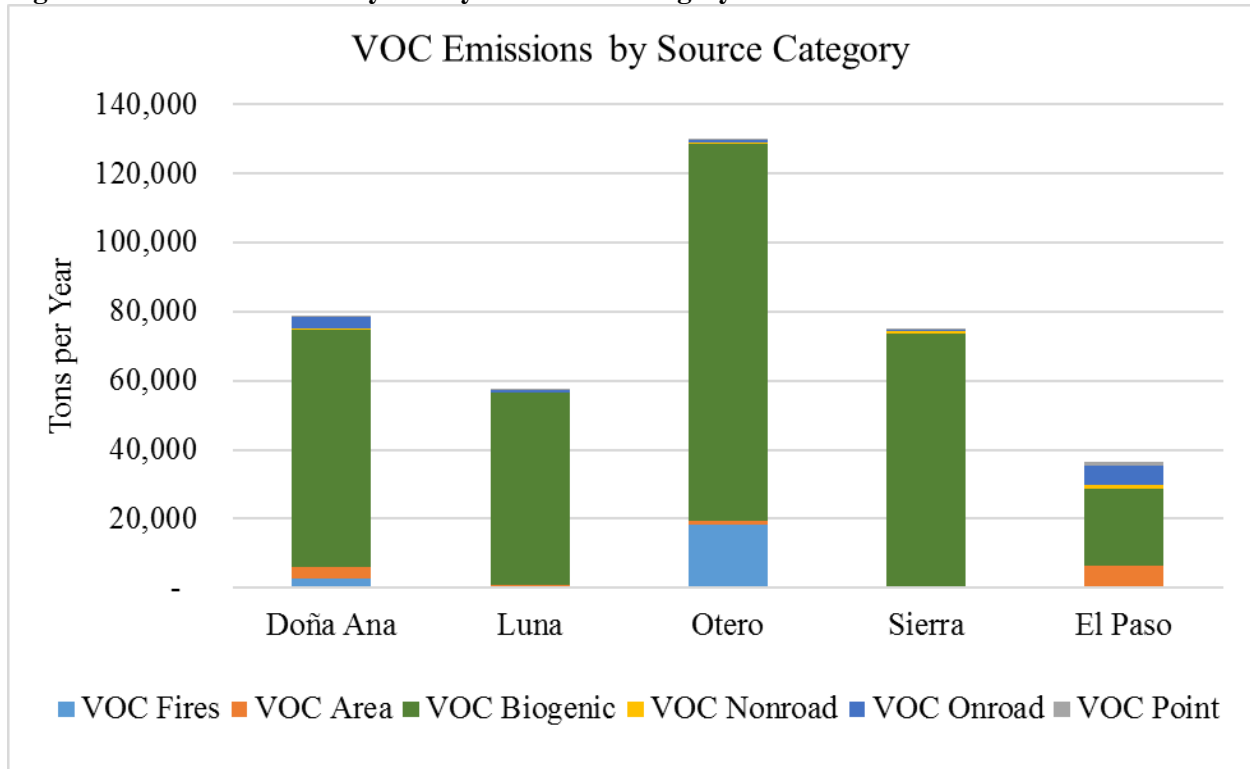
Figure 3-4: Percentage of point source NO_x emissions in the Paso del Norte Airshed.



3.2 VOC Emissions

Total VOC emissions for Doña Ana County were 78,432 tons/year in 2011. Biogenic emissions from plants and soil account for the largest source of emissions, with 68,667 tons/year or approximately 88% of all emissions. On-road mobile and area sources account for nearly the same amount of VOC emissions, with 3,154 tons/year and 3,140 tons/year respectively, followed by fires, with 2,869 tons/year. Most of the nearby counties follow this pattern with the exception of Otero County, which had much higher VOC emissions from fire than the other counties. This is most likely due to the 2011 Donaldson wildfire in the Lincoln National Forest.

Figure 3-5: VOC emissions by county and source category.



Similar to the NO_x emissions profile, the data for Cd. Juárez was classified only by area, mobile, and point sources. To compare emissions from the U.S. and Mexico, NMED classified emissions into these three source categories, but did not include biogenic VOC emissions. Although a similar pattern for Cd. Juárez emission sources is seen in Figure 3-6, area sources account for a much larger portion of total VOC emissions, excluding Otero County where fire accounted for 94% of area source VOC emissions in 2011.

In the Paso del Norte Airshed, El Paso County and Cd. Juárez account for 84% of total VOC emissions in the airshed (Figure 3-7). Facilities in El Paso County and Cd. Juárez account for 99% of point source VOC emissions in the airshed (Figure 3-8).

Figure 3-6: VOC emissions by county including Cd. Juárez.

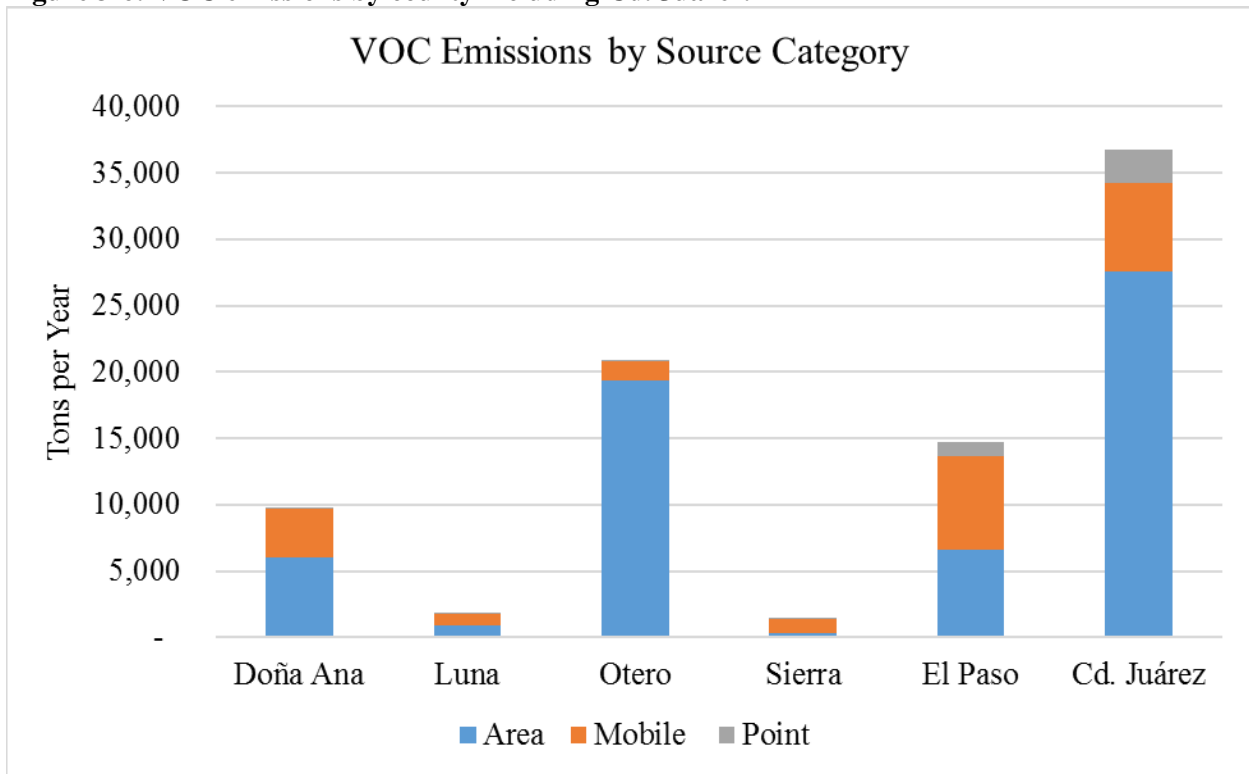


Figure 3-7: Percentage of total VOC emissions in the Paso del Norte Airshed.

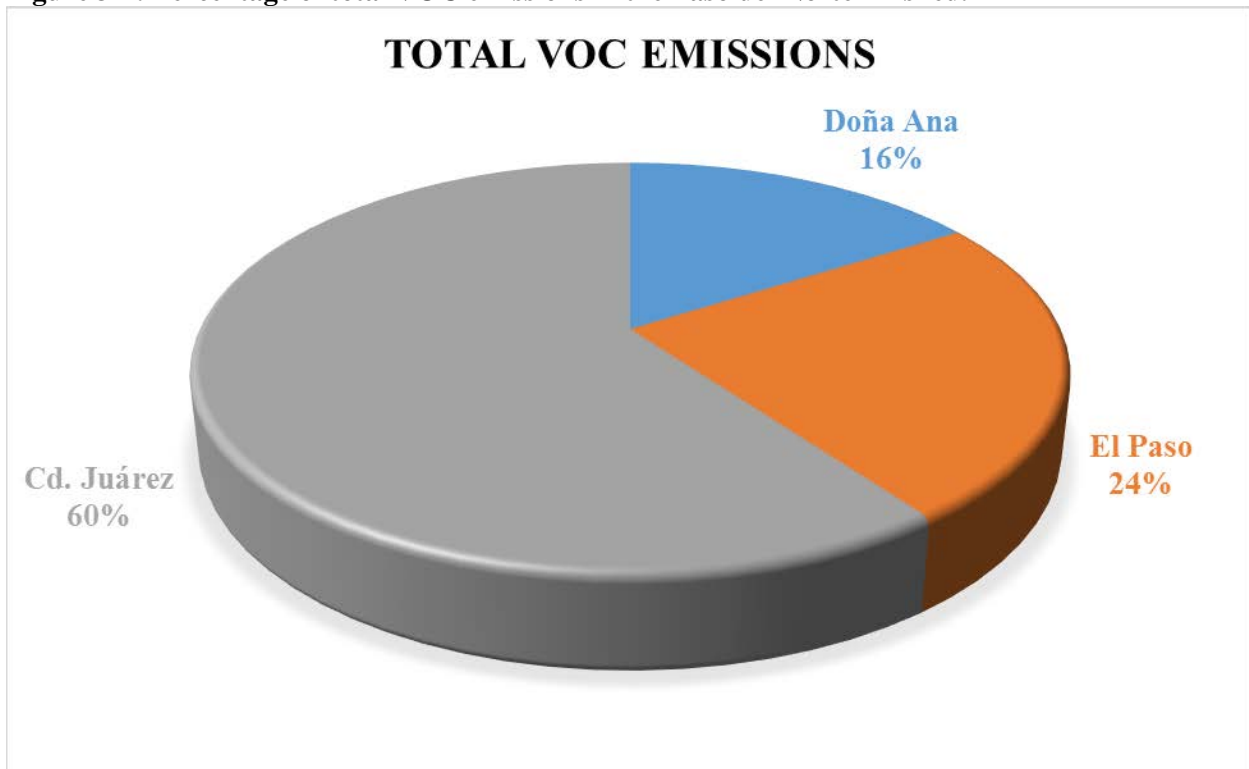
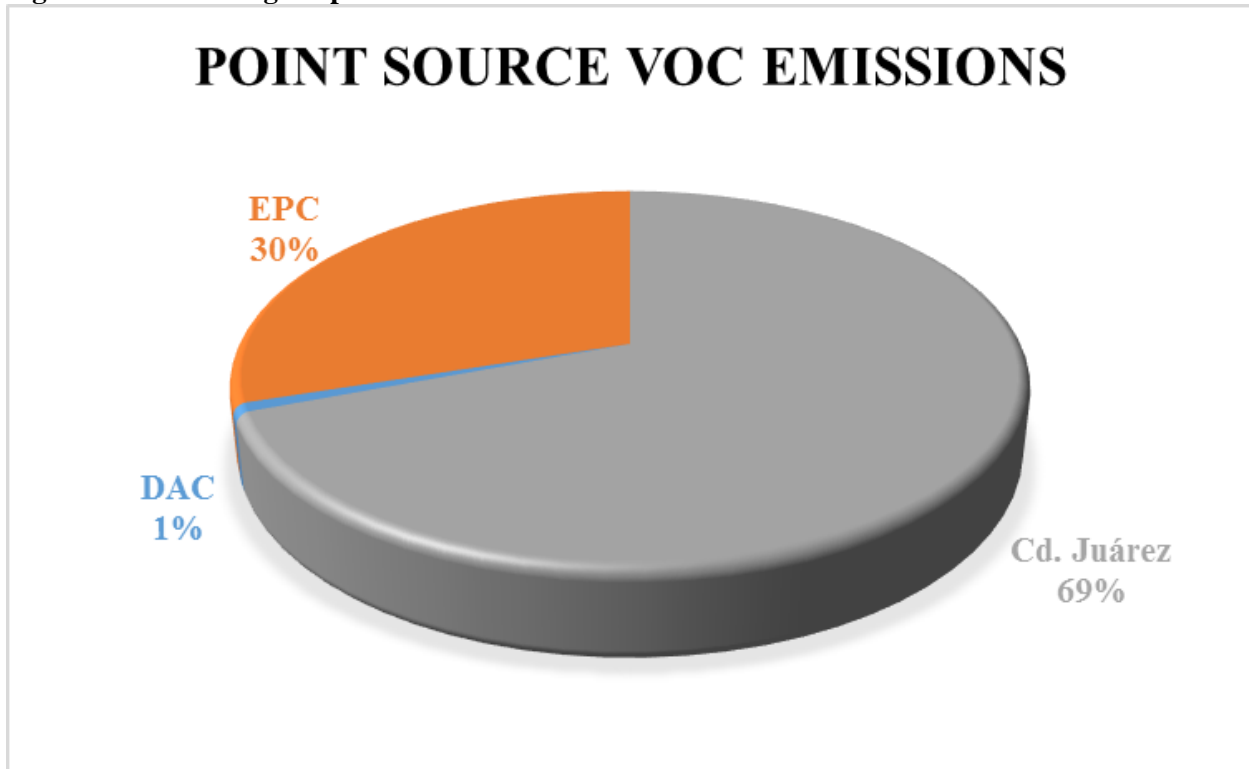


Figure 3-8: Percentage of point source VOC emissions in the Paso del Norte Airshed.



3.3 Population and Degree of Urbanization

Population estimates and related data were obtained from the U.S. Census Bureau and the National Institute of Statistics and Geography in Mexico and are summarized in Table 3-1, below. Estimates for 2014 indicate that approximately 2.4 million people live in Doña Ana County, El Paso County and Cd. Juárez. The majority of the population in the airshed lives in the heavily urbanized areas in the city of El Paso and Cd. Juárez. Doña Ana County residents make up approximately 9% of this population with the majority living in and around the city of Las Cruces, nearly 40 miles to the north of the violating monitors.

To estimate the population in Doña Ana County living near the violating monitors, NMED used 2014 U.S. Census estimates from the city of Sunland Park, and the Census Designated Places of La Union and Santa Teresa (Sunland Park Area). These areas cover approximately 26.5 mi² with a population of 20,324. Although the resulting population density of 767 people/mi² would classify this area as rural, the U.S. Census Bureau classifies them as urban due to the close proximity and interconnectedness to El Paso and Cd. Juárez.

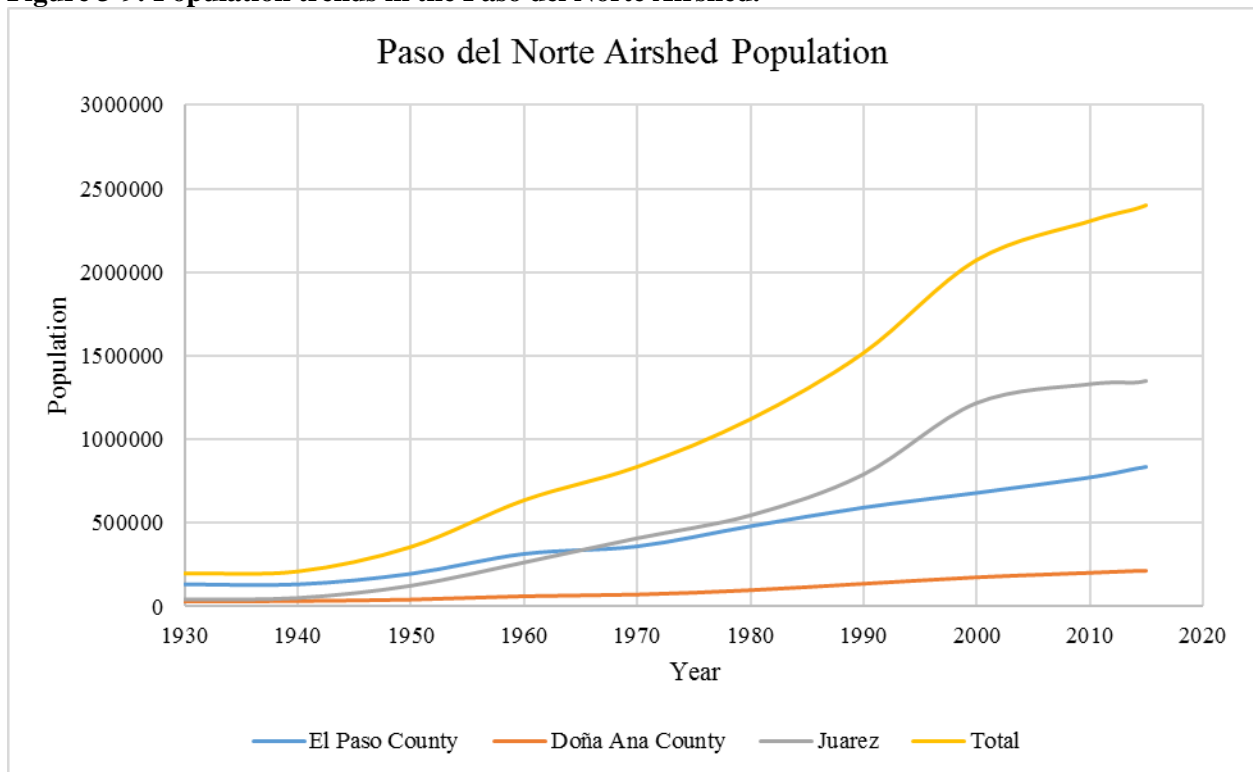
Table 3-1: Population and Population Density.

	Doña Ana County	El Paso County	Cd. Juárez	Sunland Park Area
Population	212,942	823,862	1,341,717	20,324
Land Area (mi ²)	3,808	1,013	73	26.5
Density (people/mi ²)	56	813	18,380	767

After experiencing steady population growth of 4.2% annually throughout the 20th century, Doña Ana County, El Paso County, and Cd. Juárez saw slow to moderate growth from 2000 to 2010 with a 1.1% annual growth rate. This slowdown in growth continued from 2010 to 2014. Much of these population trends are driven by the core urban areas of El Paso and Cd. Juárez (Figure 3-9).

From 2010 to 2014 the Sunland Park Area grew from 18,903 to 20,324 residents for an annual growth rate of 1.9%. Although this is much larger than the 0.79% growth rate for the entire area during this time, the absolute number of people is small.

Figure 3-9: Population trends in the Paso del Norte Airshed.



3.4 Traffic and Commuting Patterns

The major thoroughfares in Doña Ana County are Interstate 25 and Interstate 10. Most vehicular traffic in the county is concentrated in the central and southern parts of the county, in and around Las Cruces, as well as along Interstate 10 which connects to El Paso. Using the Vehicle Miles Traveled (VMT) spreadsheet provided by EPA, Doña Ana County had a total VMT of 2.3 billion miles in 2011. El Paso County had more than double this VMT in 2011 with a total of 5.6 billion miles.

In the Sunland Park Area, the majority of vehicular traffic is limited to a few major thoroughfares, including but not limited to NM Hwy. 28, McNutt Rd., the Pete V. Domenici Memorial Hwy., Country Club Rd., Sunland Park Dr., and Racetrack Dr. Using average daily traffic (ADT) data provided by the El Paso Metropolitan Planning Organization (Appendix B),

NMED calculated the Sunland Park Area’s VMT to be 62.9 million or 2.7% of the total county VMT (Table 3-2).

Table 3-2. VMT for the Sunland Park Area.

Road/Highway	Distance in miles	ADT	VMT
Hwy 225	3.35	4,560	5,575,740
Hwy 28	5.91	5,510	5,950,778
Hwy 183	1.00	1,080	394,200
Hwy 182	0.98	2,010	718,977
Alvarez Rd/Hwy 273	8.08	11,410	7,233,862
McNutt Rd/Hwy 273	6.69	34,050	20,331,814
Pete Domenici/Hwy 136	7.55	18,360	15,090,852
Airport Rd	1.55	2,920	1,651,990
Sunland Park Dr	0.5	15,390	2,808,675
Racetrack Dr	0.9	1,860	611,010
Country Club Rd	0.57	12,360	2,571,498
Total	37.08	109,510	62,939,396

According to U.S. Census Bureau’s 2009-2013 American Community Survey, 14,423 or 16.6% of Doña Ana County residents travel to another county for work (Table 3-3). Although only 5.8% of El Paso County residents travel to another county for work, the absolute number of commuters is the greatest at 18,901. For the remaining counties in New Mexico, 3,991 residents travel to another county for work.

Table 3-3. Travel patterns to work by county.

