STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

May 12, 2008

Susana M. Hildebrand, PE
Director, Air Quality Division
Texas Commission on Environmental Quality
PO Box 13087
Austin, Texas 78711-3087

Dear Ms. Hildebrand:

We received your letter of March 25, 2008, regarding regional haze at the Wichita Mountains National Wildlife Refuge. We concur with the information that you enclosed with that letter.

As you know, we developed our reasonable progress goal for the Wichita Mountains through Central Regional Air Planning Association (CENRAP) deliberation. This goal does not anticipate emissions reductions beyond those that you already plan to implement and upon which CENRAP modeling studies have relied. Our reasonable progress goal nevertheless falls short of the uniform rate of improvement necessary to reach the default natural visibility conditions in 2064. Reaching our progress goal requires constraints on emissions from new, modified, and existing sources.

We requested in our August 3, 2007, consultation letter that you require each new and modified source within 300 km of the Wichita Mountains, subject to prevention of significant determination permitting review, to conduct an analysis for its impact on visibility in the refuge, following Federal Land Manager guidance as appropriate. We further requested the opportunity to review and comment on best available control technology determinations for proposed sources projected to significantly contribute to visibility impairment in the Class I area. We appreciate your response of October 15, 2007, committing to provide DEQ the opportunity to comment on control determinations for facilities having the potential to significantly impair visibility at the Wichita Mountains.

Through continued consultation, DEQ requests to be kept informed on the actual emission reductions achieved through Clean Air Interstate Rule implementation in Texas. Further, EPA projects Dallas will attain the newly revised ozone national ambient air quality standard of 75 parts per billion before 2020. As you plan to achieve this goal, we hope that you will consider the effect of your strategy on visibility in the Wichita Mountains. We anticipate that any emission reductions affecting the Dallas air shed will contribute further toward improved visibility in our Class I area.

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We value having had the opportunity to work with you throughout this process. DEQ believes it is important that Oklahoma and Texas continue to work cooperatively to improve air quality in the region and to make reasonable progress toward visibility goals for the Wichita Mountains Class I area. If you have any questions you may contact Dawson Lasseter by email at Dawson.Lasseter@deq.state.ok.us or by phone at (405) 702-4185.

Sincerely,

Eddie Terrill
Division Director
Air Quality Division

ET:dgc

c: Dawson Lasseter

cc. Lee
Phillip
Dawson
Cheryl
Max
Jacob
Scott

Rob-Singletary

Let's discuss our reply
Scott

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 25, 2008

RECEIVED
MAR 28 2008
AIR QUALITY

Mr. Eddie Terrill
Air Quality Division Director
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

Dear Mr. Terrill:

The purpose of this letter is to share with Oklahoma the information that the Texas Commission on Environmental Quality (TCEQ) has developed for Texas on emissions that modeling and analysis indicate affect the Class I area in your state. The TCEQ also requests confirmation from you that Texas' projected emissions reductions will be adequate to meet Texas' apportioned part of the reductions necessary for your state to meet its reasonable progress goal for its Class I area.

As you know, under the Regional Haze Rule, 40 Code of Federal Regulations §51.308, a state must consult with neighboring states on emission strategies and reasonable progress goals for emissions that may be reasonably anticipated to contribute to visibility impairment in Class I areas in those states. This letter is intended to be the culmination of our consultation process for this initial Regional Haze state implementation plan (SIP) submittal.

The information in this letter regarding emissions and probable impacts was developed as part of the Central Regional Air Planning Association (CENRAP) planning process. The TCEQ has been involved in the CENRAP since its inception in 1999. The CENRAP's evaluation of regional haze sources in the central states and beyond has been invaluable in the member states' combined effort to determine the impacts of regional haze on Class I areas in the region and to assess the effectiveness of future control efforts. As contemplated in the Regional Haze Rule, regional planning organizations like the CENRAP are the vehicle through which states agree on regional haze impacts and emissions reduction apportionment obligations. We have also appreciated Oklahoma's input on the development of our SIP revision during our past consultation conferences with the CENRAP states and federal land managers.

As described in our proposed Regional Haze SIP revision, the TCEQ provided the CENRAP emissions inventory information for all source categories in Texas. The CENRAP conducted Particulate Matter Source Apportionment Technology (PSAT) modeling to determine the contribution from each source area to visibility impairment at Class I areas in the region. These

results are enclosed for Oklahoma's only Class I area, the Wichita Mountains Wilderness Area. The TCEQ participated fully in the analysis of this data, base period visibility impairment, natural visibility condition estimates, and 2018 projections based on current and anticipated future state and federal controls. The PSAT modeling indicates that the probable impact of Texas sources will be reduced by 2018 in the Wichita Mountains Wilderness Area due to the expected emissions reductions from current and planned controls.

The CENRAP developed areas of influence for each Class I area in the CENRAP states. For reference purposes, the enclosed map shows the portions of Texas that are in the first and second order sulfate and nitrate areas of influence for the Wichita Mountains Wilderness Area. The sulfur dioxide and nitrogen oxide sources shown on the map are Texas sources we have identified as high priority due to the fact that they have an emissions over distance equal to or greater than five (q/d $\geq$5) for one or more Class I areas. We have also included a table of sources of particular interest to Wichita Mountains due to their emissions and their positions within the area of influence.

As required under the Regional Haze Rule, a review of Texas sources and the impact of emissions on regional haze will be conducted for all of the five-year progress reports and 10-year SIP revisions in order to determine the efficacy of current controls.

The TCEQ is requesting Oklahoma's concurrence on this assessment and a verification that your state is not depending on any additional reductions from Texas sources in order to meet your reasonable progress goal(s). So that we may prepare and submit our Regional Haze SIP revision to the United States Environmental Protection Agency by this summer, we would appreciate a response within 30 days. If you have any questions or comments on this letter or wish to set up a time to consult further, please contact Margaret Earnest at mearnest@tceq.state.tx.us or 512-239-4581.

Sincerely,

Susana M. Hildebrand, P.E., Director
Air Quality Division

SMH/ME/sy

Enclosures

cc: Scott Thomas, Oklahoma Department of Environmental Quality ✓

Measured 2002 and Projected 2018 Visibility Impacts on the Wichita Mountains Wilderness Area in Oklahoma Including the Impact of Texas' Emissions

The following table shows the 2002 measured visibility impacts and the 2018 projected visibility impacts from all source areas on one Class I area in Oklahoma and the impacts apportioned to be from Texas. The associated figures show the apportioned impacts from all source areas that the modeling separated, including three areas of Texas.