County Name	Total Workers	Work in Another County	Percent
Doña Ana County	86,740	14,423	16.6%
Luna County	8,538	1,059	12.4%
Otero County	24,232	2,827	11.7%
Sierra County	3,740	105	2.8%
El Paso County	326,519	18,901	5.7%
Total	449,769	37,315	8.3%

Approximately 42% of all inter-county work trips originated in Doña Ana County with a final destination of El Paso County (Table 3-4). Trips originating in El Paso County with a destination of Doña Ana County comprise nearly 29% of all inter-county work trips. More than 70% of the work trips in the region occur between Doña Ana County and El Paso County. Approximately 14% of residents in the U.S. travel to Mexico for work with most of the commuters residing in El Paso County. Another 8.6% of inter-county work trips originate in Luna, Otero, or Sierra Counties with a final destination of Doña Ana County or El Paso County.

Table 3-4. Inter-county work trips.

Residence	Place of Work	Commuting Flow	Percent of Total
Doña Ana County	Luna County	372	1.3%
Doña Ana County	Otero County	528	1.9%
Doña Ana County	Sierra County	245	0.9%
Doña Ana County	El Paso County	11,941	42.0%
Doña Ana County	Mexico	105	0.4%
Luna County	Doña Ana County	339	1.2%
Luna County	El Paso County	55	0.2%
Luna County	Mexico	70	0.2%
Otero County	Doña Ana County	820	2.9%
Otero County	El Paso County	1,181	4.2%
Sierra County	Doña Ana County	21	0.1%
El Paso County	Doña Ana County	8,211	28.9%
El Paso County	Luna County	263	0.9%
El Paso County	Otero County	550	1.9%
El Paso County	Mexico	3,740	13.2%

4 Meteorology

To determine the predominant wind patterns in the area, NMED used data from 2013 to 2015 to create wind rose charts for each violating monitor in Doña Ana County. In addition, the NMED ran HYSPLIT 24-hour back trajectory models for the two violating monitors in Doña Ana County.

Figures 10-1a to 10-24b in Appendix C depict wind data for each violating monitor on the dates with the 4 highest 8-hr ozone averages from 2013-2015. These are arranged by monitoring site and date and include wind roses, which show the frequency of wind direction, and HYSPLIT 24-hour back trajectories, which show the air parcels' likely origins before reaching the monitoring sites. Each trajectory image includes a close-up inset created as a Flash Map from the same kmz file as the Google Earth view.

The majority of wind roses show that winds were relatively calm (below 10 mph) and blew from the east to west, east-southeast to west-northwest, or south-southeast to north-northwest direction. Likewise, the back trajectories show that air parcels moved from these directions to the monitoring sites during the hours contributing to the elevated ozone concentrations. This indicates that winds passed through El Paso and Cd. Juárez before reaching the monitoring sites in New Mexico.

Figure 10-25 in Appendix C shows HYSPLIT back trajectories arriving at the El Paso, TX violating monitor using the EPA designations mapping tool. The trajectories similarly show that air parcels primarily originate from Texas and Mexico. The EPA designations mapping tool may be found at www.epa.gov/ozone-designations/ozone-designations-guidance-and-data.

5 Geography/Topography

The Paso del Norte region lies along the Rio Grande Valley, encompassing El Paso County, TX; Doña Ana County, NM; and Municipio de Ciudad Juárez, Chihuahua, MX. The Rio Grande flows south through Doña Ana County and the Mesilla Valley, serving as a common boundary for the City of Sunland Park, NM, the City of El Paso, TX and Ciudad Juárez, Chihuahua, MX. As the Rio Grande exits New Mexico, the river bends around a large igneous formation named Mount Cristo Rey. The river continues through the valley in a southeasterly direction between El Paso and Ciudad Juárez into the Brad Valley of Texas.

The topography of the Paso del Norte region plays an important part in the transportation of air pollution and is used as a starting point to define the region's air basin boundaries. Elevations in the Paso del Norte region range from 3,773 feet above mean sea level at the valley floor to 6,070 feet above mean sea level at Ranger Peak in the Franklin Mountains. The Franklin Mountains lie to the east/northeast of the Sunland Park area in Texas and the Sierra Juárez range lies to the south in Mexico. Both the Franklin and Sierra Juárez ranges help to define airflow patterns in the Sunland Park area through the creation of downward wind flows off the mountains into the valley areas.

6 Jurisdictional Boundaries

The Paso del Norte region is a unique bi-national, tristate community with shared air pollution problems. The Paso del Norte Air Basin is defined as El Paso County, TX, portions of Doña Ana County, NM and Cd. Juárez, Chihuahua. Within the state of New Mexico, NMED has jurisdictional authority to implement and enforce state and federal air quality regulations with the exception of Bernalillo County in central New Mexico and tribal lands. No tribal lands exist within Doña Ana County.

Transportation planning and programming for the southern portion of Doña Ana County falls under the jurisdiction of the El Paso Metropolitan Planning Organization (MPO). The planning boundary for the MPO covers much of the Paso del Norte airshed in the U.S. For past and present nonattainment areas in the southern portion of Doña Ana County, the El Paso MPO conducts transportation conformity planning.

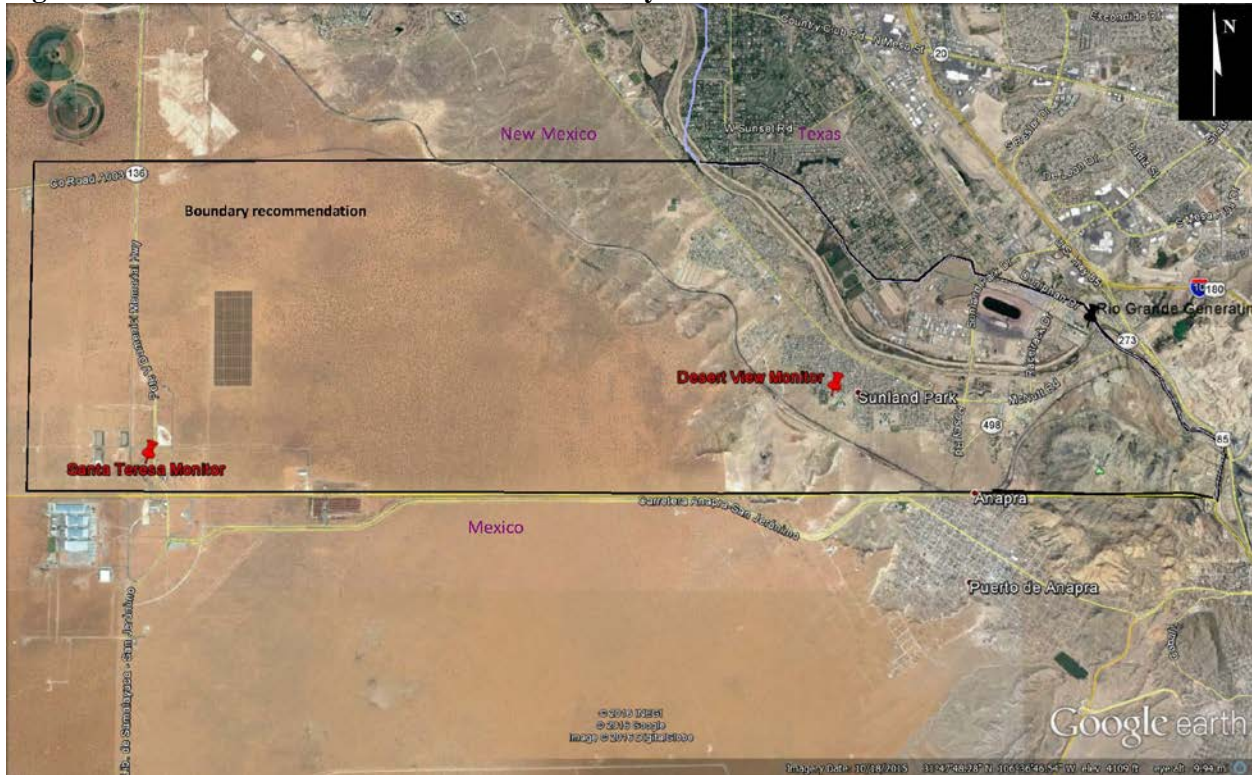
7 Recommended Nonattainment Area Boundary

The Sunland Park Area was previously designated nonattainment for the 1-hour ozone NAAQS in 1995. At that time, the state of New Mexico maintained that the predominant sources contributing to the ozone exceedances at the violating monitors were not within Doña Ana County or NMED's jurisdiction. Presently, the information provided above also supports this assertion. Although designations for nonattainment areas are presumptively based on the CBSA or MSA, basing the boundary on the Las Cruces MSA would result in limited emissions reductions outside of the Sunland Park Area.

NMED recommends a nonattainment area shown in Figure 7-1 and described as follows:

1. Bounded on the north by latitude N31°49'30" (red line);
2. Bounded on the south by the international border between New Mexico and Mexico (yellow line);
3. Bounded on the east by the New Mexico and Texas state line (gray line); and
4. Bounded on the west by longitude W106°42' (red line).

Figure 7-1: Recommended nonattainment boundary for the Sunland Park Area.



Doña Ana County as a whole accounts for 24% of total NO_x emissions (Figure 3-3) and 16% of total VOC emissions (Figure 3-7) in the region. Point sources within Doña Ana County contribute even less, accounting for 8% of NO_x emissions (Figure 3-4) and 1% of VOC emissions (Figure 3-8) in the region.

The largest and only major source for NO_x in Doña Ana County, the Rio Grande Generating Station, accounts for 84% of point source NO_x emissions and 80% of point source VOC emissions in the county. This facility is located in the Sunland Park Area and is included within the recommended nonattainment area.

The violating monitors (Desert View and Santa Teresa) are located in the southern most portion of the county near El Paso and Cd. Juárez. These monitors are approximately 35 miles south of the Solano monitoring site in Las Cruces, the second largest metropolitan area in New Mexico. As Figure 2-3 shows, the design values for the violating monitors are 0.004 ppm and 0.006 ppm higher than the Solano and La Union monitoring sites, respectively. The design value for the nearest site to the violating monitors, La Union, has not exceeded 0.070 ppm since 2005. The design value for the Solano site has never exceeded 0.067 ppm (2006). In contrast, the 2013-

2015 design value for El Paso is 0.071 ppm, slightly lower than the violating monitors in the Sunland Park Area. This indicates that ozone concentrations at the violating monitors are more indicative of the level monitored in El Paso than the La Union, Chaparral and Solano monitoring sites.

Based on the topography, prevailing winds, and close proximity to two major urban areas, it is evident that the violating monitors in the Sunland Park Area are not the result of emissions from New Mexico sources outside of the recommended nonattainment area.

7.1 Alternative Boundary Recommendation

The Guidance Memo indicates that EPA will use data from 2014 to 2016 when determining final nonattainment boundaries. Preliminary data collected through August 2016 indicates that the Santa Teresa monitor will be in attainment of the standard. Although NMED will need to quality assure and validate this data before it can be used for a regulatory determination, the department would like to offer an alternative boundary recommendation for consideration should the current trend hold and the Santa Teresa monitor meets the standard. The alternative boundary recommendation would still include the majority of the population and emission sources in the Sunland Park Area while excluding uninhabited and largely undeveloped desert land.

NMED recommends an alternative nonattainment area shown in Figure 7-2 and described as follows:

1. Bounded on the north by latitude N31°49'30" (red line);
2. Bounded on the south by the international border between New Mexico and Mexico (yellow line);
3. Bounded on the east by the New Mexico and Texas state line (gray line); and
4. Bounded on the west by longitude W106°36'36" (red line).

Figure 7-2: Alternative nonattainment boundary recommendation for the Sunland Park Area.

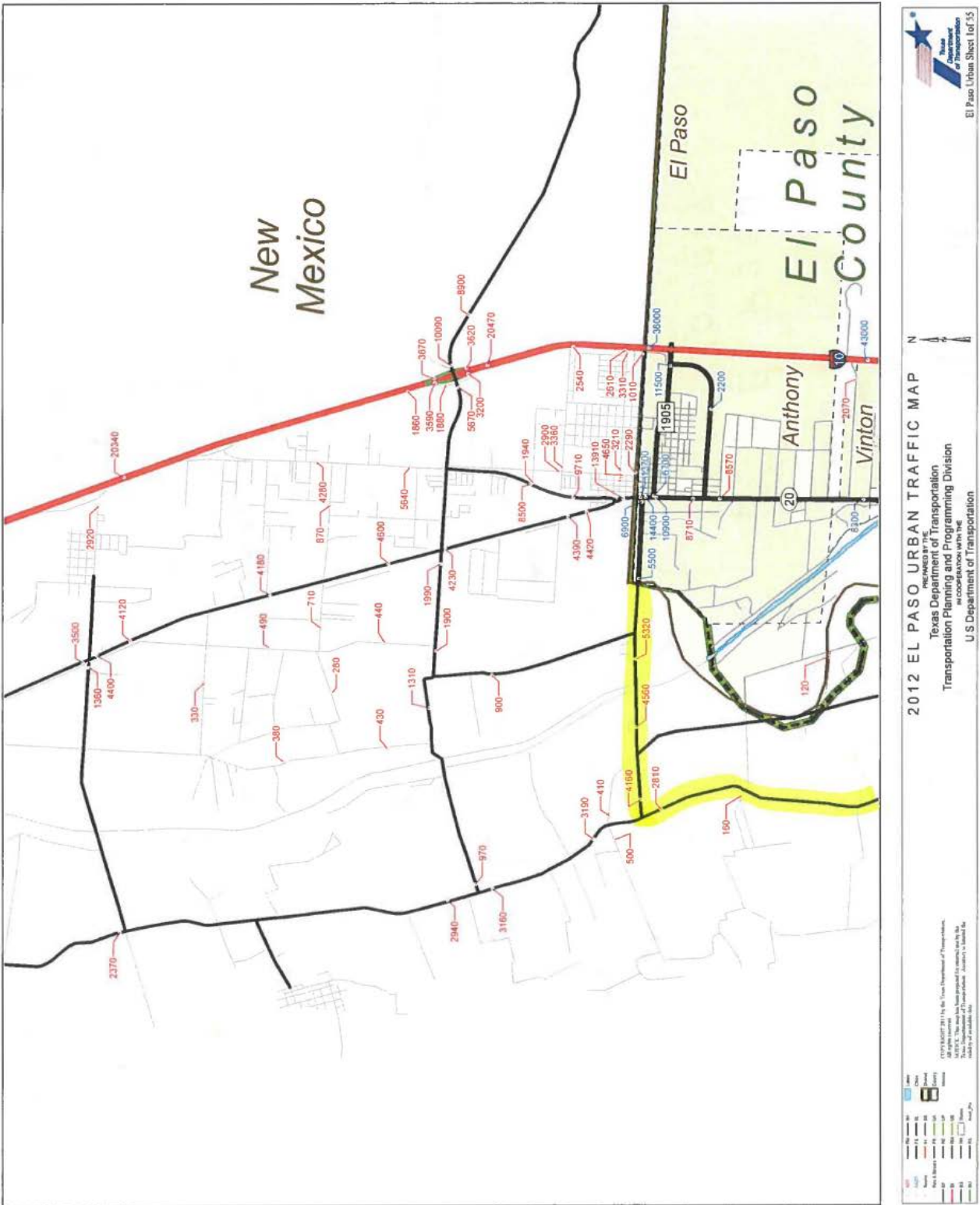


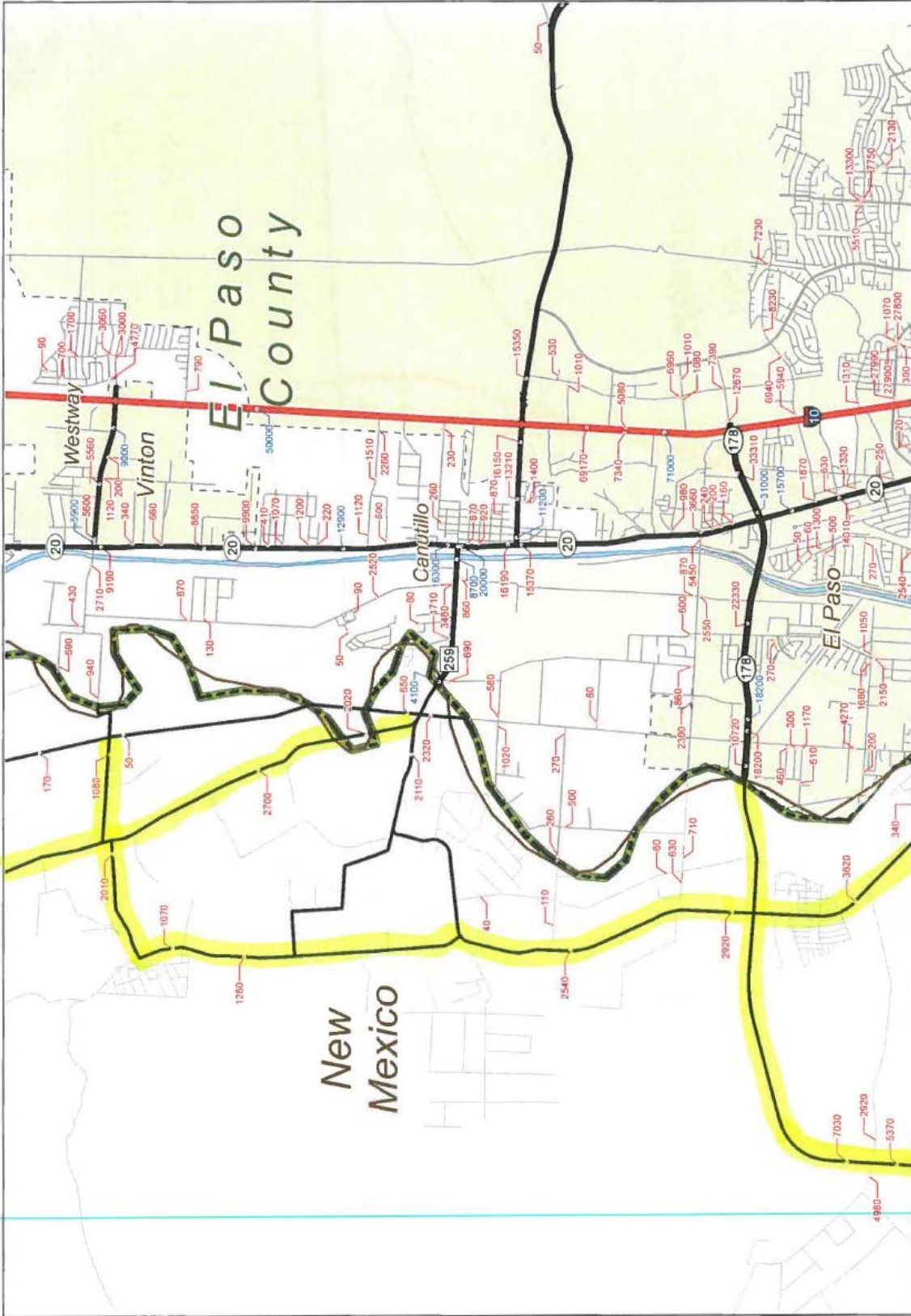
8 Appendix A: Ozone Monitoring Data

County	Site Name	AQS ID #	4 th Max ozone 8-hr average (ppm)			Design Value (2013-2015)
			2013	2014	2015	
Doña Ana	La Union	35-013-0008	.064	.065	.070	.066
	Chaparral	35-013-0020	.070	.067	.065	.067
	Desert View	35-013-0021	.071	.072	.074	.072
	Santa Teresa	35-013-0022	.080	.066	.070	.072
	Solano	35-013-0023	.064	.066	.066	.065
Eddy	Carlsbad	35-015-1005	.069	.072	.067	.069
Lea	Hobbs	35-025-0008	.068	.068	.067	.067
Rio Arriba	Coyote Ranger District	35-039-0026	.066	.065	.064	.065
Sandoval	Bernalillo	35-043-1001	.067	.062	.066	.065
San Juan	Bloomfield	35-045-0009	.069	.062	.061	.064
	Navajo Lake	35-045-0018	.070	.063	.068	.067
	Substation	35-045-1005	.065	.063	.061	.063
Santa Fe	Santa Fe Airport	35-049-0021	.068	.064	.062	.064
Valencia	Los Lunas	35-061-0008	.072	.064	.064	.066
(Bold – exceeds 2015 NAAQS)						

9 Appendix B: Sunland Park Area Traffic Flow Maps

The highlighted road segments in the maps below were used to estimate annual VMT.





2012 EL PASO URBAN TRAFFIC MAP

Texas Department of Transportation
 Transportation Planning and Programming Division
 in cooperation with the
 U.S. Department of Transportation

El Paso Urban Sheet 4 of 55

10 Appendix C: Meteorological Data

Wind roses were created by NMED using each NMED station's meteorological data, at <http://drdasnm1.alink.com/>.

HYSPLIT¹ 24-hour back trajectories were created by NMED on June 24, 2016 as follows:

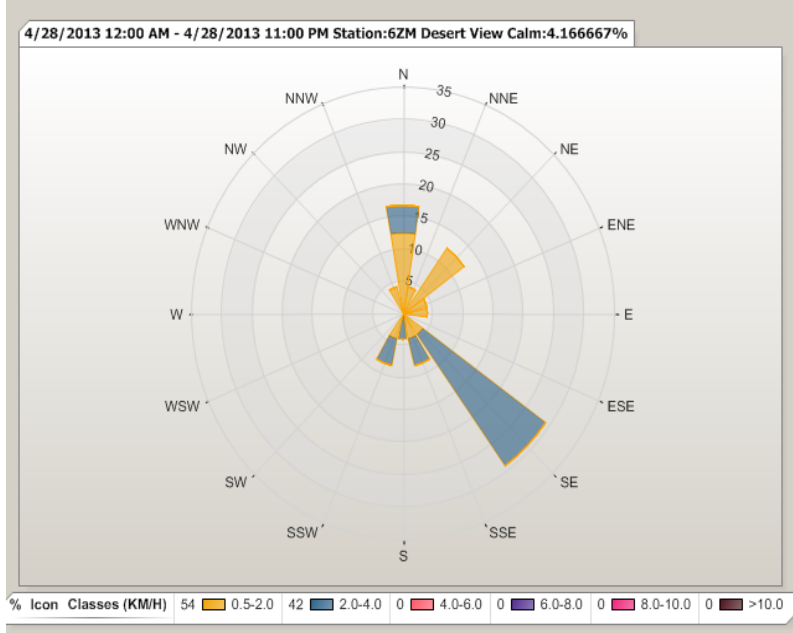
- Model² found at <http://ready.arl.noaa.gov/hypub-bin/trajtype.pl?runtype=archive>, modified January 5, 2016;
- Meteorological data: NAM 12 km (archive); GDAS 0.5 degree (archive) for 8/16/2013 only (NAM 12 data not available for this date);
- Desert View latitude: 31.79611, longitude: -106.58389;
- Santa Teresa latitude: 31.78778, longitude: -106.68278;
- Times are listed as UTC, which corresponds to Mountain Daylight Time (MDT) + 6 hrs.;
- Contributing hours include the 8 hours from which the 8-hr average is calculated;
- 2400 or 2500 hrs. UTC corresponds to 0000 hrs. and 0100 hrs., respectively, of the following day.

¹ Stein, A.F., Draxler, R.R., Rolph, G.D., Stunder, B.J.B., Cohen, M.D., and Ngan, F., (2015). NOAA's HYSPLIT atmospheric transport and dispersion modeling system, *Bull. Amer. Meteor. Soc.*, **96**, 2059-2077.

² Rolph, G.D. (2016). *Real-time Environmental Applications and Display sYstem (READY) Website* (<http://www.ready.noaa.gov>). NOAA Air Resources Laboratory, College Park, MD.

10.1 Desert View

Figure 10-1a: Desert View, April 28, 2013 (8-hr average maximum .071 ppm)



Approximately 66% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-1b: Desert View, April 28, 2013 HYSPLIT Back trajectories.

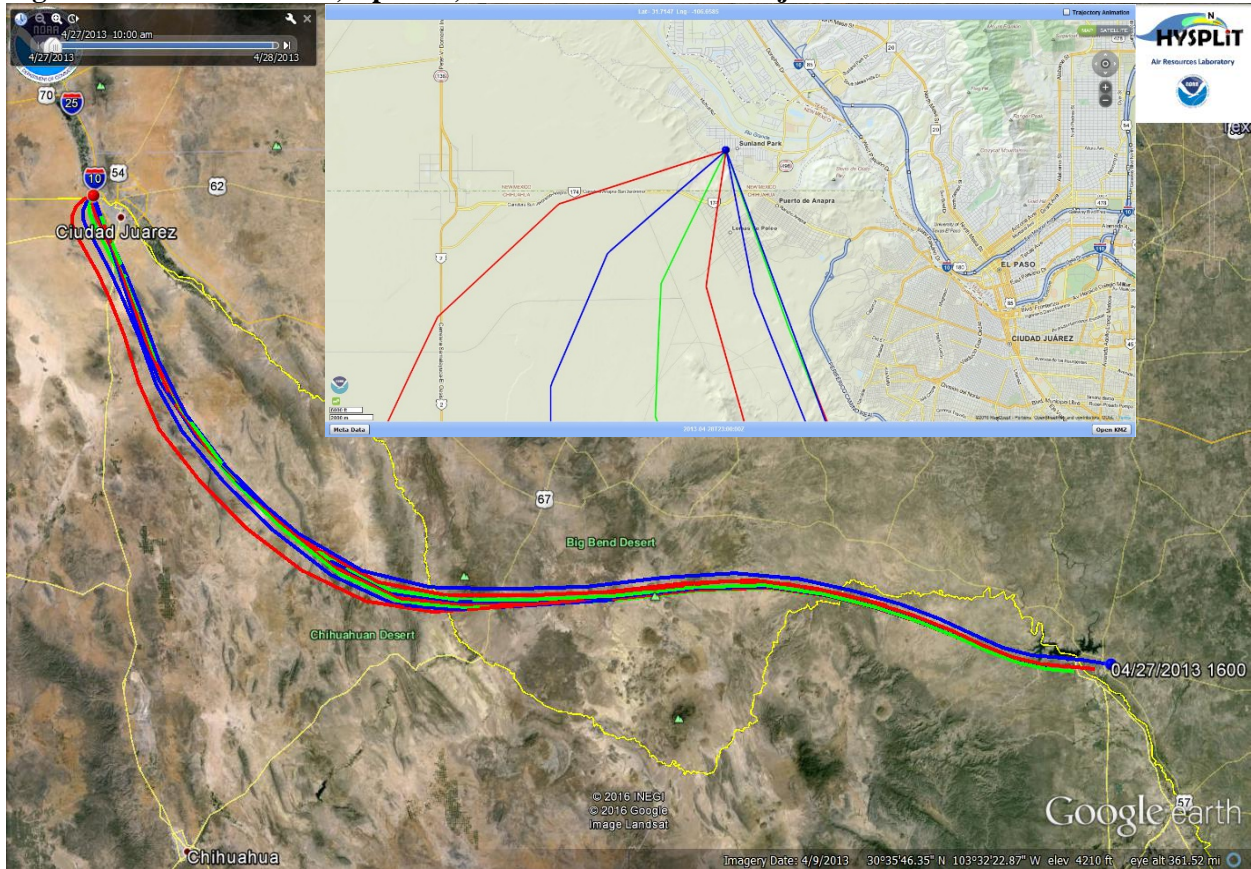
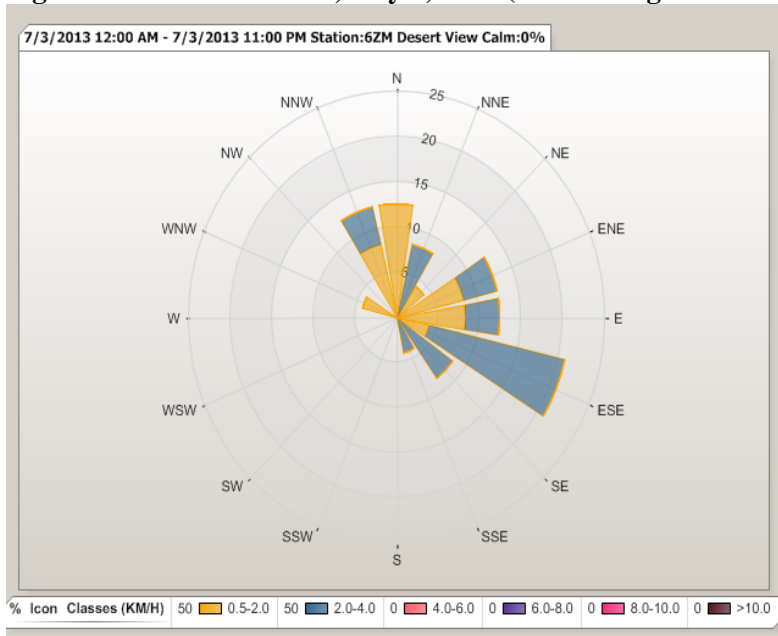


Figure 10-2a: Desert View, July 3, 2013 (8-hr average maximum .076 ppm)



Approximately 61% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-2b: Desert View, July 3, 2013 HYSPLIT Back trajectories.

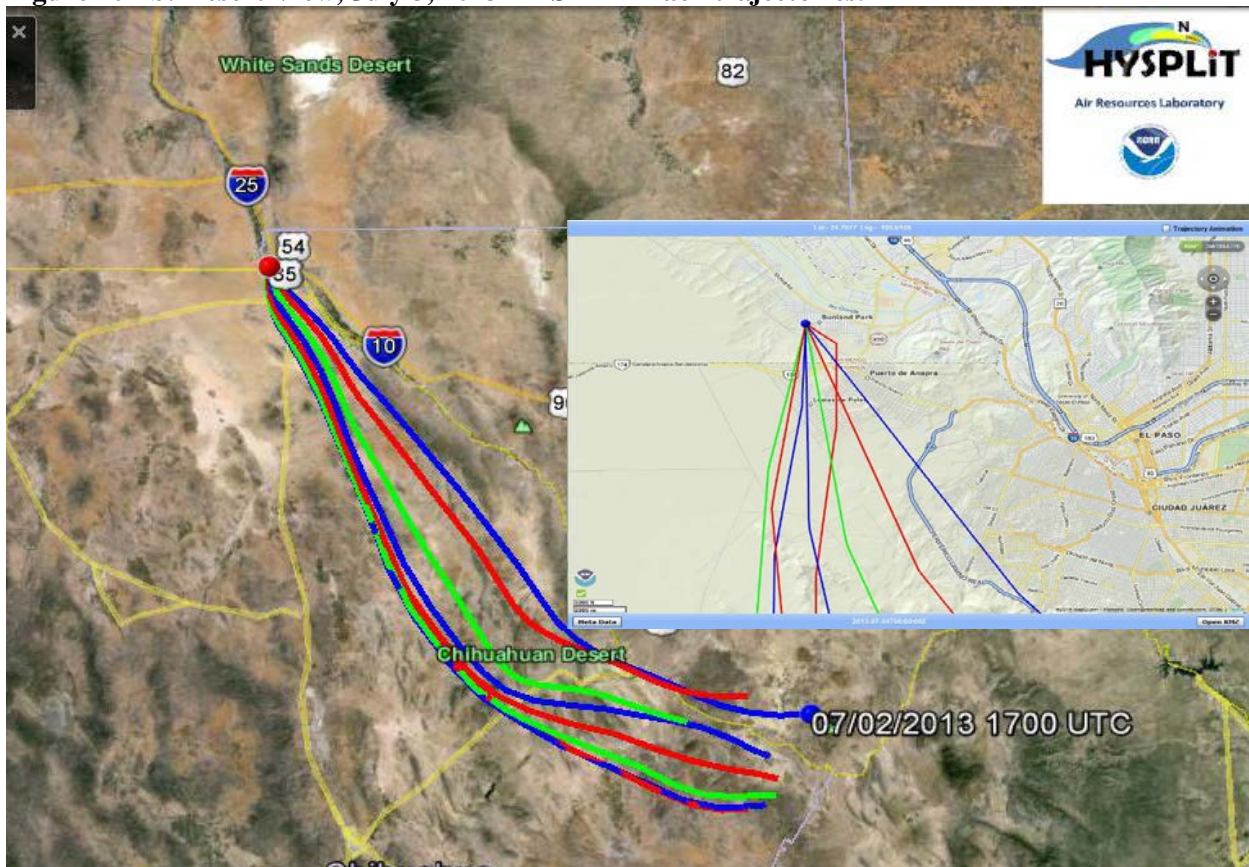
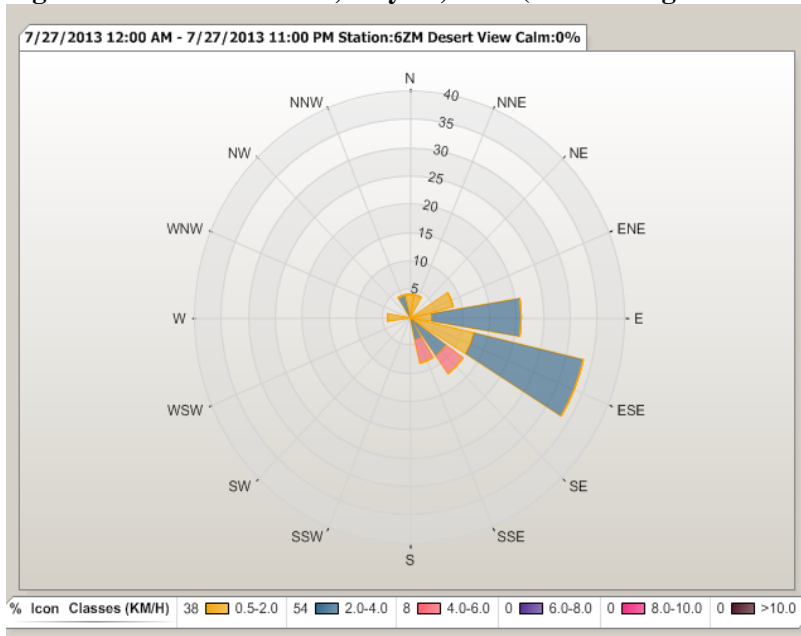


Figure 10-3a: Desert View, July 27, 2013 (8-hr average maximum .072 ppm)



Approximately 84% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-3b: Desert View, July 27, 2013 HYSPLIT Back trajectories.

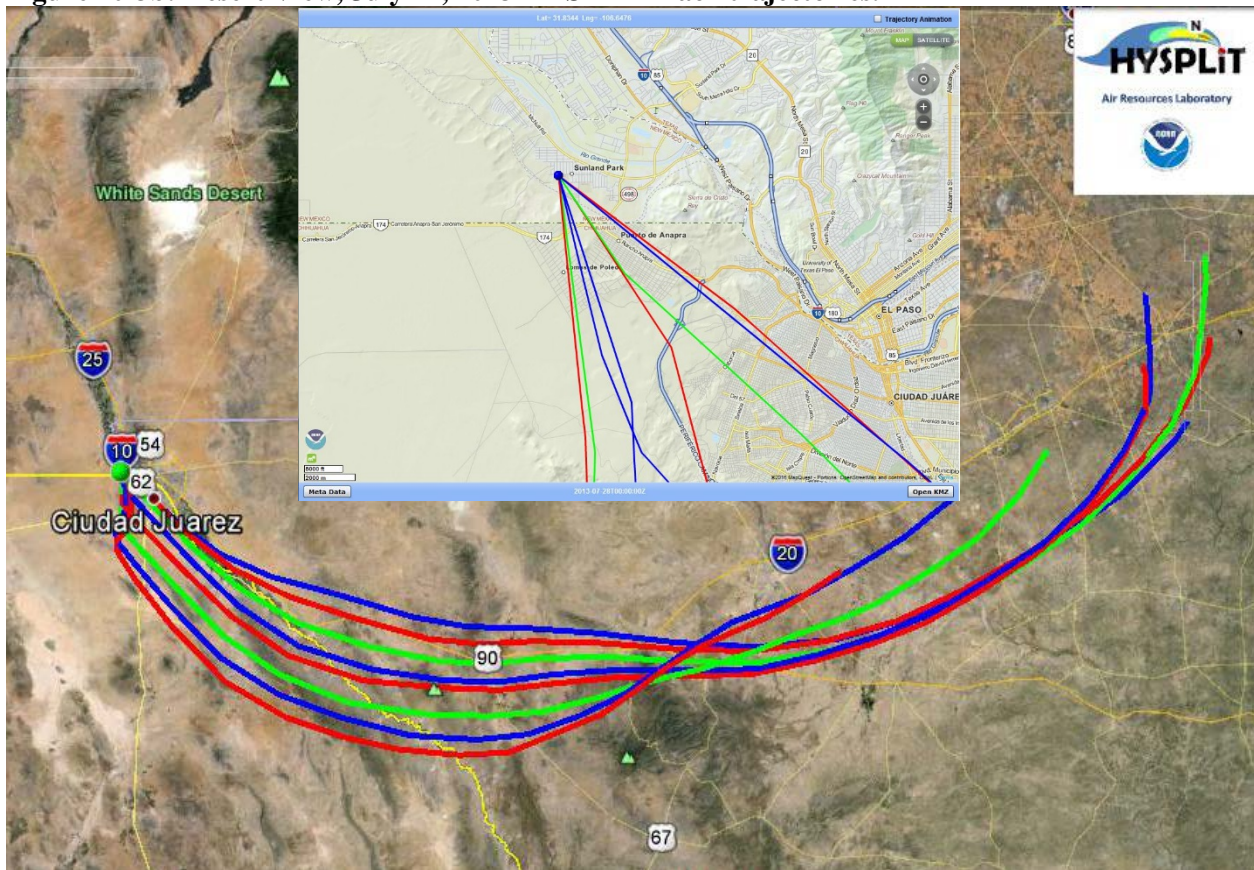
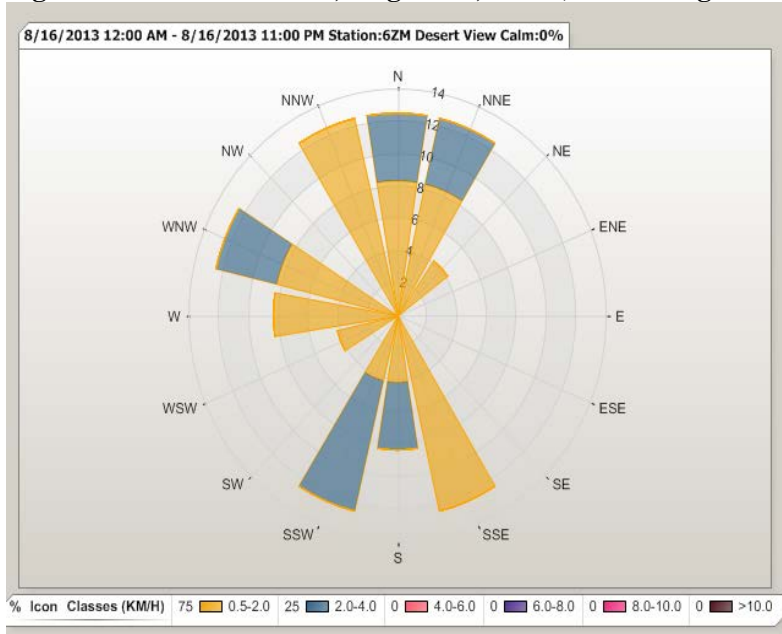


Figure 10-4a: Desert View, August 16, 2013 (8-hr average maximum .072 ppm)



Approximately 49% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-4b: Desert View, August 16, 2013 HYSPLIT Back trajectories.

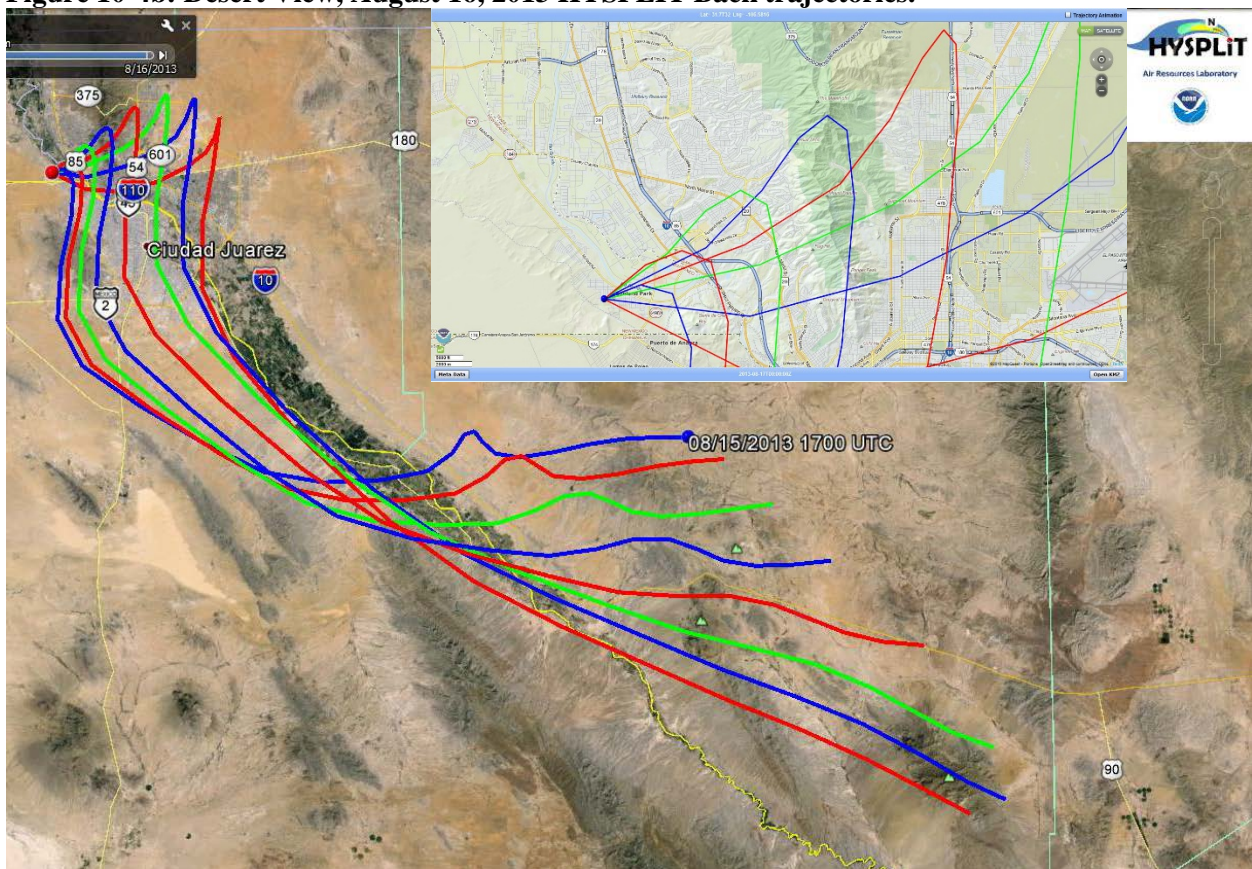
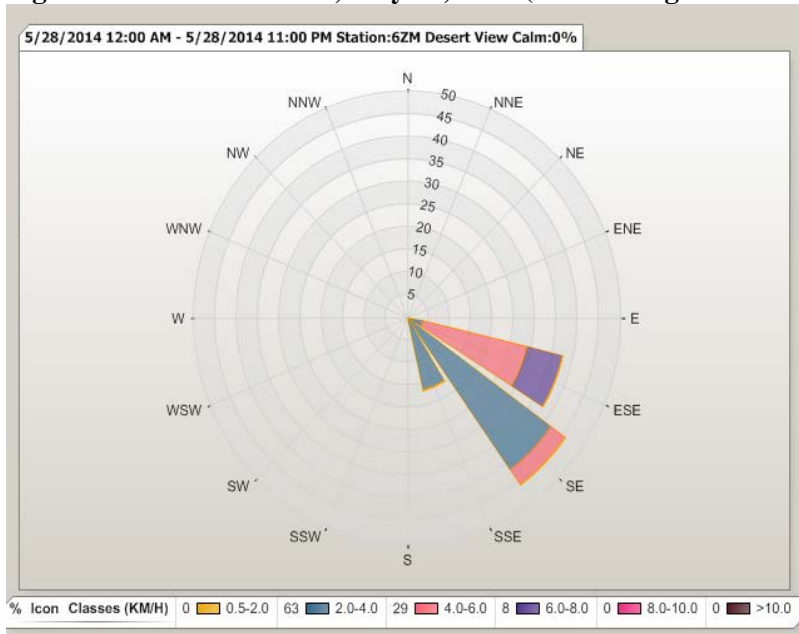


Figure 10-5a: Desert View, May 28, 2014 (8-hr average maximum .072 ppm)



100% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-5b: Desert View, May 28, 2014 HYSPLIT Back trajectories.