CENRAP produced these results using particulate matter source apportionment technology (PSAT) modeling and relative response factors according to EPA regional haze modeling guidance. The data are from the August 27, 2007, version of the PSAT tool that Environ produced for CENRAP. The database file is available from the CENRAP web site at http://cenrap.org/projects.asp under the listing "27 Aug 2007 Updated CENRAP PSAT Visualization Tool - 36 MB zip."

Table 1: Texas' apportioned contribution to the measured 2002 and projected 2018 total visibility extinction at Wichita Mountains Wilderness Area

Particulate Matter Constituent	2002 Impacts at Wichita Mountains (inverse megameters)		2018 Impacts at Wichita Mountains (inverse megameters)	
	Texas Total	Total, All Source Areas	Texas Total	Total, All Source Areas
Sulfate	13.98	49.12	9.68	33.33
Nitrate	7.89	23.72	6.08	18.10
Primary Organic Aerosol	3.05	11.81	2.57	10.92
Elemental Carbon	1.42	4.47	0.68	3.00
Fine Soil	0.29	0.79	0.30	0.79
Coarse Mass	1.51	4.64	1.49	4.35
Secondary Organic Aerosol, Anthropogenic	not available[1]	2.57	not available[1]	2.22
Secondary Organic Aerosol, Biogenic	not available[1]	2.91	not available[1]	2.84
Total	28.15	100.03	20.79	75.56

[1] The CENRAP PSAT modeling did not apportion either the anthropogenic or the biogenic secondary organic aerosol (SOA). The reasons are (1) that sulfate and nitrate are generally the main causes of visibility impairment resulting from human activity and (2) that tracking the multiple volatile organic compound constituents and reaction products necessary to apportion SOA would have extended the modeling run times far beyond the time that was available for the modeling.

Figure 1: Measured 2002 extinction on the worst 20 percent of days at Wichita Mountains Wilderness Area apportioned using PSAT modeling

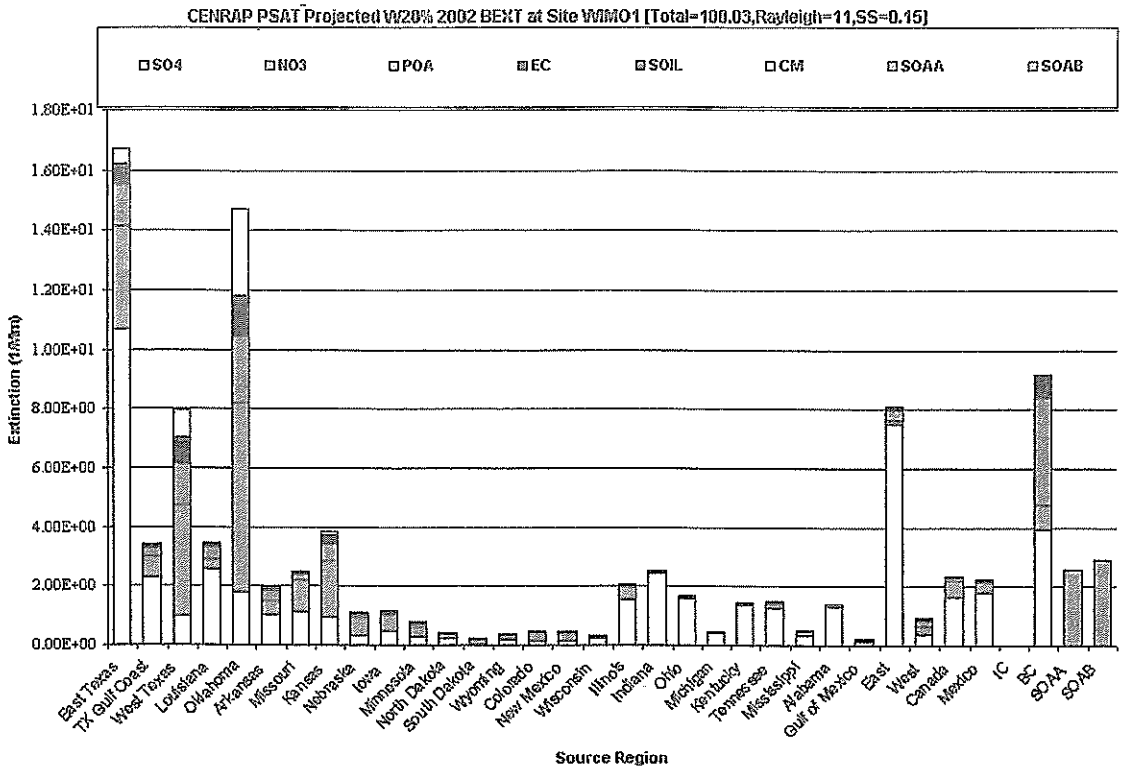
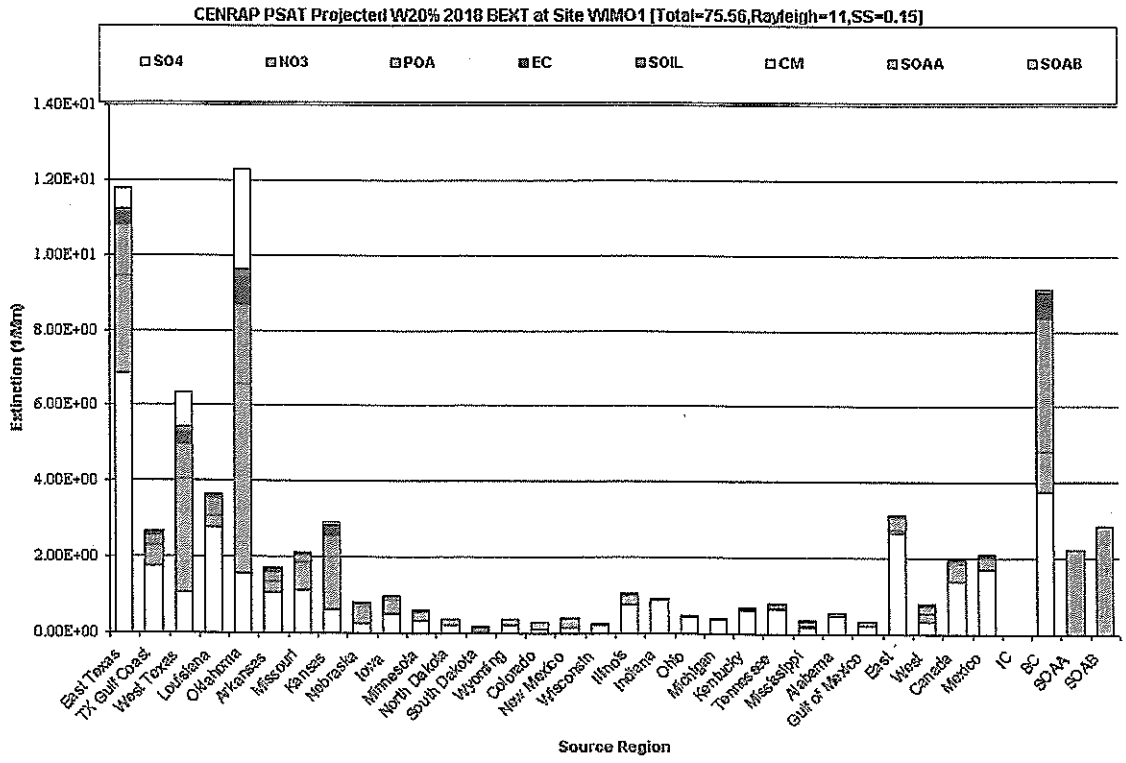