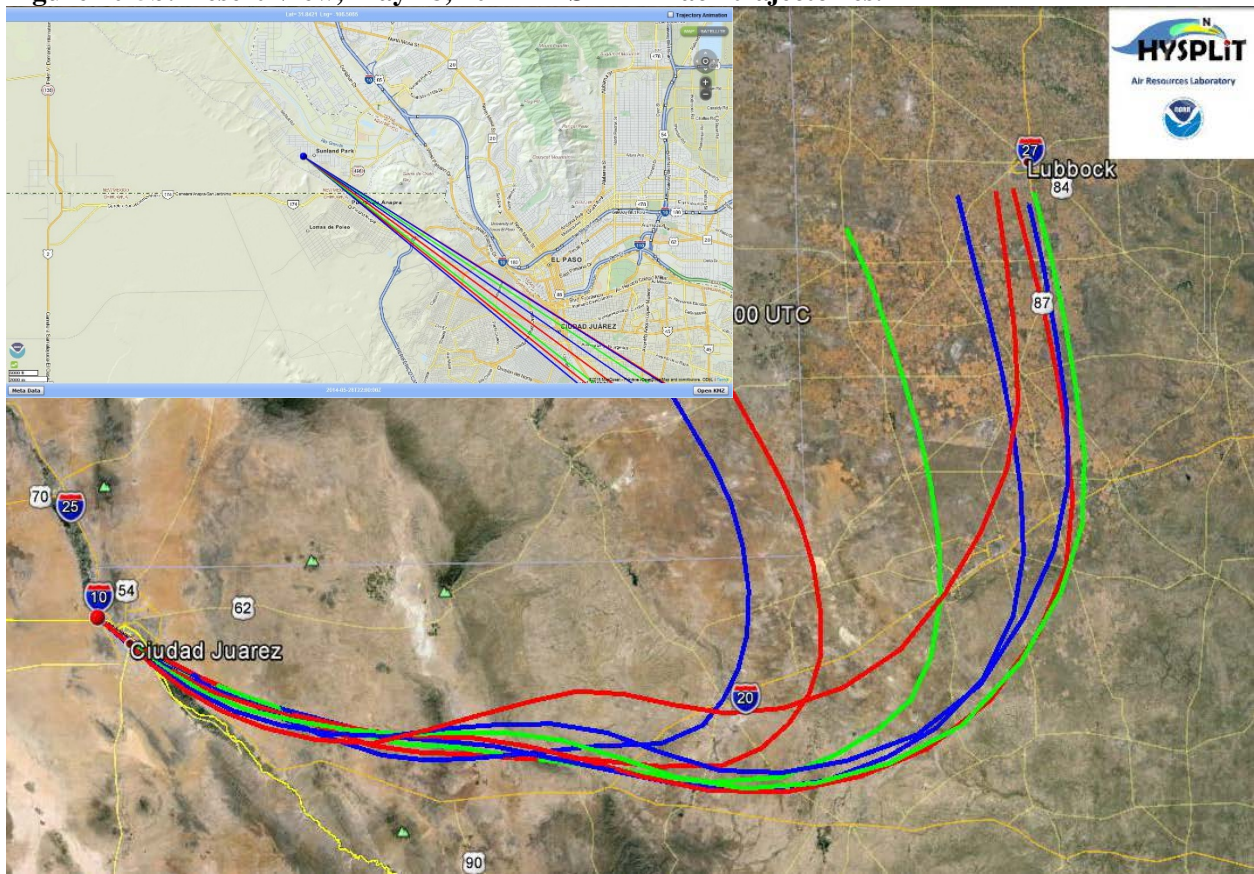
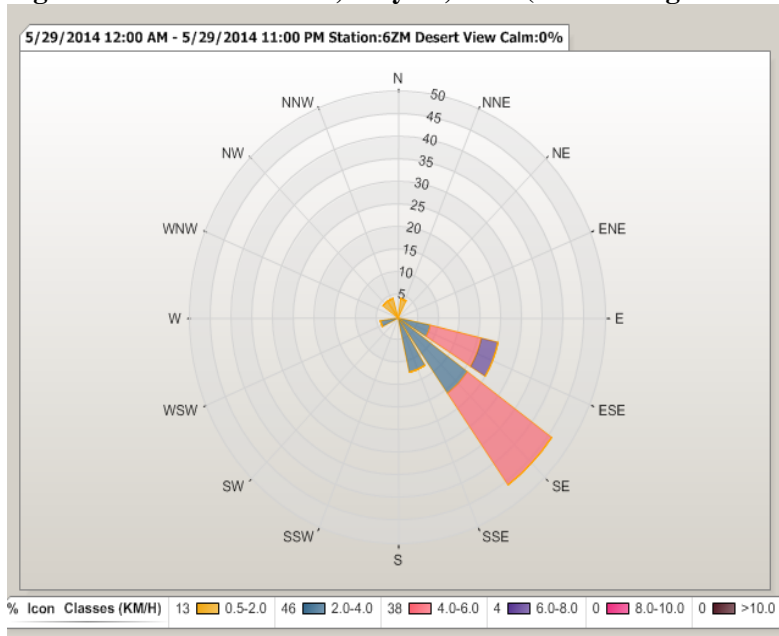


Figure 10-6a: Desert View, May 29, 2014 (8-hr average maximum .072 ppm)



Approximately 83% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-6b: Desert View, May 29, 2014 HYSPLIT Back trajectories.

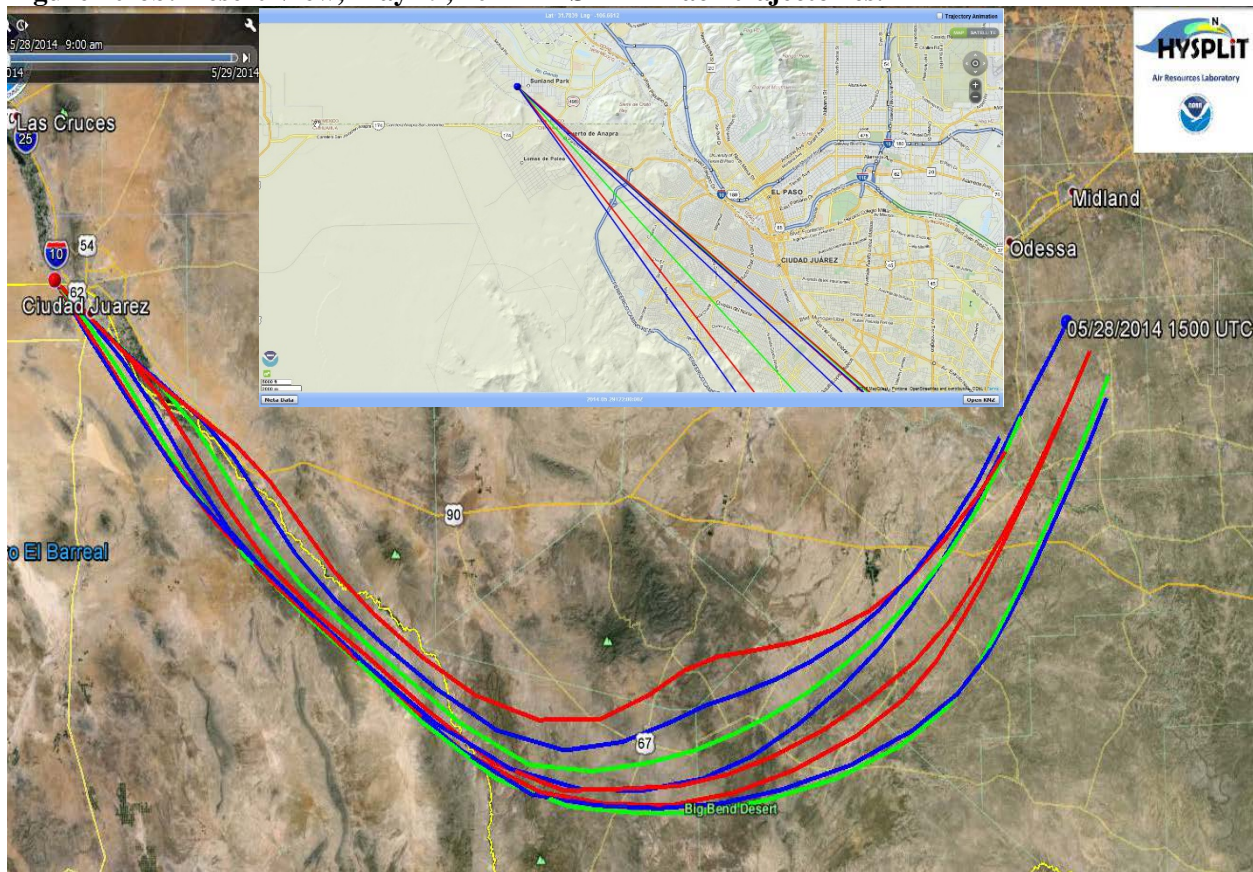
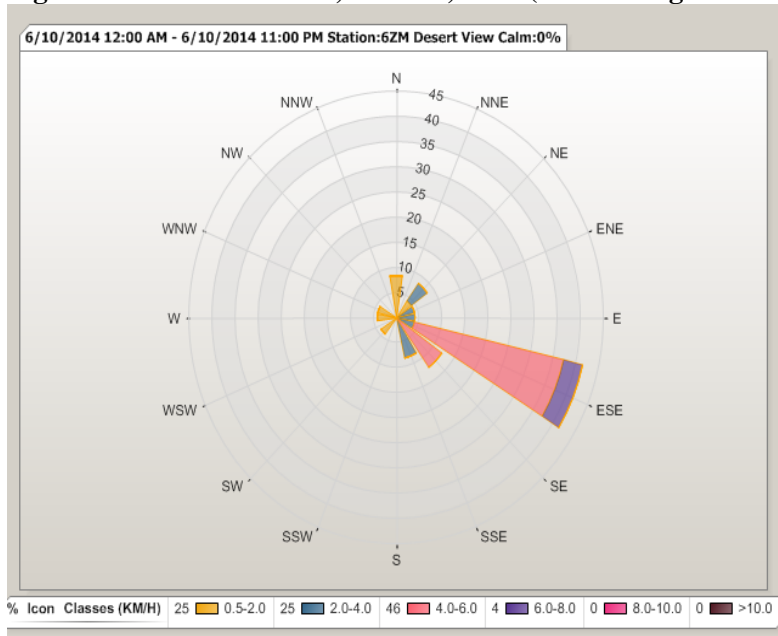


Figure 10-7a: Desert View, June 10, 2014 (8-hr average maximum .076 ppm)



Approximately 79% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-7b: Desert View, June 10, 2014 HYSPLIT Back trajectories.

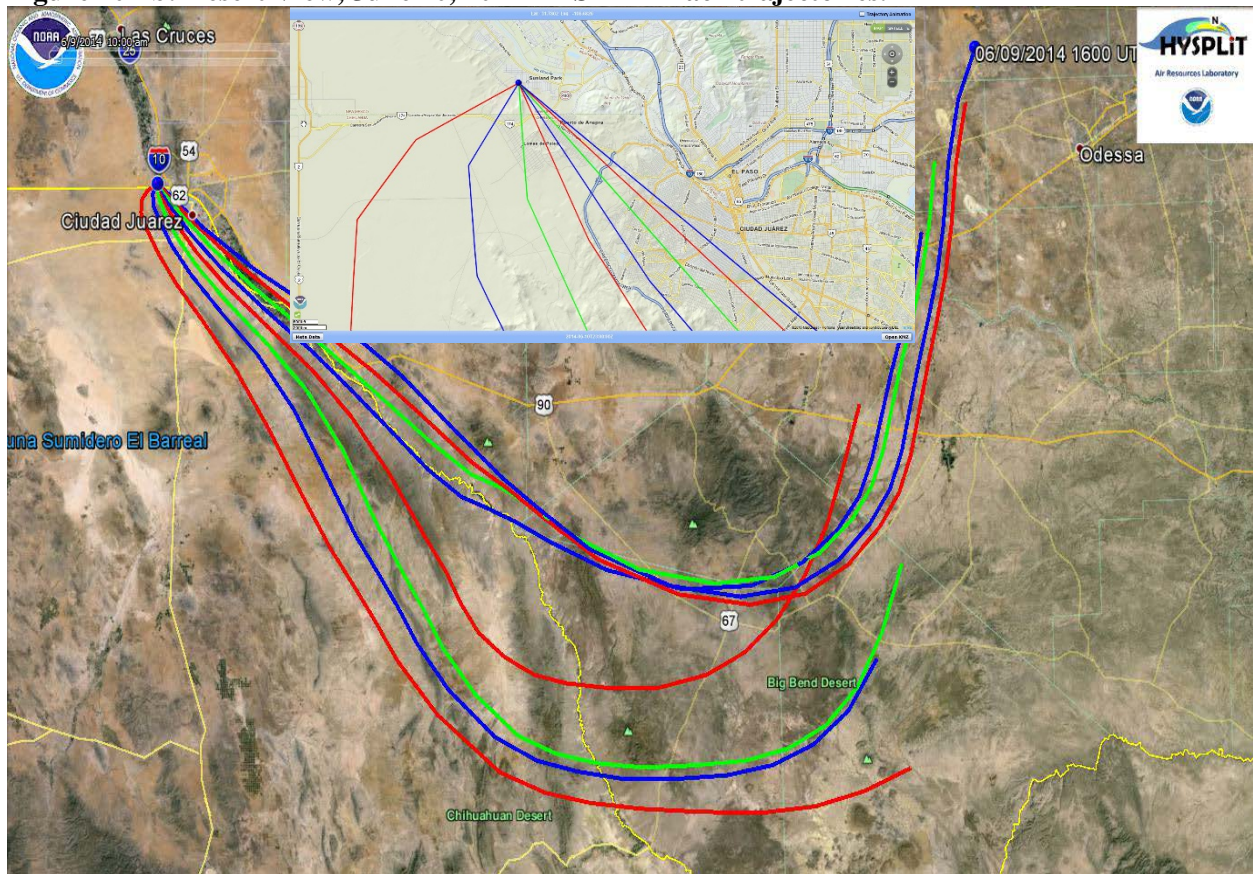
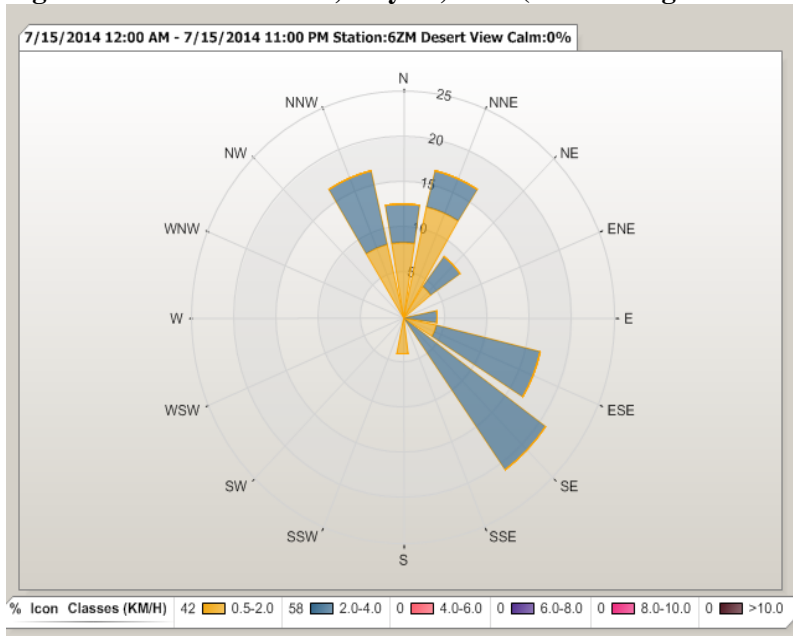


Figure 10-8a: Desert View, July 15, 2014 (8-hr average maximum .072 ppm)



Approximately 70% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-8b: Desert View, July 15, 2014 HYSPLIT Back trajectories.

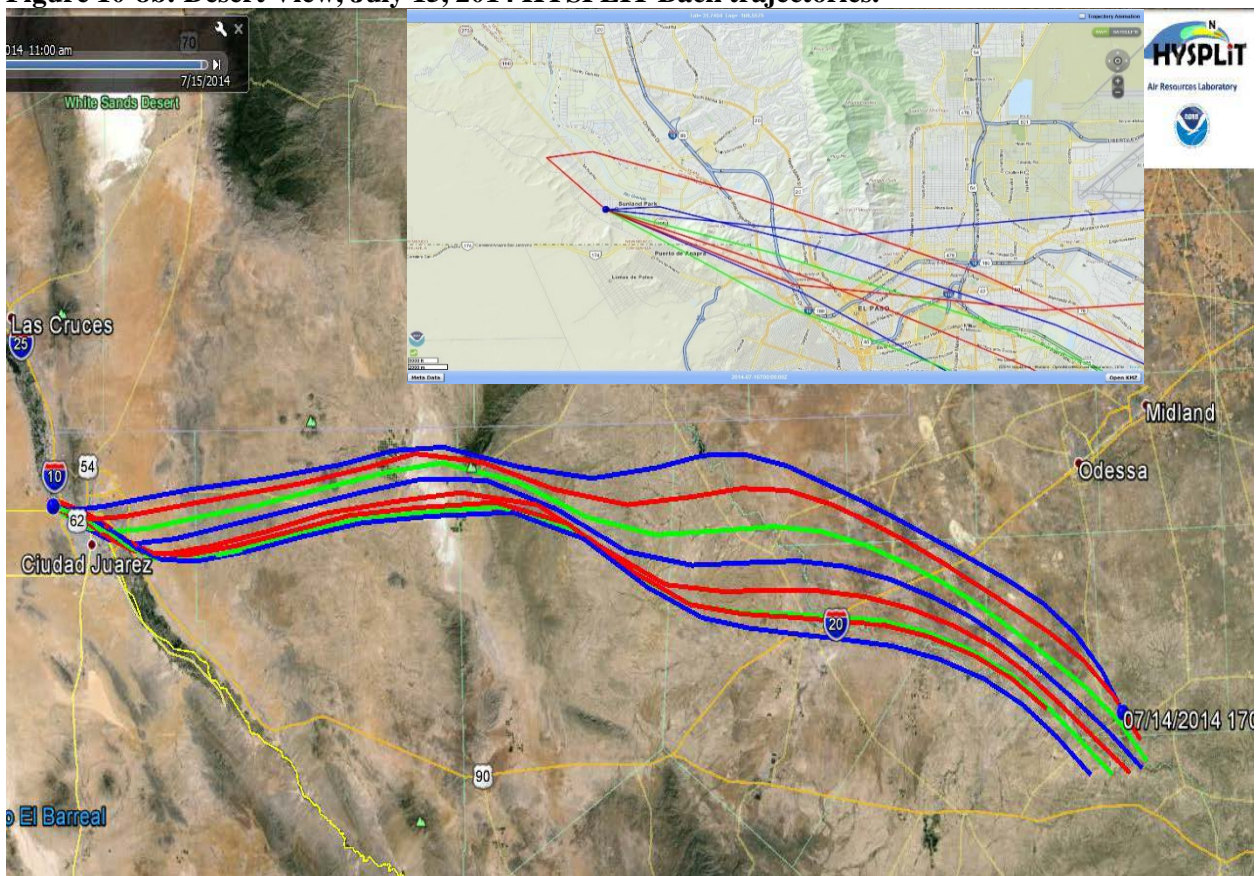
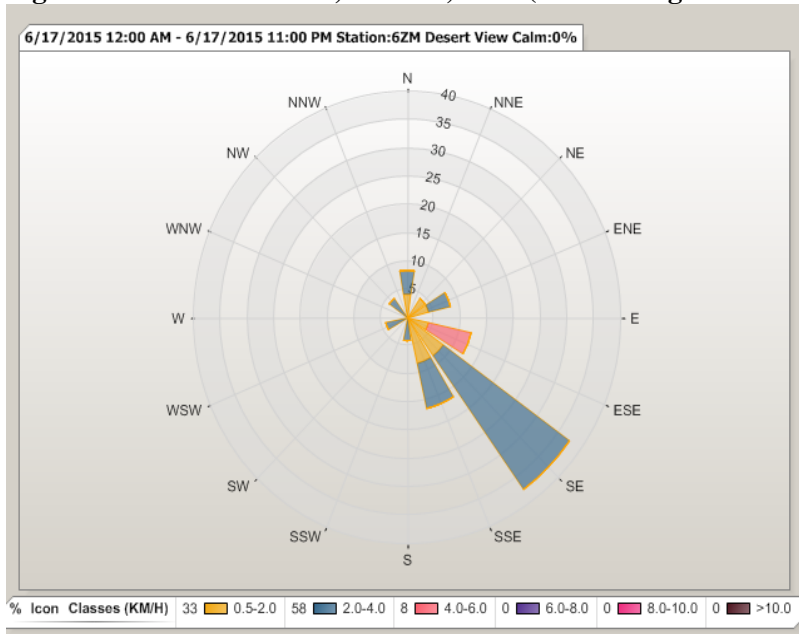


Figure 10-9a: Desert View, June 17, 2015 (8-hr average maximum .077 ppm)



Approximately 80% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-9b: Desert View, June 17, 2015 HYSPLIT Back trajectories.

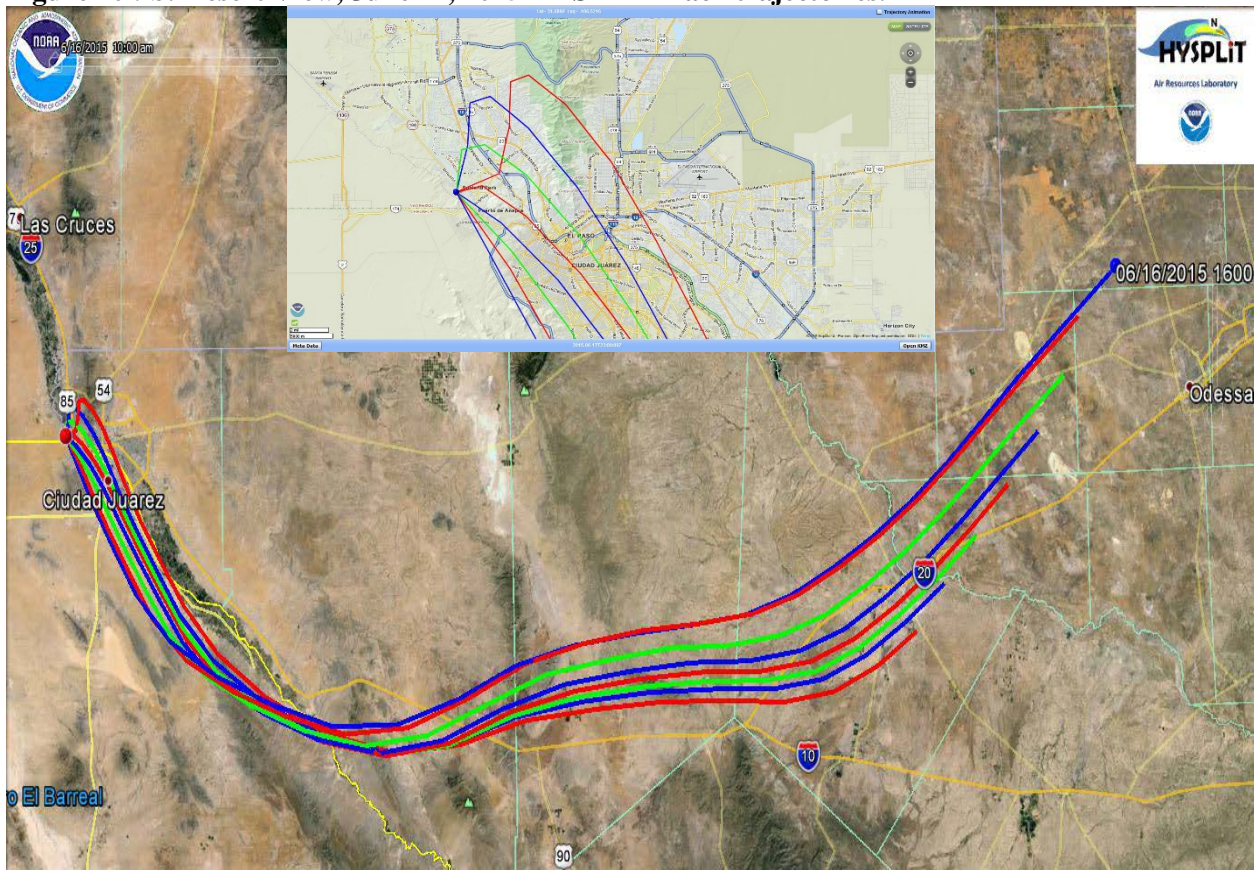
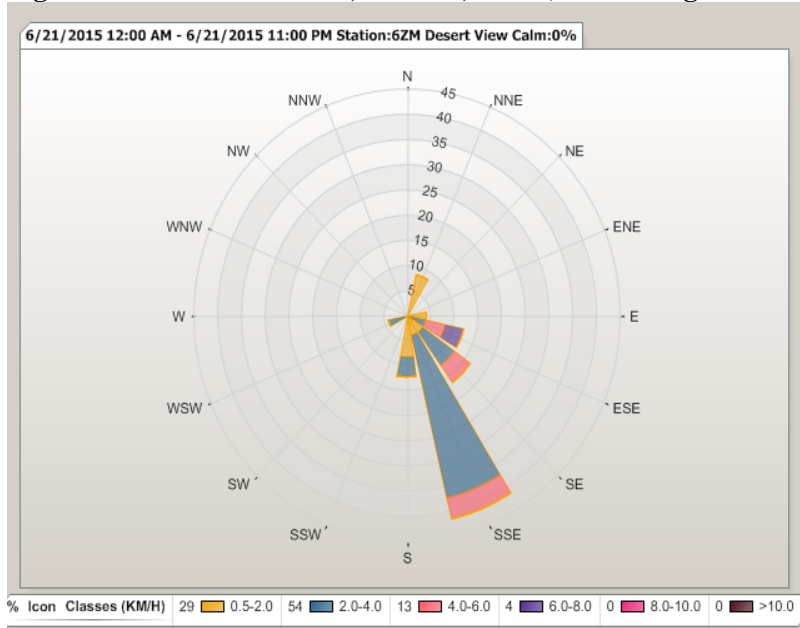


Figure 10-10a: Desert View, June 21, 2015 (8-hr average maximum .074 ppm)



Approximately 96% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-10b: Desert View, June 21, 2015 HYSPLIT Back trajectories.

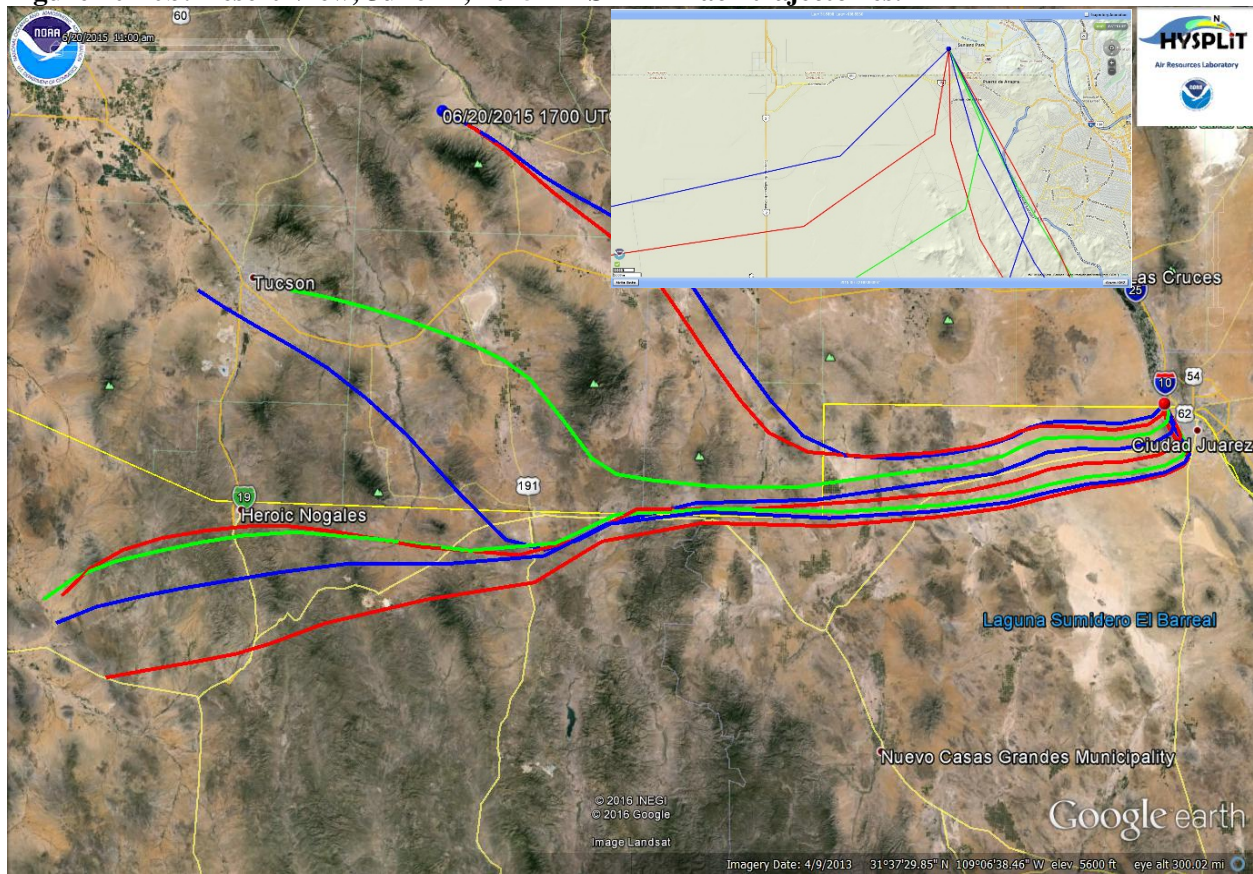
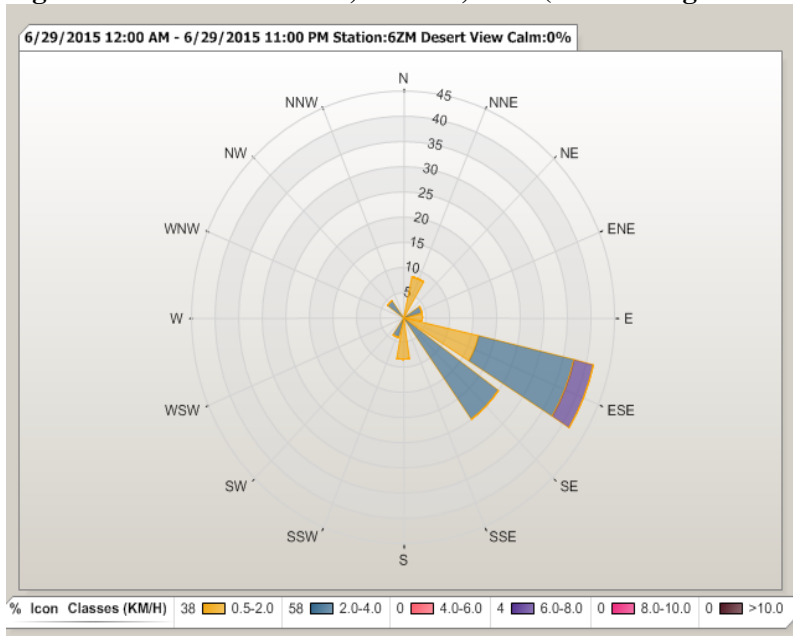


Figure 10-11a: Desert View, June 29, 2015 (8-hr average maximum .076 ppm)



Approximately 96% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-11b: Desert View, June 29, 2015 HYSPLIT Back trajectories.

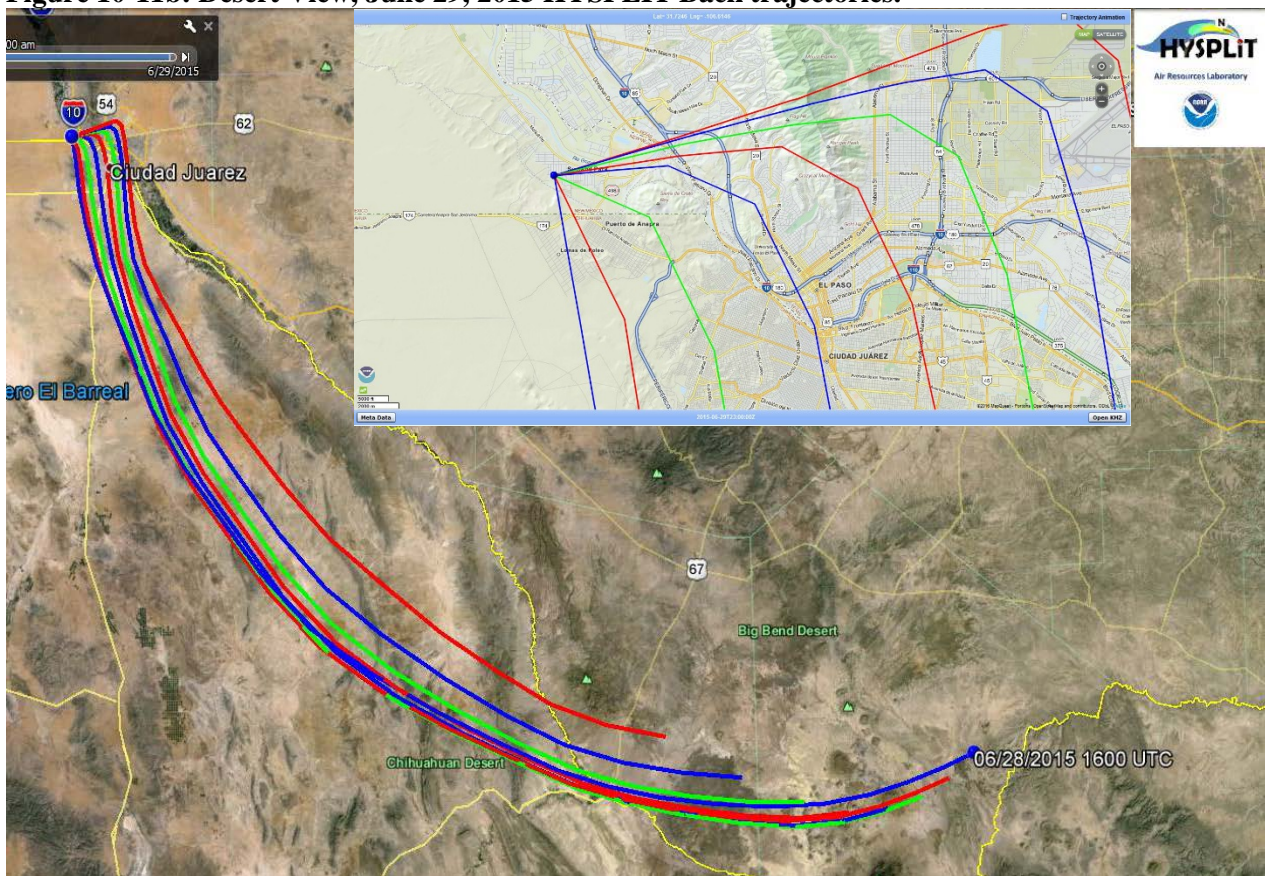
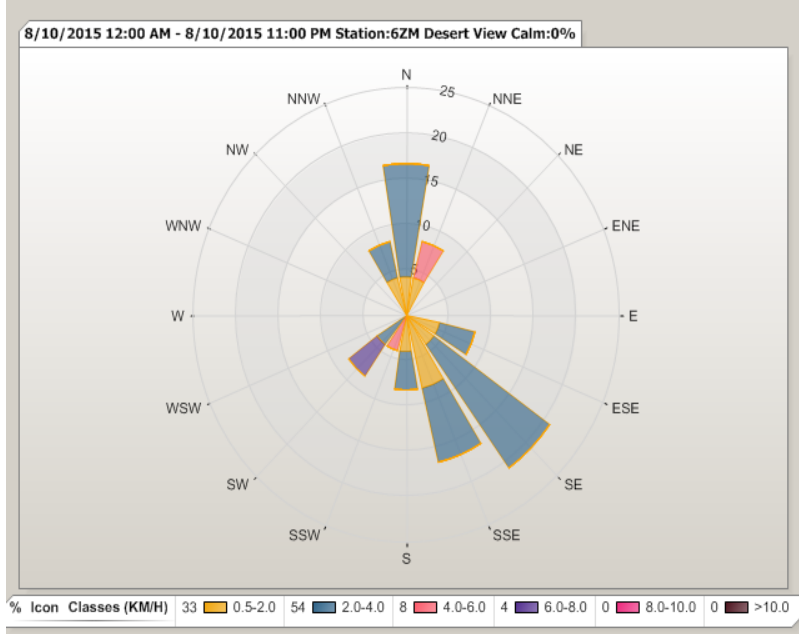
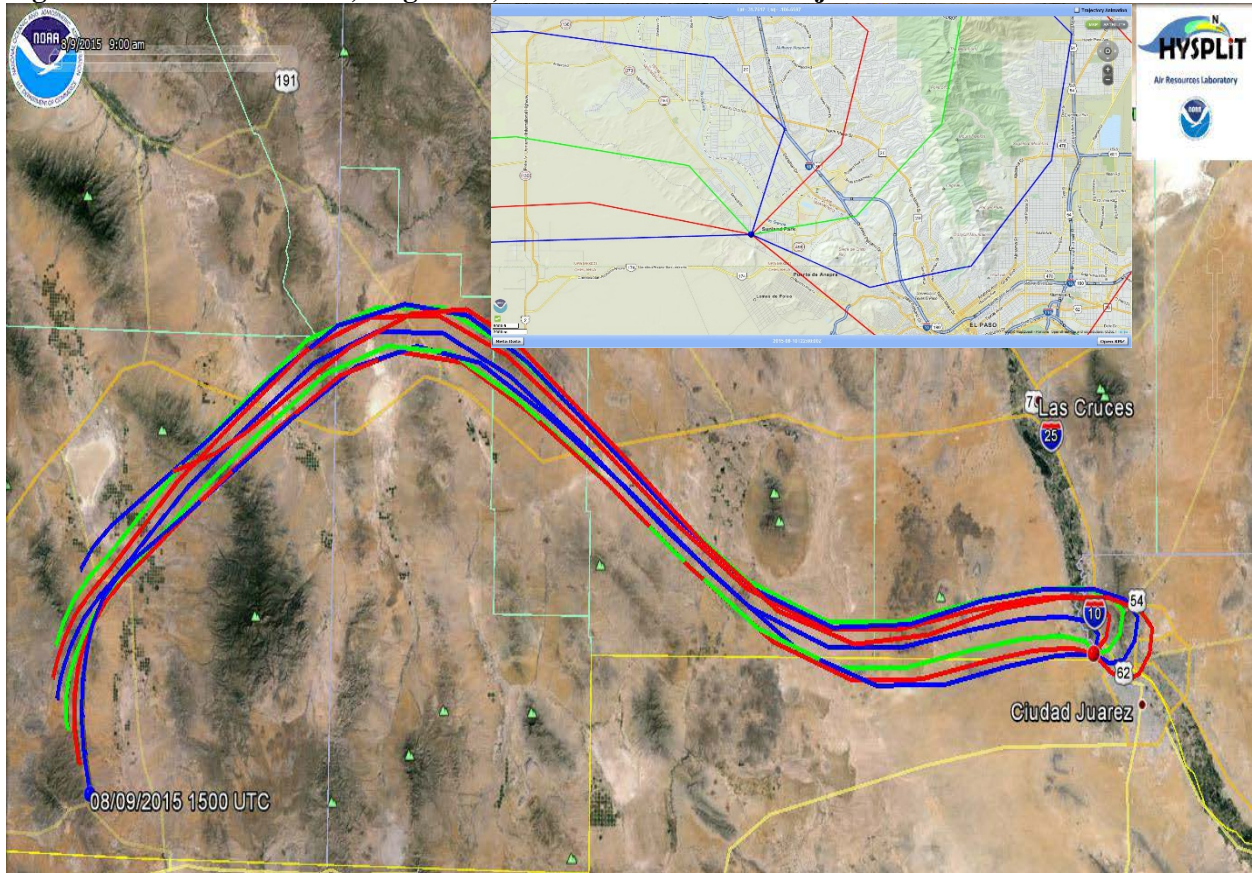


Figure 10-12a: Desert View, August 10, 2015 (8-hr average maximum .077 ppm)



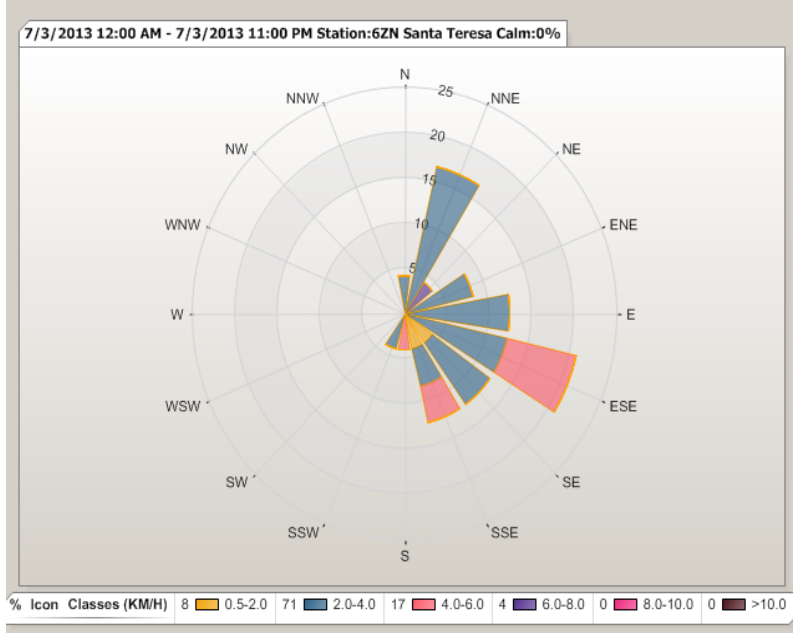
Approximately 74% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-12b: Desert View, August 10, 2015 HYSPLIT Back trajectories.