Figure 2: Projected 2018 extinction on the worst 20 percent of days at Wichita Mountains Wilderness Area apportioned using PSAT modeling



Protecting Texas by Reducing and Preventing Pollution

TCEQ

Texas Commission on Environmental Quality
Chief Engineer's Office
Air Quality Division
P.O. Box 13087 (MC-164)
Austin, Texas 78711-3087

February 11, 2008

Class I Areas Relevant to CENRAP
Wichita Mountains

Adam D Bullock
CENRAP/EAS
512/239-5155

N
W E
S

Legend

- SO2
- NOx
- Class I Areas
- NO3 AOI
- SO4 AOI

Bandelier W
Pecos W
White Mountain W
Salt Creek W
Chiricahua W
Carlsbad Caverns NP
Guadalupe Mountains NP
Big Bend NP
Wichita Mountains W
Hercules-Glades W
Upper Buffalo W
Caney Creek W

0 50 100 200
Miles

Source: NOx and SO2 2002 emission and coordinate data extracted from the State of Texas Air Reporting System (STARS) database. AOI shapefiles from Alpine Geophysics.

Disclaimer: This map was generated by the Emissions Assessment Section (EAS) of the Texas Commission on Environmental Quality. No claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information concerning this map contact Adam Bullock at (512) 239-5155 or the EAS at (512) 239-1773.

Units Inside the Wichita Mountains Area of Influence

Site	SIC	Federal ID			Emissions (tpy)			Distance to Wichita Mts (km)	Notes
		cty	plt	pt	NOx 2002	NOx 2018 base	Change from 2002		
San Miguel Electric	4911	13	7	1	6,702	4,179	-2,523	672	
Sommers Deely Spruce	4911	29	63	17	4,146	2,431	-1,715	606	
Sommers Deely Spruce	4911	29	63	2	3,247	2,063	-1,184	606	
TXI - Midlothian	3241	139	9	215	1,823	2,601	778	299	
Holcim	3241	139	22	46	2,265	2,725	460	297	
Holcim	3241	139	22	7	1,910	2,265	355	297	
TXU - Valley Stream	4911	147	1	2	1,694	493	-1,201	250	
LCRA - Fayette	4911	149	5	8	6,911	2,674	-4,237	567	
LCRA - Fayette	4911	149	5	7	6,130	2,290	-3,840	567	
LCRA - Fayette	4911	149	5	16	6,077	2,764	-3,313	568	
NRG - Parish	4911	157	5	6	4,230	775	-3,455	654	
NRG - Parish	4911	157	5	7	3,832	812	-3,020	654	
NRG - Parish	4911	157	5	14	3,782	974	-2,808	654	
TXU - Big Brown	4911	161	2	10	3,809	3,725	-84	409	
TXU - Big Brown	4911	161	2	11	3,394	3,574	180	409	
Coleto Creek	4911	175	2	1	3,563	4,261	698	686	
Cabot	2895	179	1	40	1,046	1,230	184	224	
Celanese	2869	179	2	90	1,295	1,277	-18	226	
Celanese	2869	179	2	91	1,249	523	-726	226	
AES Deepwater	4911	201	405	1	3,575	1,578	-1,997	649	
SWEPCO - Pirky	4911	203	22	1	4,953	4,893	-60	467	
TXU - Decordova	4911	221	1	5	5,631	1,190	-4,441	277	
SWEPCO - Tolk	4911	279	18	2	6,129	2,698	-3,431	358	
SWEPCO - Tolk	4911	279	18	1	5,986	2,510	-3,476	358	
NRG - Limestone	4911	293	10	2	7,987	5,703	-2,284	435	
NRG - Limestone	4911	293	10	3	5,474	5,117	-357	435	
TXU - Tradinghouse	4911	309	4	6	3,640	1,057	-2,583	389	
Alcoa, Inc	3334	331	1	12	2,940		-2,940	490	Shutdown by 2018
Alcoa, Inc	3334	331	1	11	2,651		-2,651	490	Shutdown by 2018
Alcoa, Inc	3334	331	1	10	2,511		-2,511	490	Shutdown by 2018
TXU - Sandow	4911	331	5	15	7,670	5,509	-2,161	490	
TXU - Morgan Creek	4911	335	1	13	2,455	731	-1,724	336	
SWEPCO - Harrington	4911	375	22	4	4,647	1,779	-2,868	282	
SWEPCO - Harrington	4911	375	22	5	4,330	1,962	-2,368	282	
SWEPCO - Harrington	4911	375	22	7	4,162	1,845	-2,317	282	
TXU - Martin Lake	4911	401	11	6	9,480	8,516	-964	474	
TXU - Martin Lake	4911	401	11	7	4,503	5,251	748	474	
TXU - Martin Lake	4911	401	11	8	4,481	5,105	624	474	
SWEPCO - Welsh	4911	449	5	11	6,716	1,526	-5,190	404	
SWEPCO - Welsh	4911	449	5	10	3,245	923	-2,322	404	
TXU - Monticello	4911	449	3	9	6,224	4,553	-1,671	387	
TXU - Monticello	4911	449	3	10	5,593	5,834	241	387	
TXU - Monticello	4911	449	3	7	4,102	3,041	-1,061	387	
TXU - Permian Basin	4911	475	4	7	2,781	285	-2,496	528	
PPG	4733	485	15	19	2,695	4,733	2,038	85	
PPG	4733	485	15	20	2,495	4,192	1,697	85	
Oklaunion	4911	487	10	2	8,711	6,253	-2,458	85	
TXU - Graham Station	4911	503	1	2	1,071	297	-774	180	
Total					203,941	128,717	-75,224		

Units Inside the Wichita Mountains Area of Influence

Site	SIC	Federal ID cty	plt	pt	Emissions (tpy) SO2 2002	SO2 2018 base	Change from 2002	Distance to Wichita Mts (km)	Notes
DCP MIDSTREAM	1321	3	10	72	2,374	3,038	665	458	
SAN MIGUEL POWER	4911	13	7	1	13,167	6,550	-6,617	672	
SOMMERS DEELY SRUCE	4911	29	63	4	9,983	10,836	853	606	
SOMMERS DEELY SRUCE	4911	29	63	2	11,531	10,836	-695	606	
SOMMERS DEELY SRUCE	4911	29	63	17	4,782	4,350	-432	606	
ASH GROVE	3241	139	2	10	1,706	2,699	993	294	
HOLCIM	3241	139	22	46	1,725	2,461	736	297	
DCP GIDDINGS	4911	149	5	7	13,617	10,450	-3,167	567	
DCP GIDDINGS	4911	149	5	8	16,401	10,375	-6,026	567	
NRG - PARISH	4911	157	5	6	20,523	3,733	-16,790	654	
NRG - PARISH	4911	157	5	7	17,863	3,809	-14,054	654	
NRG - PARISH	4911	157	5	8	17,900	3,297	-14,603	654	
NRG - PARISH	4911	157	5	14	3,948	4,512	564	654	
TXU BIG BROWN	4911	161	2	10	43,413	23,641	-19,772	409	
TXU BIG BROWN	4911	161	2	11	34,448	23,142	-11,306	409	
BP TEXAS CITY	2911	167	1	274	3,599	47	-3,552	697	Refinery Consent Decree
COLETO CREEK	4911	175	2	1	14,289	16,096	1,808	686	
CELANESE	2869	179	2	90	1,987	1,960	-27	226	
CELANESE	2869	179	2	91	2,024	1,160	-864	226	
GIBBONS CREEK	4911	185	2	2	10,816	2,652	-8,164	521	
SHELL	2911	201	39	208	4,697	549	-4,148	653	Refinery Consent Decree
RHODIA	2819	201	37	11	5,097	7,005	1,908	646	
AEP DEEPWATER	4911	201	405	1	4,370	0	-4,370	649	error in IPM run
SWEPCO PIRKY	4911	203	22	1	19,476	19,478	2	467	
REGENCY COMO	1321	223	2	4	2,739	3,590	851	356	
SID RICHARDSON	2895	227	2	1	2,156	3,890	1,734	370	
SID RICHARDSON	2895	227	2	3	2,156	3,890	1,734	370	
SID RICHARDSON	2895	227	2	5	2,156	3,890	1,734	370	
DEGUSSA BORGER	2895	233	1	12	3,595	4,314	719	266	
SID RICHARDSON BORGER	2895	233	2	4	3,348	4,262	914	266	
PHILLIPS BORGER	2911	233	15	291	4,629	59	-4,570	262	Refinery Consent Decree
PHILLIPS BORGER	2911	233	15	290	3,785	48	-3,737	262	Refinery Consent Decree
DCP MIDSTREAM	1321	233	6	1	1,452	1,684	232	265	
EXXONMOBIL BEAUMONT	2911	245	18	321	9,387	119	-9,267	679	Refinery Consent Decree
SWEPCO TOLK	4911	279	18	1	12,703	10,465	-2,238	358	
SWEPCO TOLK	4911	279	18	2	12,171	11,492	-679	358	
NRG LIMESTONE	4911	293	10	2	16,293	12,715	-3,578	435	
NRG LIMESTONE	4911	293	10	3	12,974	4,983	-7,991	435	
ALCOA	3334	331	1	10	16,120		-16,120	490	Shutdown, Not in 2018 file
ALCOA	3334	331	1	11	16,121		-16,121	490	Shutdown, Not in 2018 file
ALCOA	3334	331	1	12	15,938		-15,938	490	Shutdown, Not in 2018 file
TXU SANDOW	3334	331	5	15	23,305	8,409	-14,896	490	
TXI STREETMAN	3295	349	11	15	3,468	4,886	1,418	385	
HARRINGTON	4911	375	22	4	9,197	7,891	-1,306	282	
HARRINGTON	4911	375	22	5	8,927	7,714	-1,213	282	
HARRINGTON	4911	375	22	7	8,844	7,104	-1,740	282	
EL PASO NAT'L GAS	4922	389	2	31	3,385	4,059	674	562	
TWIN LAKES	4911	395	13	21	2,508	840	-1,668	448	
TWIN LAKES	4911	395	13	17	2,580	834	-1,746	448	
MARTIN LAKE	4911	401	11	6	24,832	11,351	-13,481	474	
MARTIN LAKE	4911	401	11	7	22,538	11,984	-10,554	474	
MARTIN LAKE	4911	401	11	8	19,024	12,396	-6,628	474	
SWEPCO WELSH	4911	449	5	12	12,259	11,721	-538	404	
SWEPCO WELSH	4911	449	5	11	11,995	1,223	-10,772	404	
SWEPCO WELSH	4911	449	5	10	11,584	1,227	-10,357	404	
TXU MONTICELLO	4911	449	3	7	28,643	19,144	-9,499	387	
TXU MONTICELLO	4911	449	3	9	34,700	19,695	-15,005	387	
TXU MONTICELLO	4911	449	3	10	22,889	11,882	-11,007	387	
OKLAUNION	4911	487	10	2	3,751	7,101	3,350	85	
Total					671,886	387,539	-284,347		

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 15, 2007

Mr. Steve Thompson
Executive Director
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

Dear Mr. Thompson:

I'm writing in response to your August 3, 2007 letter regarding the improvement of visibility in the Wichita Mountain National Wildlife Refuge.

The Texas Commission on Environmental Quality (TCEQ) agrees that the modeling shows Texas to be a significant source of visibility impairing pollution in the Wichita Mountains. As you know from our agencies' work together in the Central Regional Air Planning Group, there will be significant reductions in emissions from Texas in the next several years, and visibility at the Wichita Mountains will improve as a result of these reductions. We will continue to work with the Oklahoma Department of Environmental Quality (DEQ), the United States Environmental Protection Agency (EPA), and the appropriate Federal Land Managers (FLMs) to take reasonable actions to ensure continued improvement in visibility at Class I areas.