10.2 Santa Teresa

Figure 10-13a: Santa Teresa, July 3, 2013 (8-hr average maximum .084 ppm)



Approximately 74% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-13b: Santa Teresa, July 3, 2013 HYSPLIT Back trajectories.

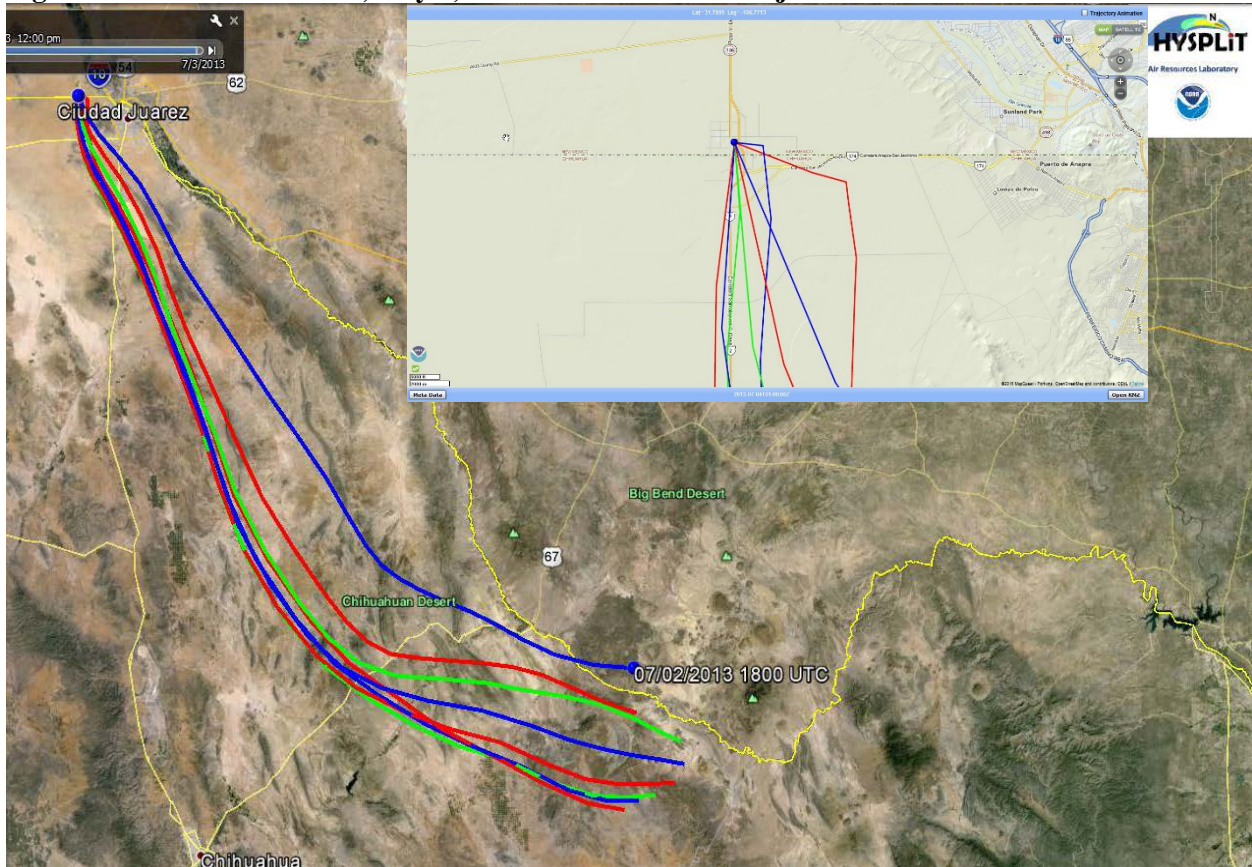
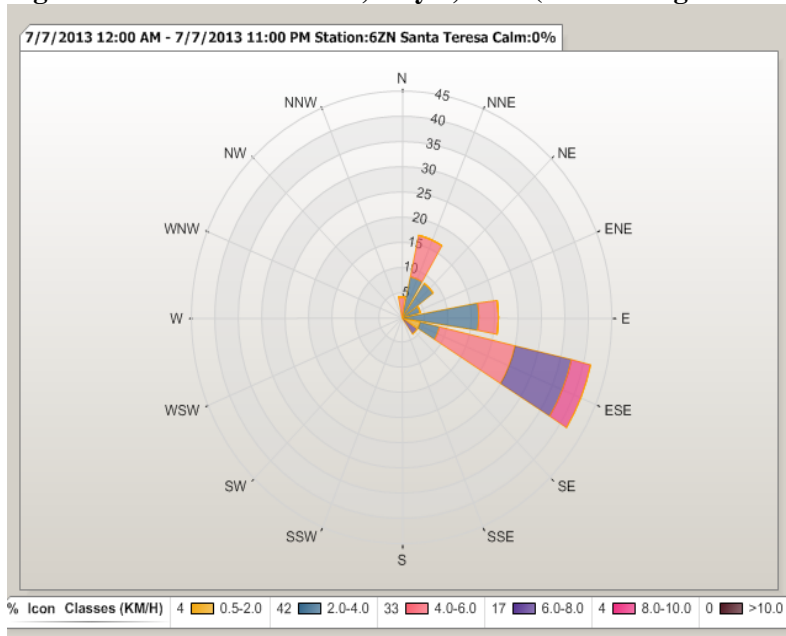


Figure 10-14a: Santa Teresa, July 7, 2013 (8-hr average maximum 0.080 ppm)



Approximately 77% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-14b: Santa Teresa, July 7, 2013 HYSPLIT Back trajectories.

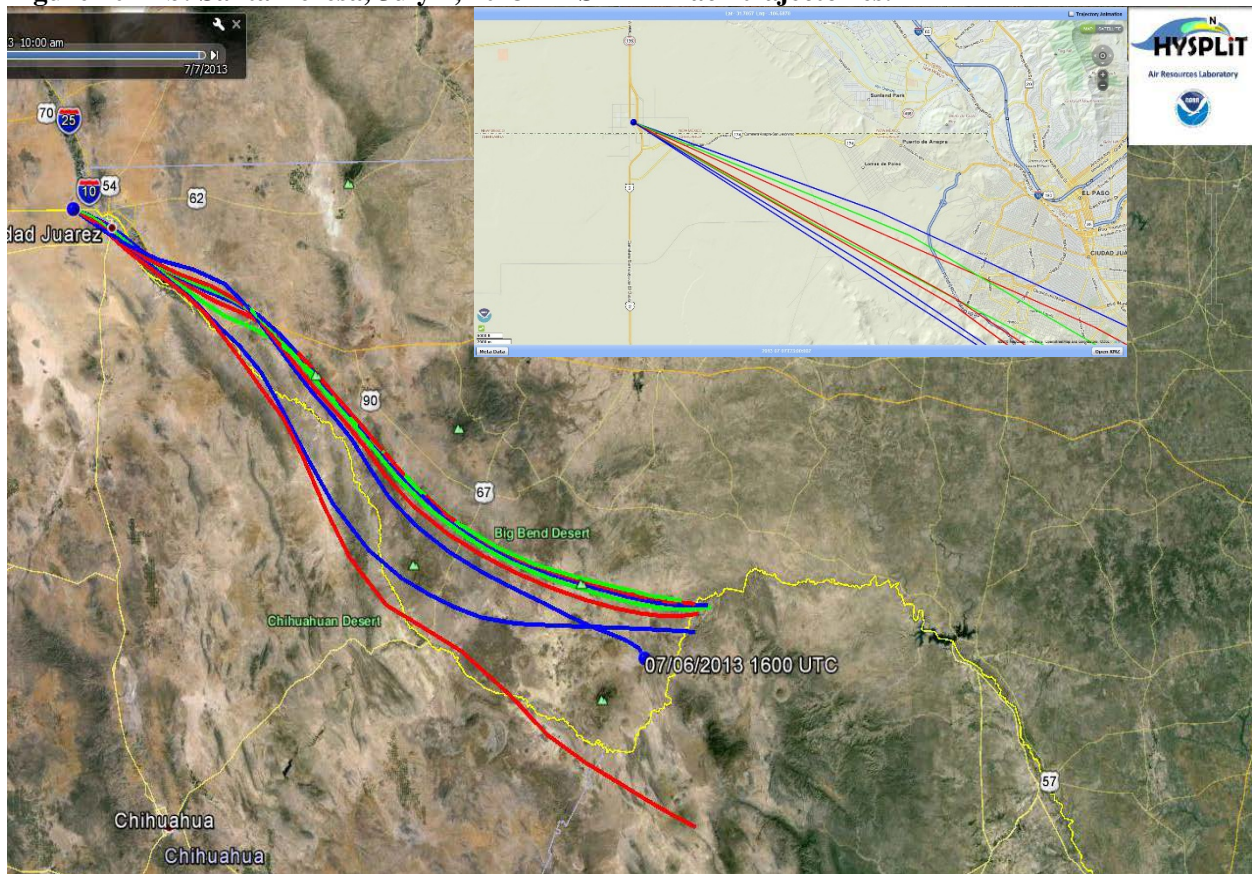
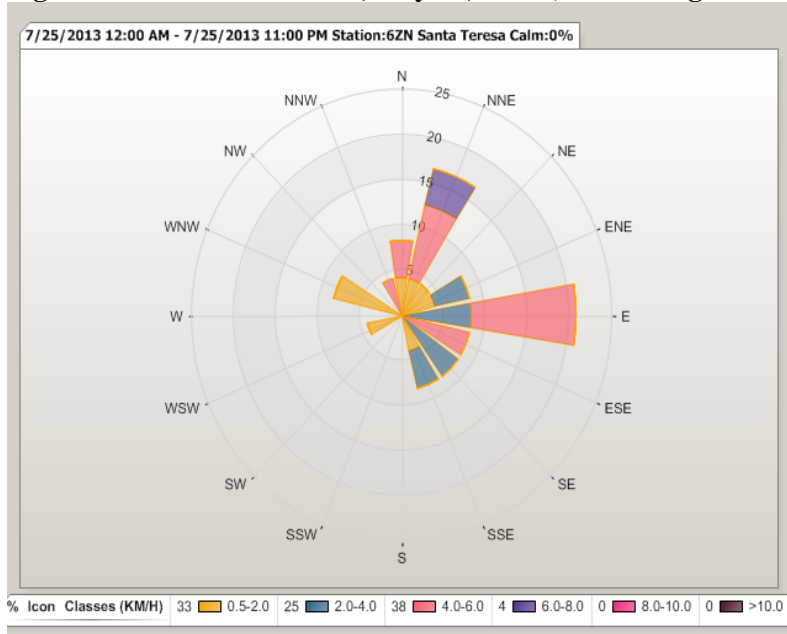


Figure 10-15a: Santa Teresa, July 25, 2013 (8-hr average maximum .081 ppm)



Approximately 57% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-15b: Santa Teresa, July 25, 2013 HYSPLIT Back trajectories.

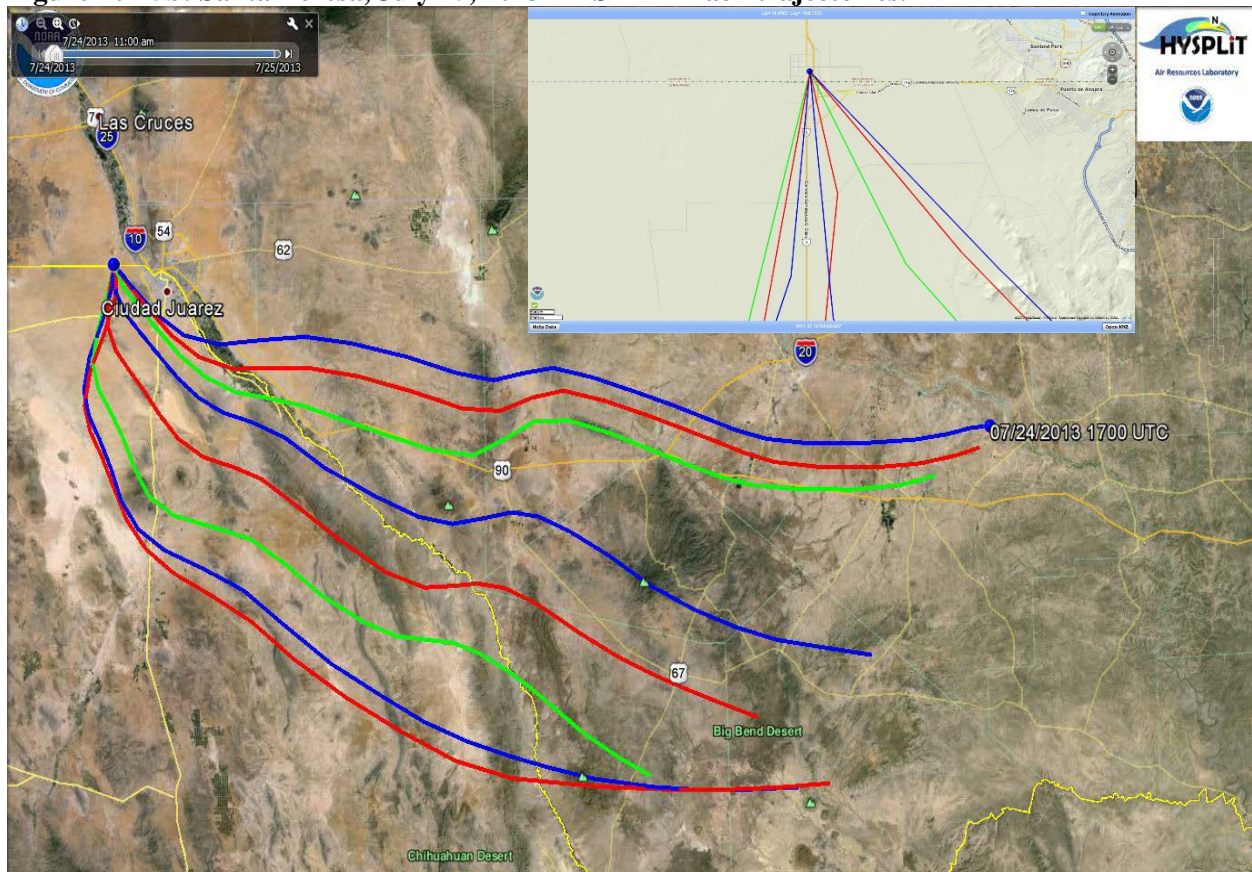
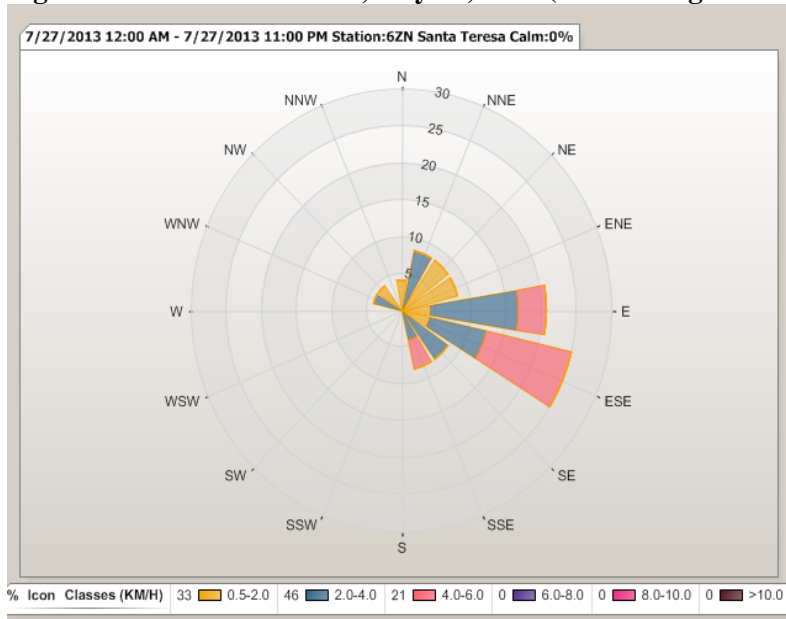


Figure 10-16a: Santa Teresa, July 27, 2013 (8-hr average maximum .089 ppm)



Approximately 76% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-16b: Santa Teresa, July 27, 2013 HYSPLIT Back trajectories.

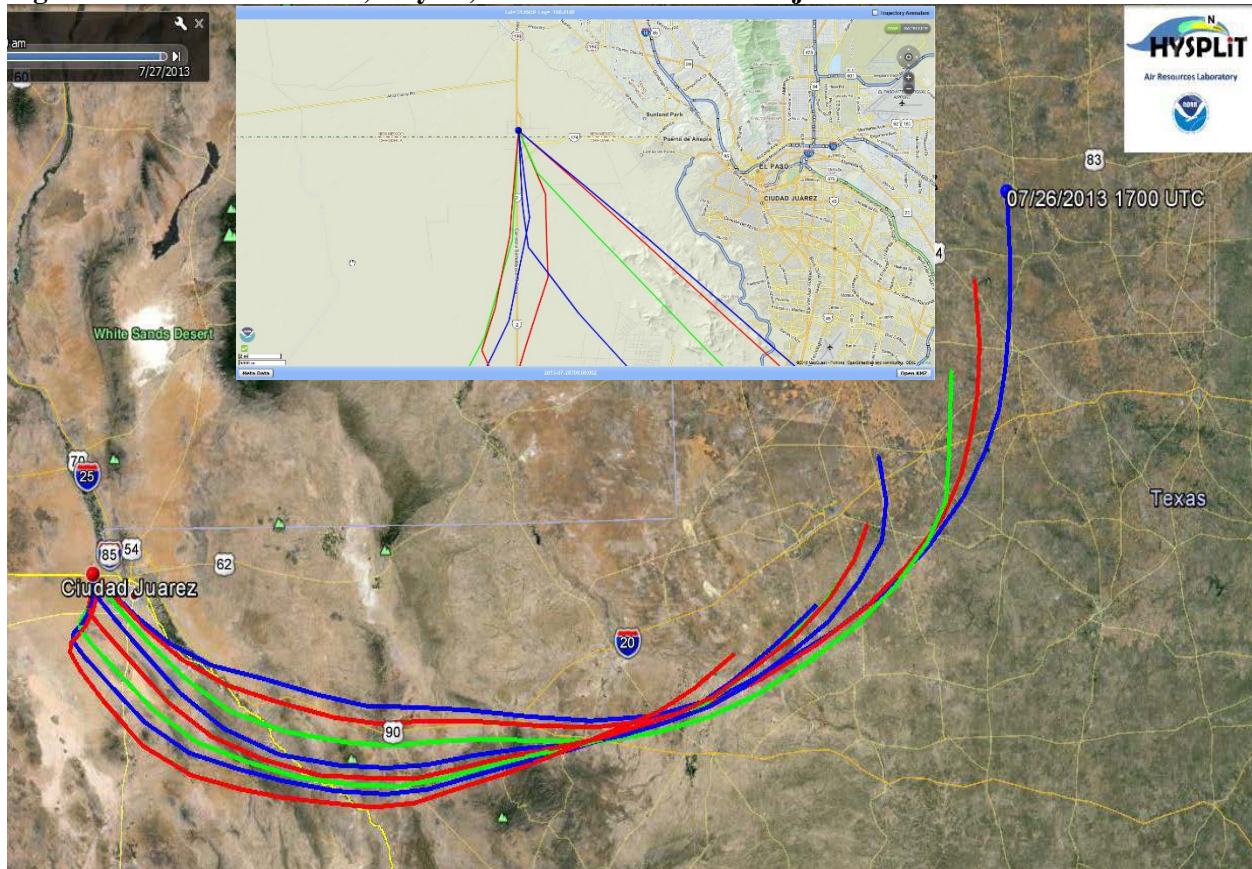
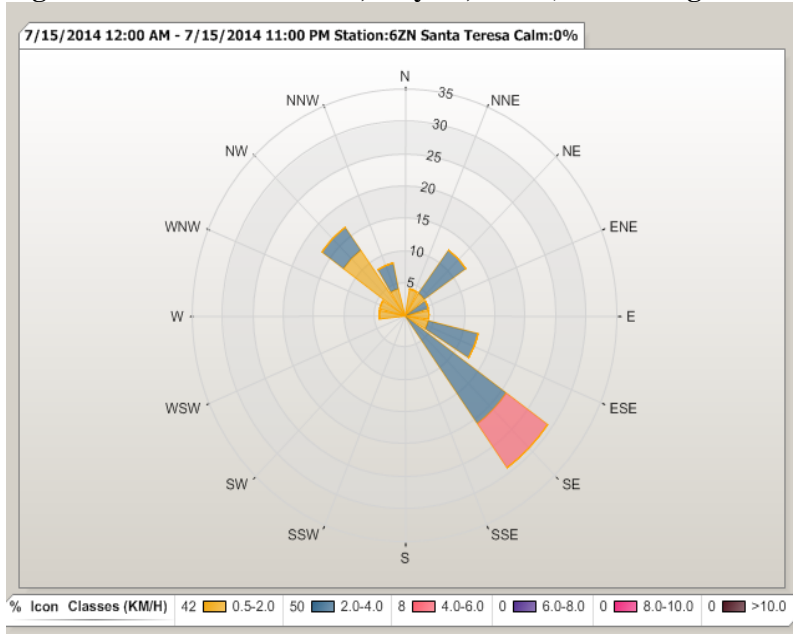


Figure 10-17a: Santa Teresa, July 15, 2014 (8-hr average maximum .077 ppm)



Approximately 61% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-17b: Santa Teresa, July 15, 2014 HYSPLIT Back trajectories.