Your recent letter focused on the potential impact of new and modified major sources. Your first request was for the opportunity to comment on best available control technology determinations for Prevention of Significant Deterioration (PSD) sources that have significant impact on the Wichita Mountains. More precisely, you asked to review applications for sources if modeling predicts a five percent or higher impact on light extinction in a given year. We appreciate your use of a significant impact level to determine which applications you want to review. You are welcome to review these applications and provide your comments as part of our public review and comment period. We will notify the Oklahoma DEQ, along with the relevant FLM, whenever modeling indicates that a proposed source may significantly impact the Wichita Mountains.

Your second request is that Class I impact reviews be required for all proposed PSD sources within 300 kilometers of a Class I area. Unlike your proposed criteria above, this does not take into account the size of the source or meteorology. The TCEQ is urging the EPA to adopt significant impact levels for Class I reviews so that there is a consistent approach across the country to requiring Class I reviews. In the meantime, the TCEQ is committed to working with the FLMs on mutually acceptable criteria for determining when a proposed PSD source should conduct a Class I review. We will inform you of the outcome of those discussions.

Follow-up on Texas' Consultation Conference Calls on Big Bend and Guadalupe Mountains National Parks in Texas

September 24, 2007

Areas and Pollutants Important in Contributing to Haze in the Two Texas Class I Areas

Figures 1and 2 show the modeled pollutant contributions to Big Bend and Guadalupe Mountains National Parks and the areas to which the modeling attributes the contributions.

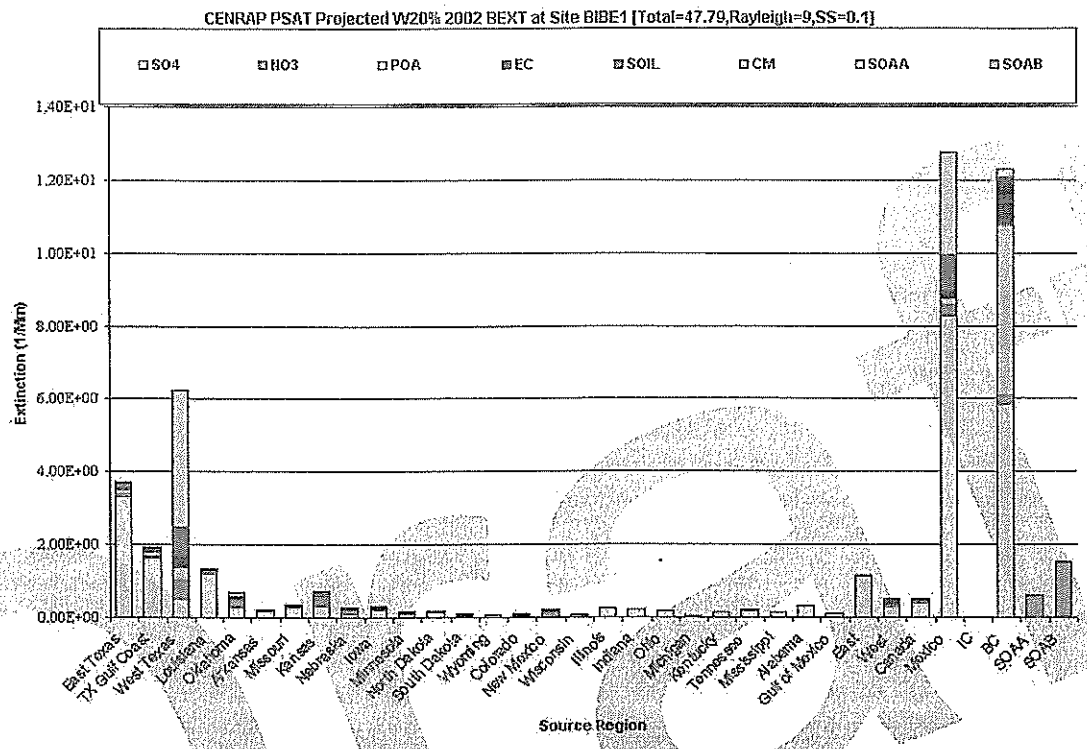


Figure 1: Areas and Pollutants Causing Regional Haze on the Worst 20 Percent of Days at Big Bend in 2002

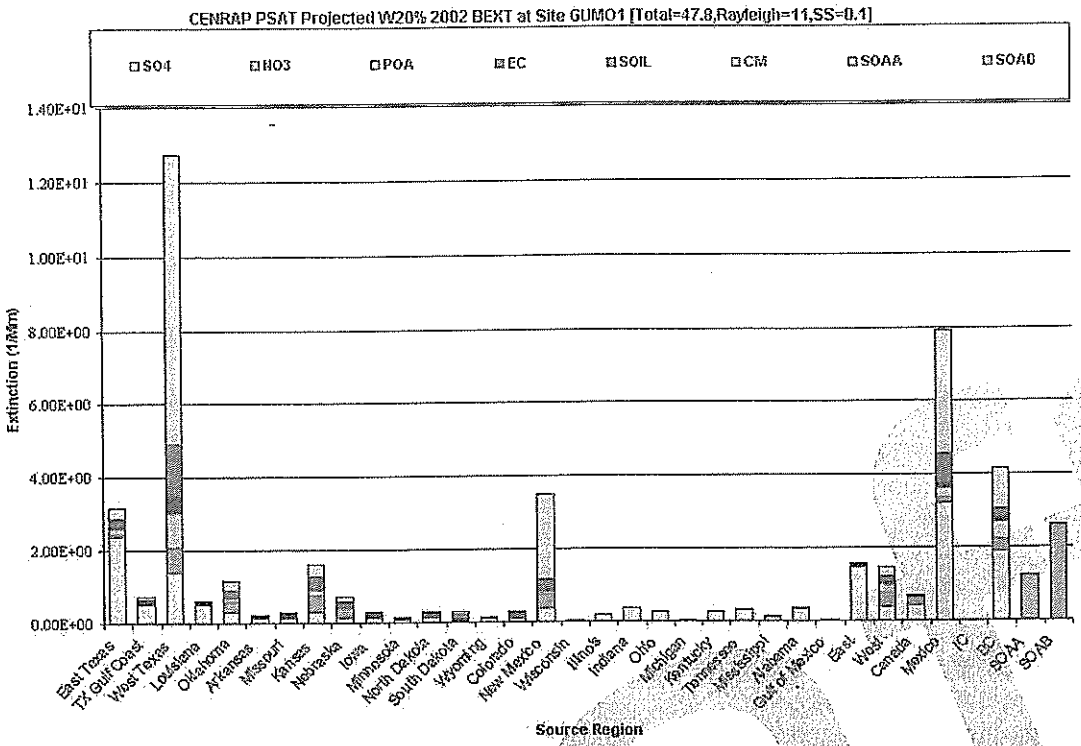


Figure 2: Areas and Pollutants Causing Regional Haze on the Worst 20 Percent of Days at Guadalupe Mountains in 2002

The main anthropogenic emissions that affect visibility Class I areas in Texas and neighboring states are SO_2 and NO_X. There is a much smaller anthropogenic PM impact in Texas from stack, engine exhaust, and fine soil emissions compared to SO_2 and NO_X. Although the contribution of anthropogenic VOC to the formation of secondary organic carbon PM is small, there is a contribution. The impact of coarse mass and fine soil at the two Texas Class I areas comes primarily from natural dust storms and dust blowing from the Chihuahuan Desert, which the modeling does not represent well. Dr. Halliday's paper on *Estimating Natural Conditions Based on the Revised IMPROVE Algorithm* discusses and documents the predominance of these natural impacts (http://www.tceq.state.tx.us/implementation/air/sip/bart/haze_sip.html). The modeled impact of wild fire and prescribed burning emissions on primary organic carbon is uncertain because of questions about the accuracy of fire emission inventories, but the modeled results projected to measured organic carbon concentrations shows that fires are the main source of the impacts that the modeling calculates.

Figure 1 shows the modeled impact of different areas and pollutants to visibility impairment at Big Bend on the worst 20 percent of monitored days in 2002. The projected impact shown in the figure uses the modeling results scaled to measured pollutant concentrations according to the EPA's modeling guidelines. The primary organic carbon captured in the modeling is largely from fire. The term "primary" refers to a pollutant emitted directly to the atmosphere. The term "secondary" refers to a pollutant formed in the atmosphere by reaction, condensation, or both. The modeling indicates that primary organic carbon at Big Bend comes overwhelmingly from boundary

conditions, which include the areas of the Yucatan and Central America with extensive agricultural burning and sometimes wildfire emissions each April and May.

Baseline and Natural Visibility Conditions, Uniform Rates of Progress and Reasonable Progress Goals for Texas' Class I Areas

Figures 3 and 4 below show the uniform rate of progress (URP or glide path) lines for each park calculated using the best available site-specific estimates the TCEQ had for 2064 natural conditions. To select the worst 20 percent days for 2064, the TCEQ presumed that the anthropogenic impacts are zero by 2064. This left a set of worst 20 percent days that have higher dust impacts than the base period worst 20 percent days. For the Big Bend and Guadalupe Mountains conference calls, the TCEQ distributed a technical analysis that documents the large impact of natural blowing dust conditions in West Texas. This technical paper is at the TCEQ website: http://www.tceq.state.tx.us/implementation/air/sip/bart/haze_sip.html

Because of these considerations and because of the sparse population and human activity in areas near these parks, the TCEQ is using the approximation that coarse mass and fine soil at the two West Texas Class I areas are natural for the worst 20 percent days. For the other $PM_{2.5}$ components the TCEQ used the Natural Conditions II estimates, although there is substantial uncertainty about the natural portion of organic carbon. The EPA's *Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Program* (EPA-454/B-03-005), Section 3, "Refined Estimation Approaches Regional and Site-Specific Application" allows site-specific estimates of natural conditions. The TCEQ plans to revisit the natural condition estimates for the five-year review and the 2018 regional haze state implementation plan (SIP) revision.

Table 1 shows the site-specific estimates the TCEQ has developed for natural conditions at the two Texas Class I areas. The graphs in Figure 5 and Figure 6 compare the glide paths using Natural Conditions II natural conditions estimates with the TCEQ site specific estimates.

Table 1: Site-Specific Estimates of Natural Conditions at the Two Texas Class I Areas

Estimate of Natural Visibility Conditions		
Class I Area	**Haze Index (deciviews)**	
	Most Impaired	**Least Impaired**
Big Bend	10.1	2.3
Guadalupe Mountains	12.3	2.1