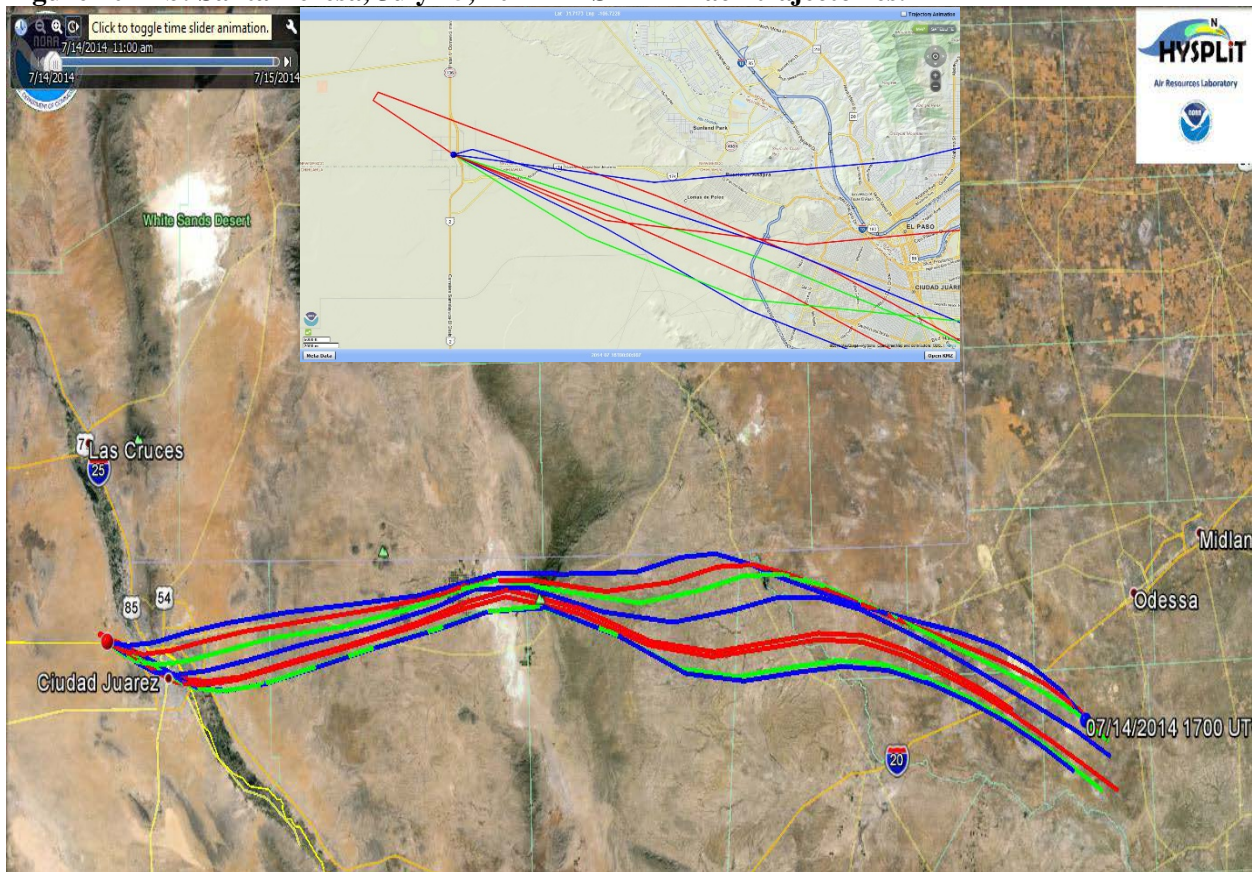
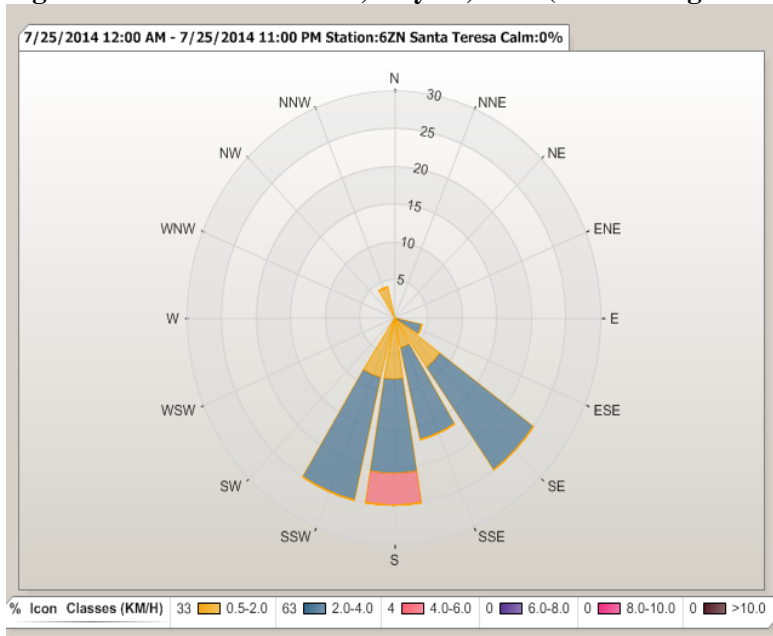


Figure 10-18a: Santa Teresa, July 25, 2014 (8-hr average maximum .064 ppm)



Approximately 96% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-18b: Santa Teresa, July 25, 2014 HYSPLIT Back trajectories.

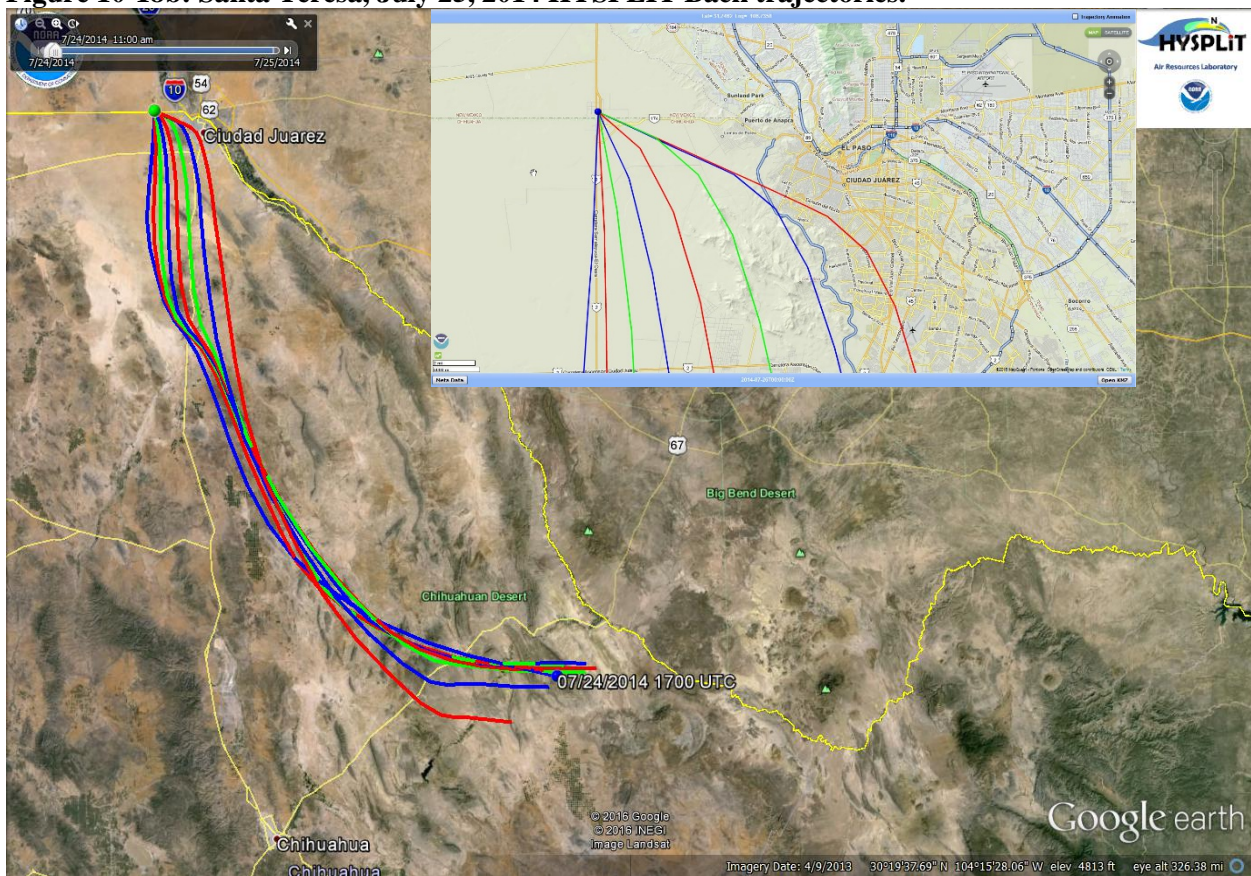
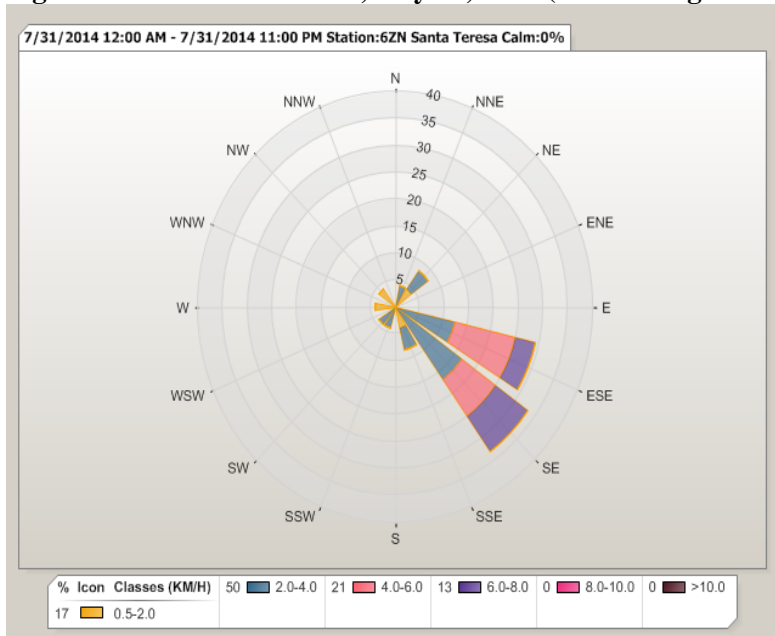


Figure 10-19a: Santa Teresa, July 31, 2014 (8-hr average maximum .068 ppm)



Approximately 72% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-19b: Santa Teresa, July 31, 2014 HYSPLIT Back trajectories.

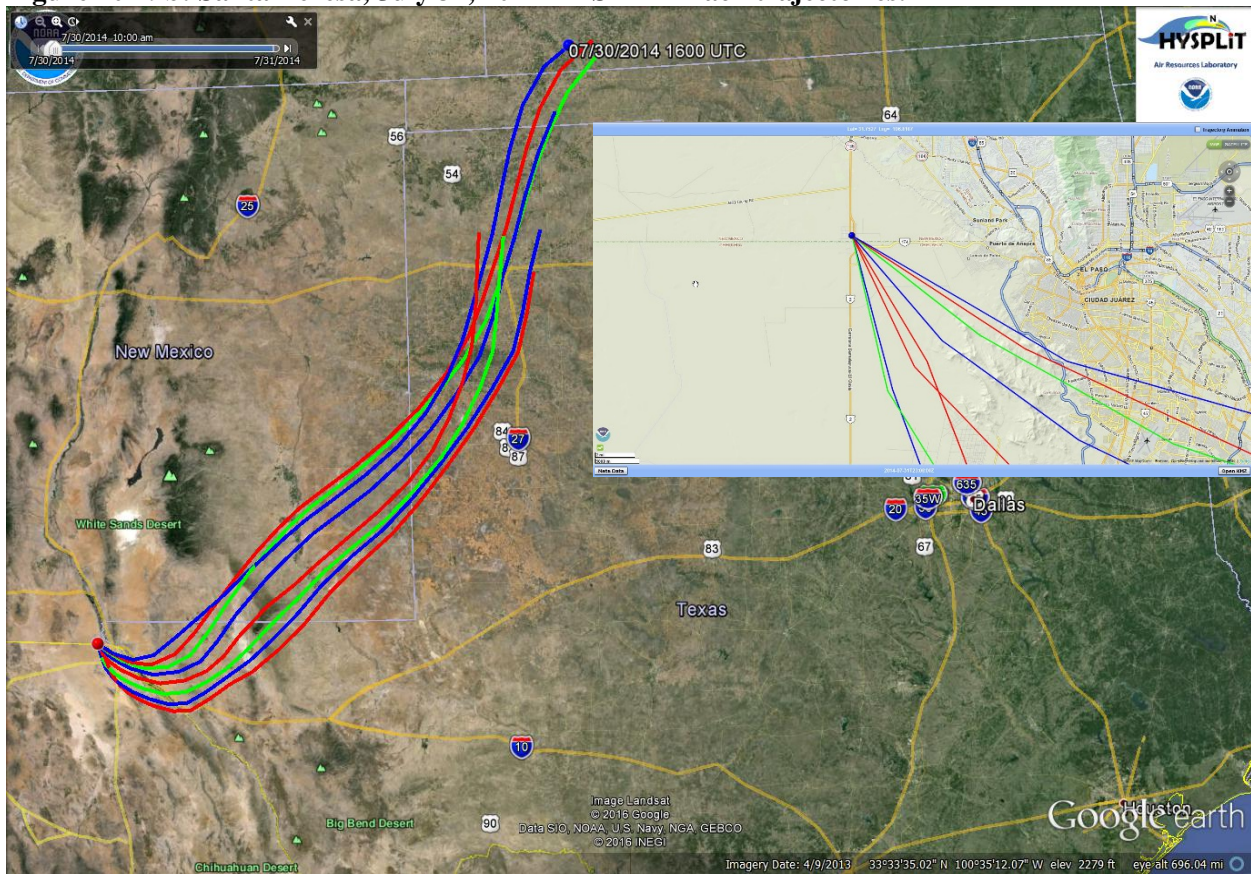
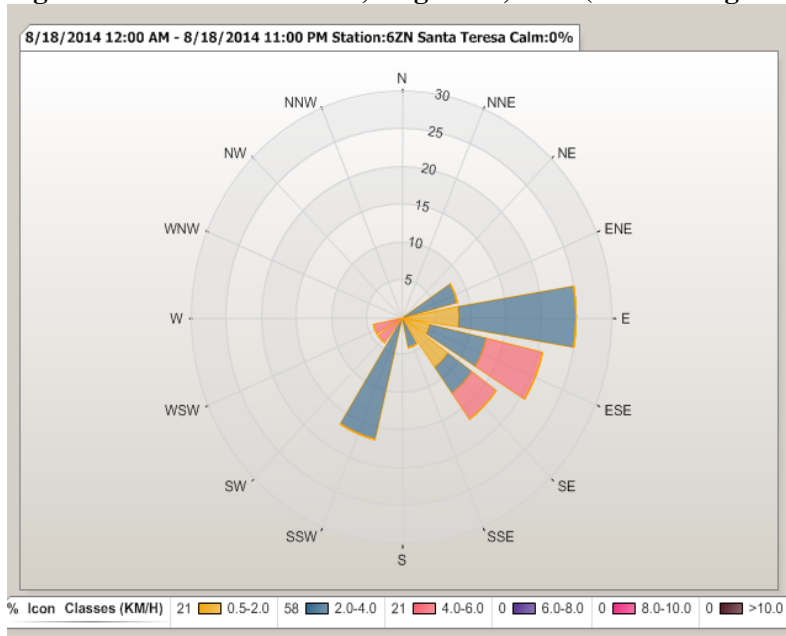


Figure 10-20a: Santa Teresa, August 18, 2014 (8-hr average maximum .069 ppm)



Approximately 92% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-20b: Santa Teresa, August 18, 2014 HYSPLIT Back trajectories.

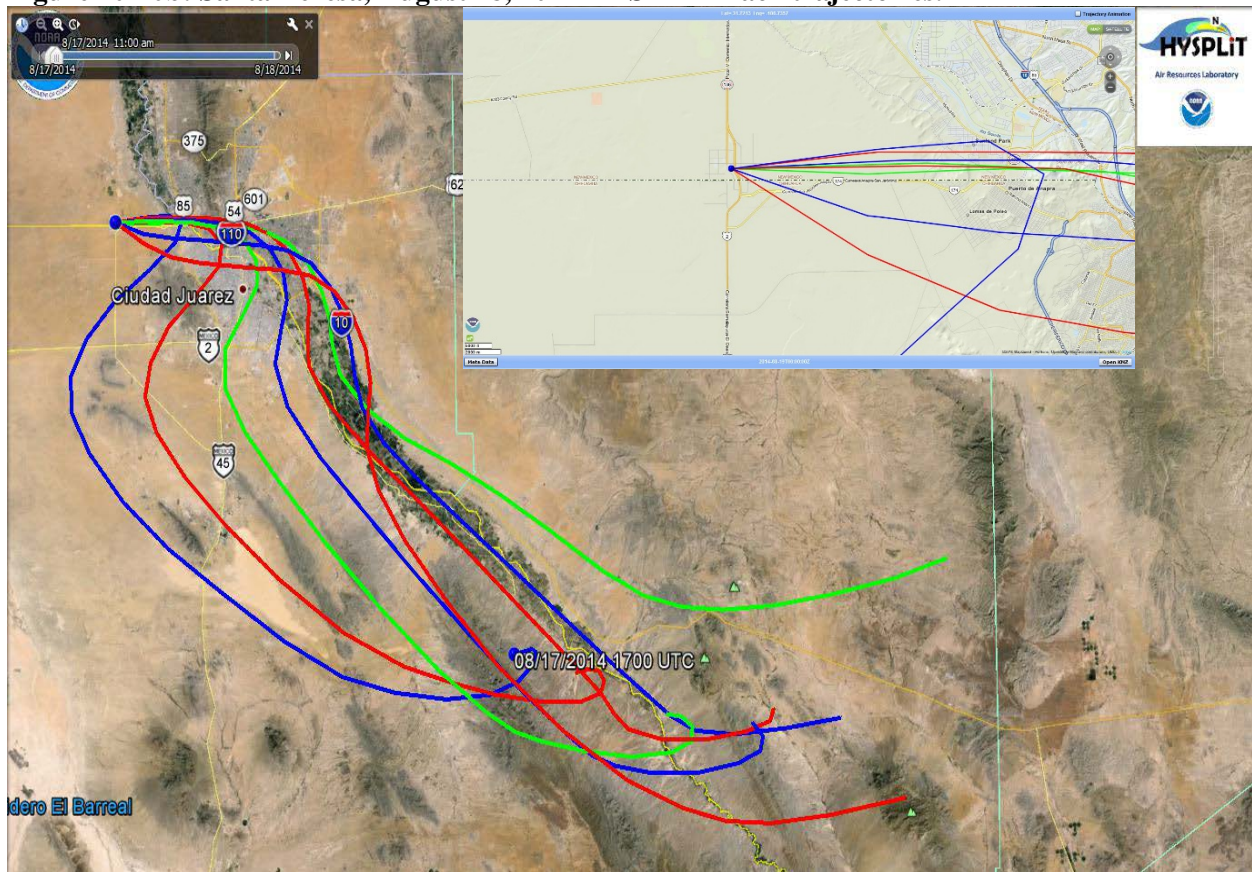
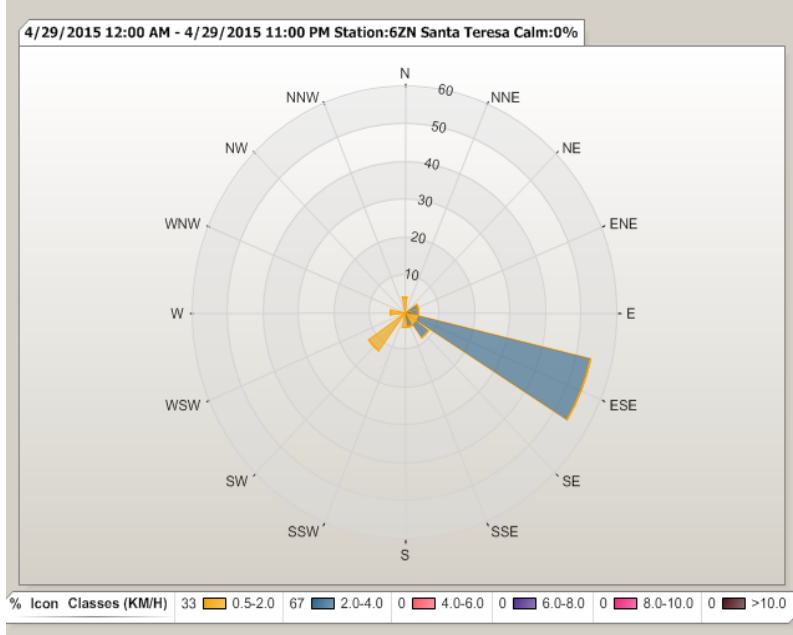


Figure 10-21a: Santa Teresa, April 29, 2015 (8-hr average maximum .070 ppm)



Approximately 77% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-21b: Santa Teresa, April 29, 2015 HYSPLIT Back trajectories.