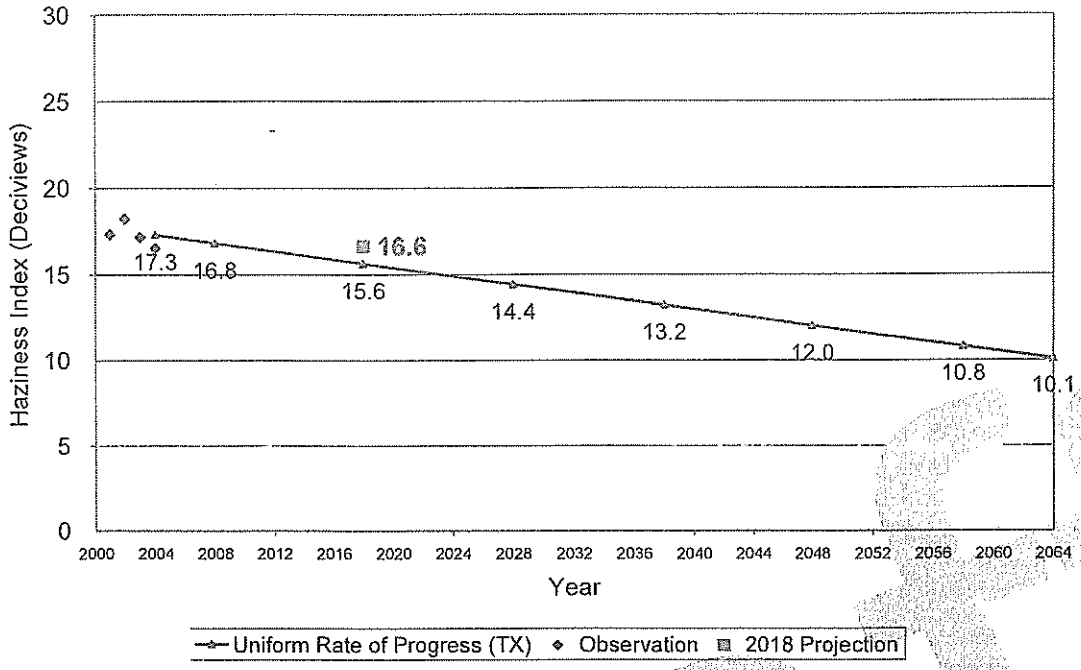


Figure 3: Glide Path for Big Bend Worst 20% Days

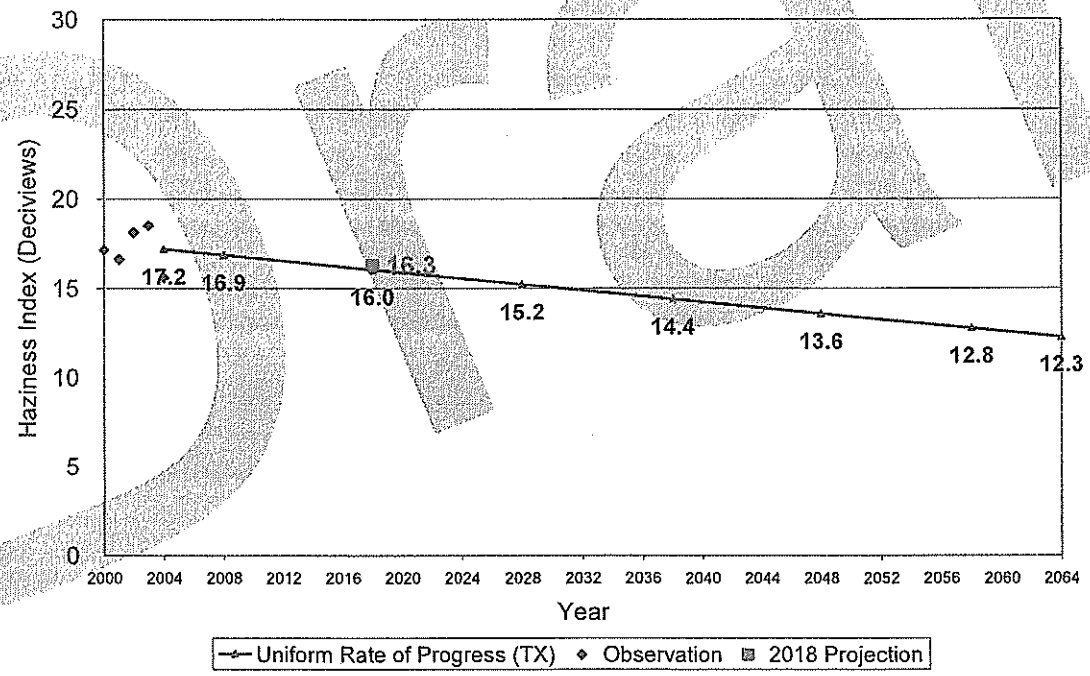


Figure 4: Glide Path for Guadalupe Mountains Worst 20% Days

The 2018 reasonable progress goals (RPGs) use 2018 CENRAP modeling projections for all components except coarse mass and fine soil. For these two components, the TCEQ projected average 20 percent worst day conditions as unchanged in 2018 from the average for the base period. The RPGs include all on-the-books emission limitations the TCEQ had adopted at the time the states submitted their emission inventories for

CENRAP modeling. The CENRAP emission inventory for this modeling has been updated to include the available EPA's estimates of the refinery SO_2 reductions that will result from the EPA refinery consent decrees.

The CAIR estimates used to develop the RPGs are from the CENRAP modeling, which included issued permits in addition to the Integrated Planning Model 2.1.9 estimates. The CENRAP IPM plus permitted SO_2 emissions estimate for electric generating units in Texas for 2018 is approximately 350,000 tons per year. The CAIR 2015 cap is approximately 225,000 tons per year for Texas.

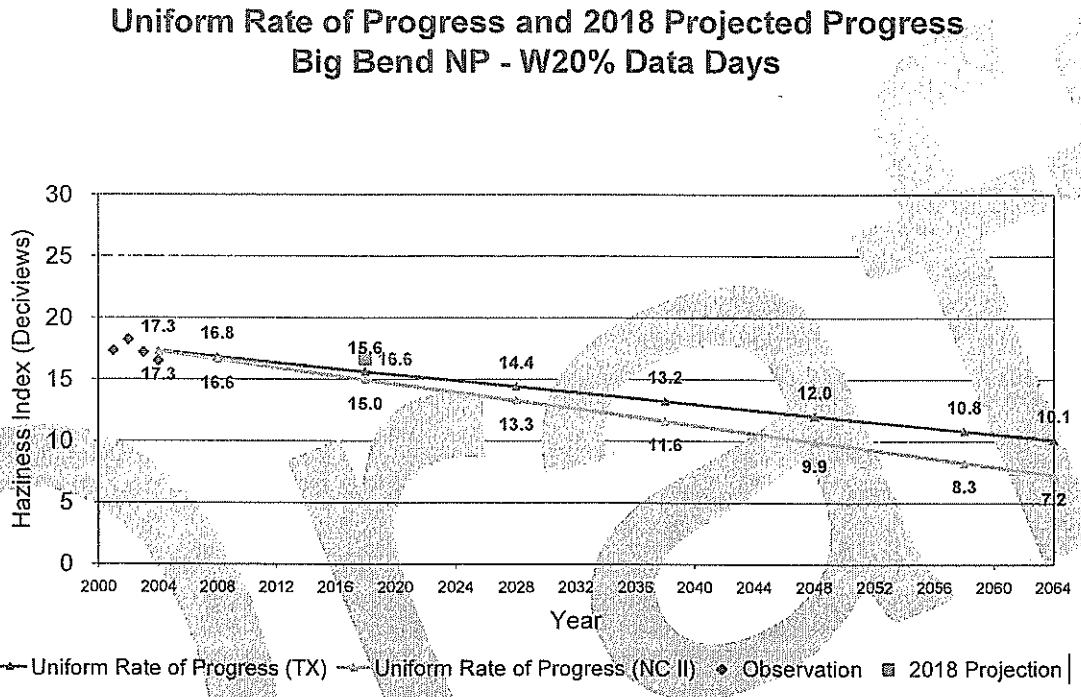


Figure 5: Glide Paths for Big Bend National Park Calculated Using Site-Specific 2064 Natural Conditions Estimates and Natural Conditions II Committee Estimates