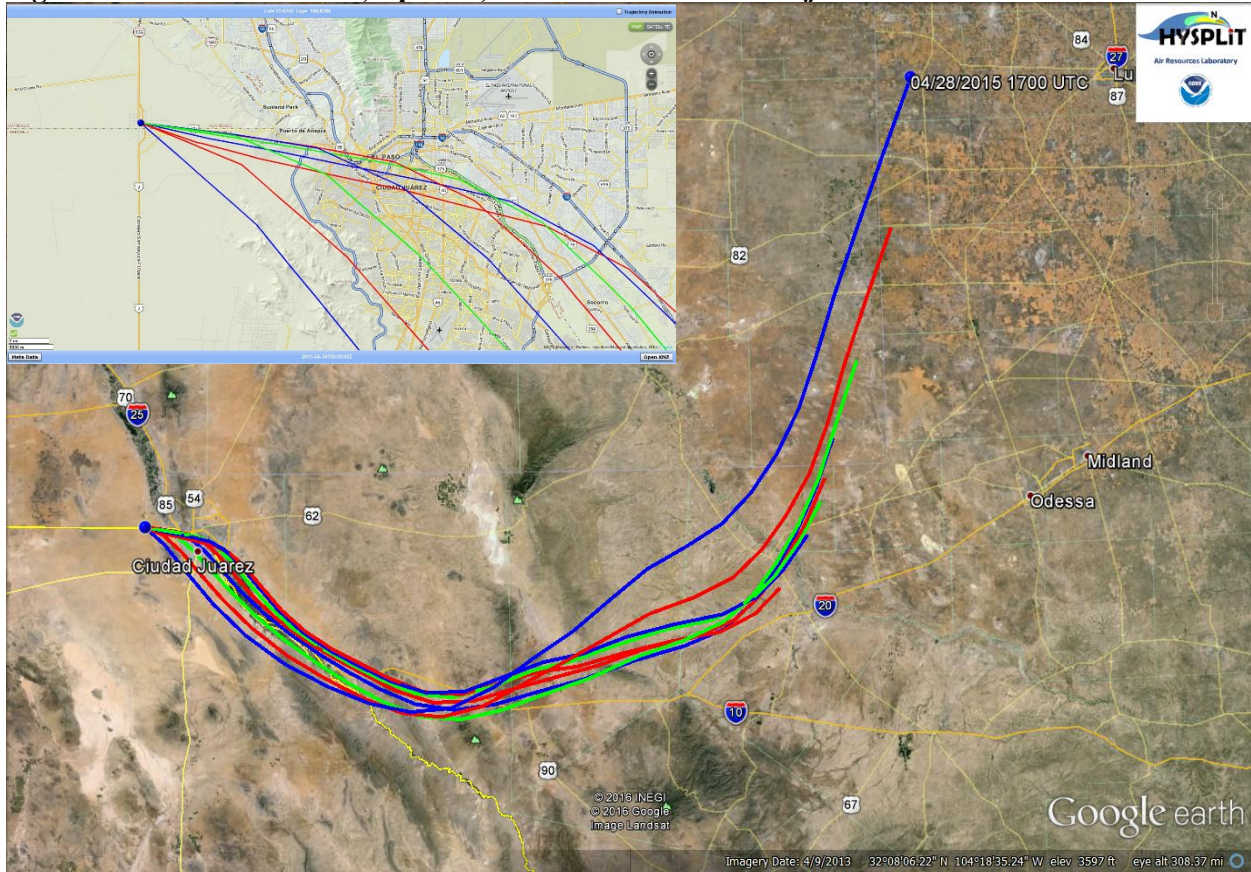
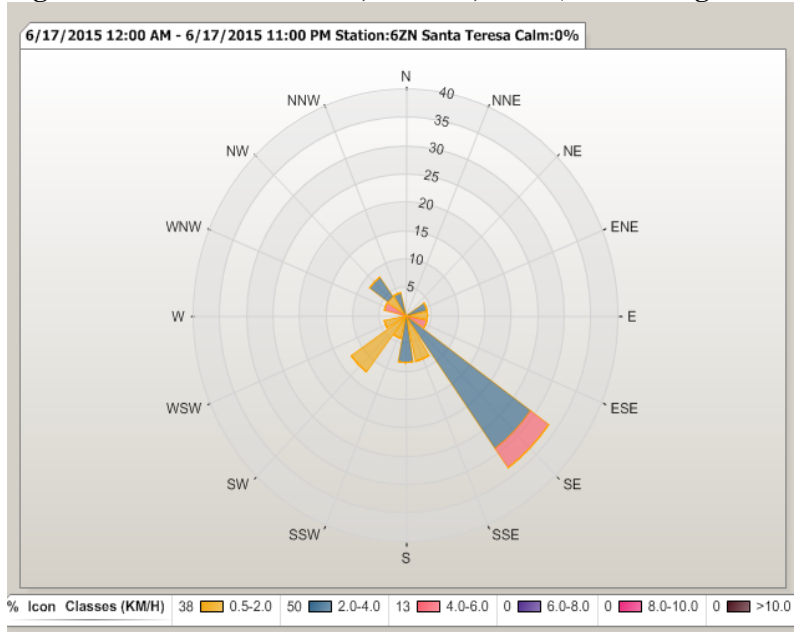


Figure 10-22a: Santa Teresa, June 17, 2015 (8-hr average maximum .070 ppm)



Approximately 66% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-22b: Santa Teresa, June 17, 2015 HYSPLIT Back trajectories.

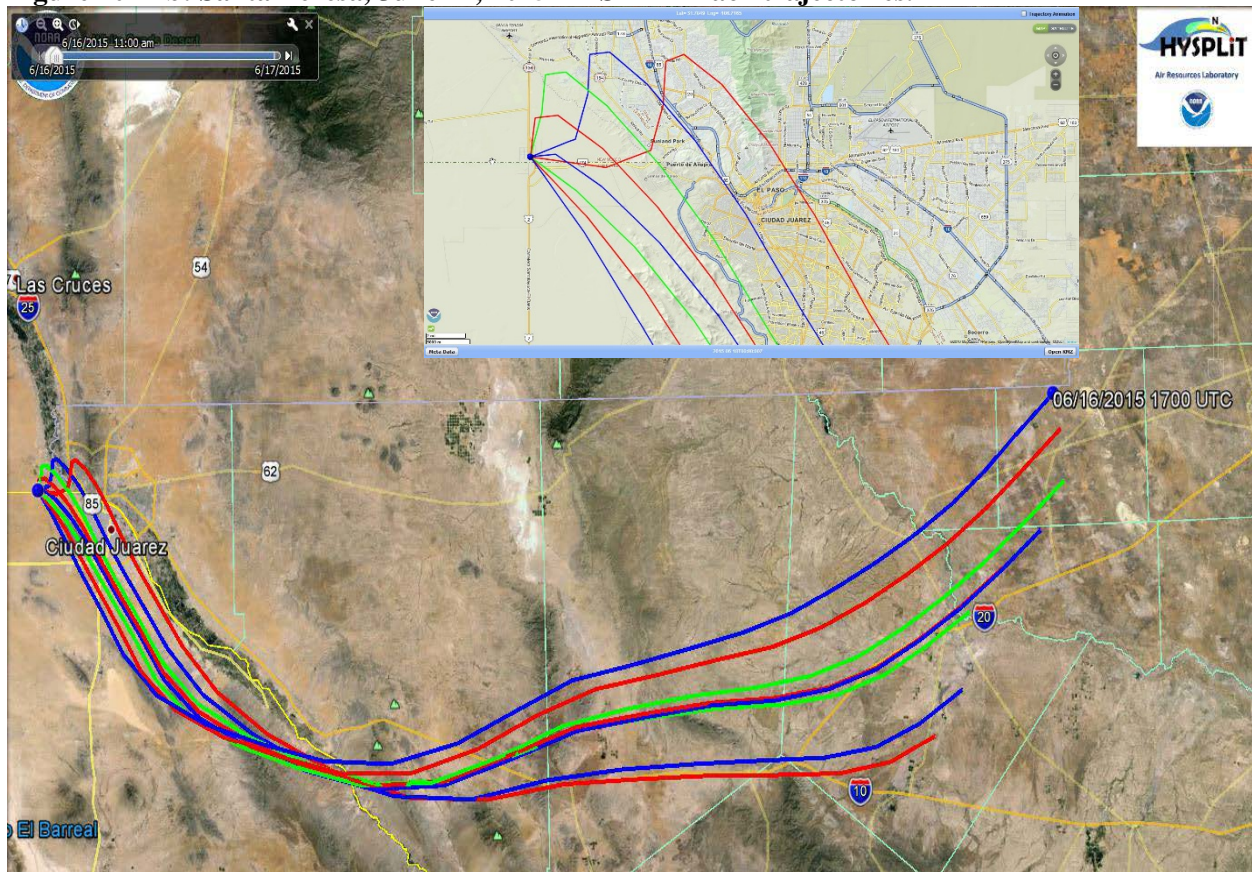
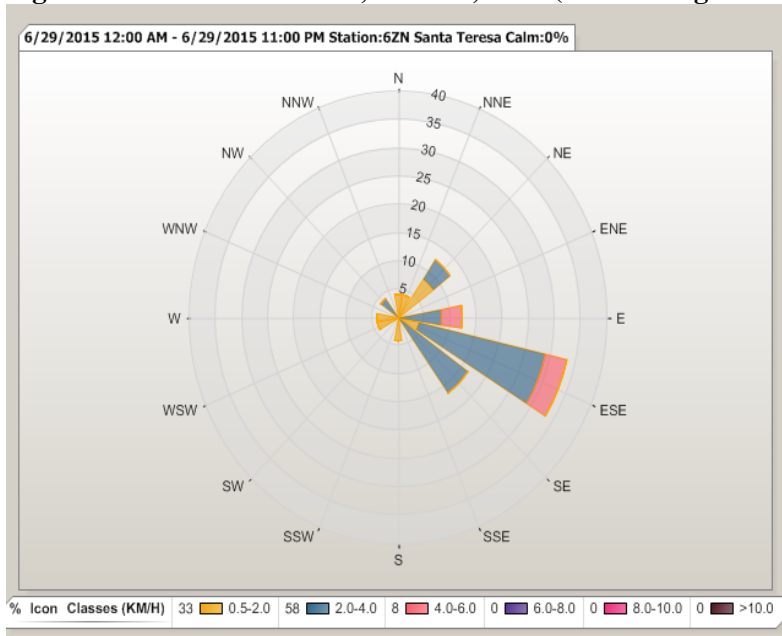


Figure 10-23a: Santa Teresa, June 29, 2015 (8-hr average maximum .074 ppm)



Approximately 84% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-23b: Santa Teresa, June 29, 2015 HYSPLIT Back trajectories.

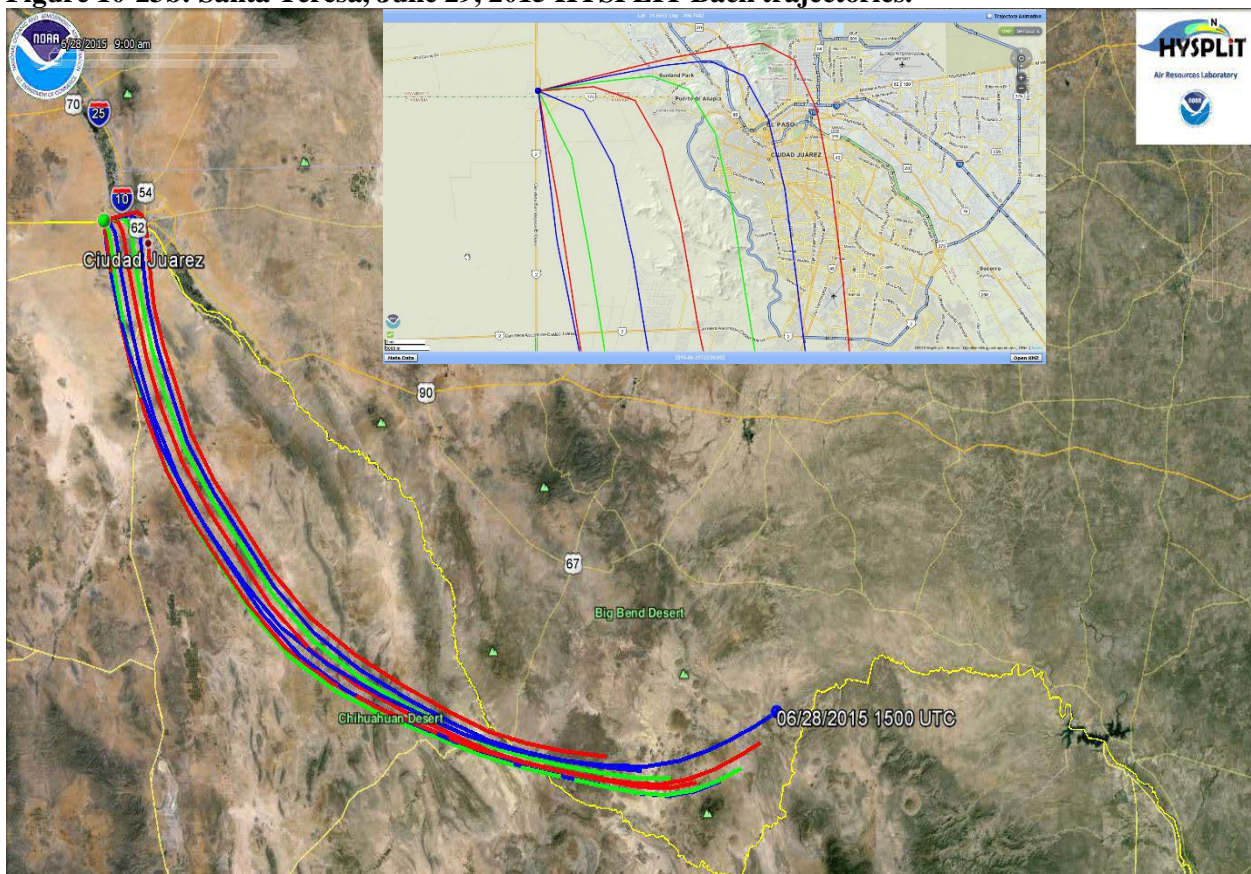
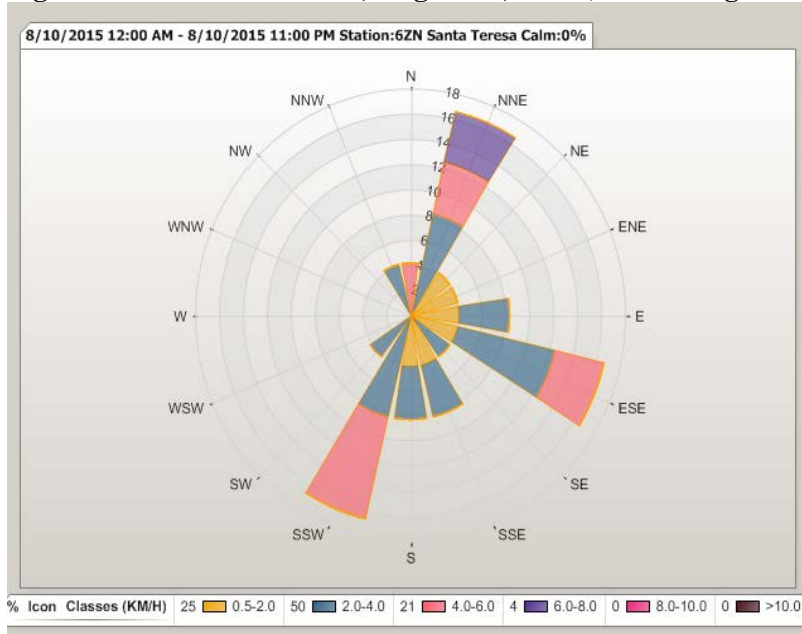


Figure 10-24a: Santa Teresa, August 10, 2015 (8-hr average maximum .072 ppm)



Approximately 70% of the winds on this date blew from the direction of El Paso and Juárez.

Figure 10-24b: Santa Teresa, August 10, 2015 HYSPLIT Back trajectories.

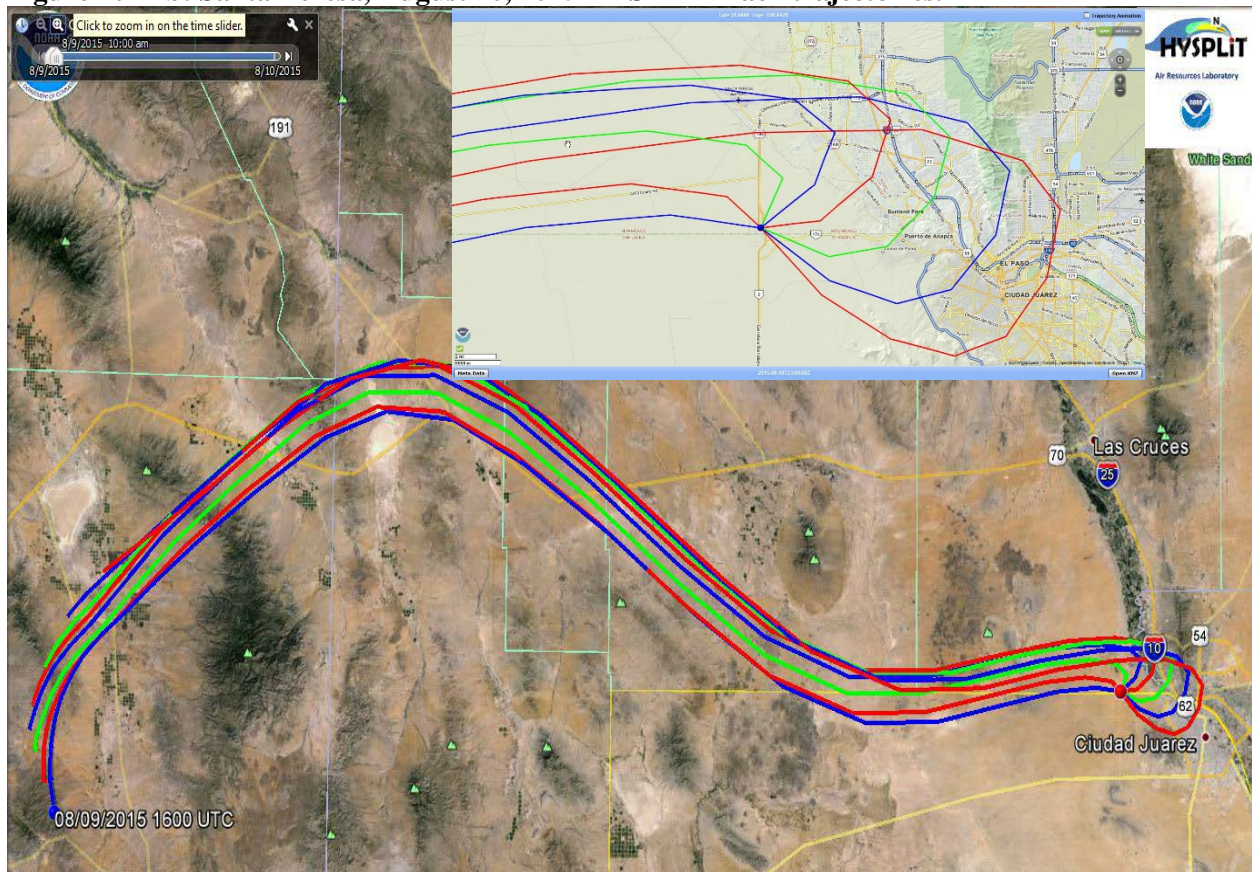


Figure 10-25: Ozone Mapping Tool, HYSPLIT back trajectories for El Paso, TX