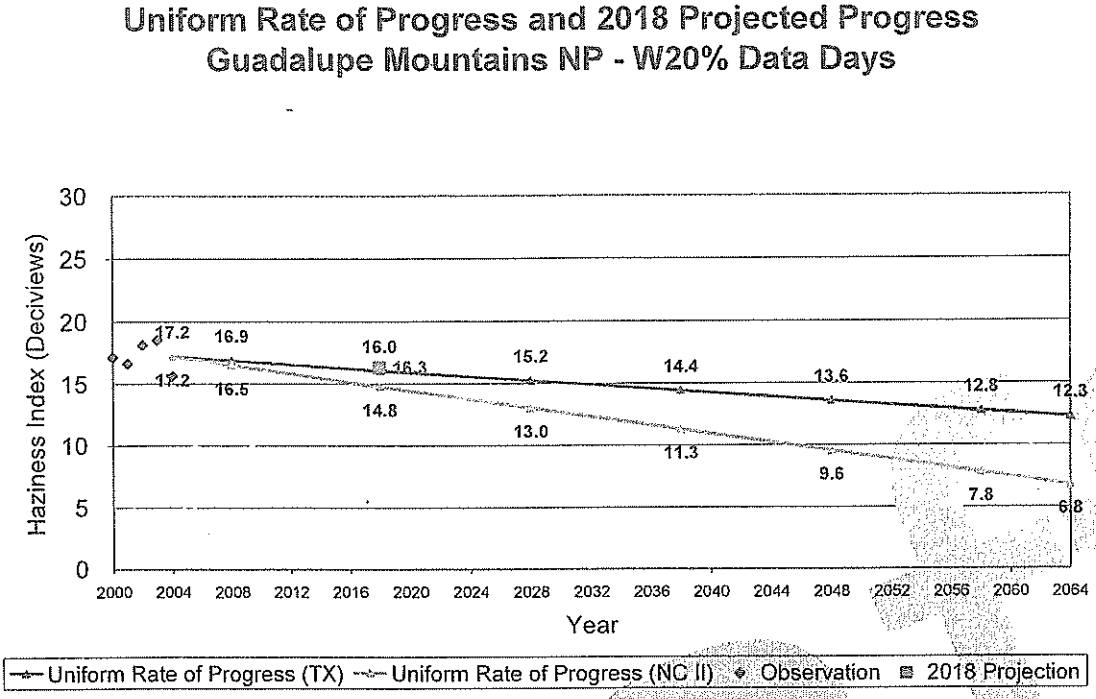


Figure 6: Glide Paths for Big Bend National Park Calculated Using Site-Specific 2064 Natural Conditions Estimates and Natural Conditions II Committee Estimates

Table 2: Reasonable Progress Goals for Class I Areas (Best 20 Percent Days)

Class I Area	Baseline Visibility (dv)	Projected 2018 Visibility (RPG) (dv)	Improvement by 2018 at RPG (dv)
Big Bend	5.8	5.6	0.2
Guadalupe Mountains	5.9	5.7	0.2

These RPGs reflect visibility improvements from emissions reductions associated with the FCAA, the Texas Clean Air Act, Texas' ozone SIP revisions and rules, and agreements between EPA and oil refineries for SO_2 emission reductions. These RPGs do not include additional emissions reductions from implementing the Texas BART rule and new rules adopted in the recent May 23, 2007, Dallas-Fort Worth eight-hour ozone attainment demonstration SIP revision. Adoption of all of these emissions reductions requirements occurred after the time cutoff for the modeling to calculate the RPGs for the worst 20 percent days and the best 20 percent days.

Setting the Reasonable Progress Goals for the Texas Class I Areas

Some of the TCEQ's emissions reductions requirements have gone beyond FCAA requirements and continue to go beyond some federal requirements. Texas requirements that go beyond federal requirements include:

- opacity limits and sulfur compound emission limits on grandfathered facilities and best available control technology (BACT) requirements for new and modified sources that typically go beyond EPA new source performance standards (NSPS) and cover more sources than the federal requirements.

Texas' requirements adopted since EPA issued the July 1, 1999, Regional Haze Rule include:

- extensive NO_X emission limits on existing and new sources including major, minor, and area sources including some on a statewide basis;
- financial incentive programs to accelerate the implementation of new, cleaner diesel engine technologies in on-road and non-road applications (TERP);
- CAIR for both SO_2 and NO_X (CAIR requirements in Texas extend over 480 miles west of the CAIR requirements in other states. Texas is the only CAIR state not bordering or east of the Mississippi River.),
- financial incentives for scrappage of older gasoline-powered on-road vehicles.

The TCEQ considered additional controls beyond those already adopted. Given the cost and insignificant effect of additional controls, uncertainty of CAIR impacts, and significant international sources of visibility impairment (all discussed below), the TCEQ considers it unreasonable to require additional controls at this time.

Reductions Required to Meet the Uniform Rate of Progress

The TCEQ's analysis of point source reductions, extrapolated to estimate the amount of reductions that would be required to meet the URP for the Texas Class I areas produces the results (Table 3).

Table 3: Emissions Reductions Required to Meet Uniform Rate of Progress

Class I Area	Additional Improvement Needed to Meet URP (dv)	Approximate Additional Pollutant Reductions SO_2 and NO_X (tpy)	Estimated Cost of Additional Reductions
Big Bend	1.0	3,700,000	$6,500,000,000
Guadalupe Mountains	0.3	1,100,000	$1,900,000,000

Table 3 assumes that all of the reductions needed to meet the URP would come from Texas. These additional reductions would require significant overcontrol in order to compensate for the impacts of international pollution. The preamble to the July 1, 1999, issuance of the Regional Haze Rule clearly says that states are not required to carry out compensatory overcontrol to make up for the lack of progress in reducing the impacts of international transport.

To meet the goal of natural visibility at Big Bend, a better understanding of how pollutants are brought into the area is needed so that the correct sources can be addressed. (This also reinforces the point that progress at the Texas Class I areas, especially at Big Bend, is dependent upon reducing emissions from Mexico and Central America). In the regional haze SIP, the TCEQ plans to ask EPA for federal efforts to reduce the international transport impacts on regional haze coming into the United States across Texas' southern border.

ADEQ

ARKANSAS
Department of Environmental Quality

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August 17, 2007

Mr. Eddie Terrill, Director
Oklahoma Department of Environmental Quality
Air Quality Division
P.O. Box 1677
Oklahoma City, OK 73101-1677

Re: Oklahoma's Wichita Mountains Wilderness Area Regional Haze Consultation

Dear Mr. Terrill:

Thank you for inviting the Arkansas Department of Environmental Quality (ADEQ), Air Division to participate in the above-referenced planning process. As you are aware, it is beneficial for both agencies to preserve an open line of communication.

My staff has reviewed the document that the Air Division of the Oklahoma Department of Environmental Quality (ODEQ) prepared entitled Oklahoma's Wichita Mountains Wilderness Area Regional Haze Planning. While I appreciate your situation of not being able to demonstrate that progress in visibility improvements for the Wichita Mountains Wilderness Area will not meet the glidepath representing a return to natural conditions by 2064, ADEQ cannot concur with the ODEQ assertion that sources in Arkansas contribute significantly to an inability to achieve reasonable progress. According to my staff, the 1.5 inverse megameters (Mm^{-1}) that was used to determine the extent of other-state contributions to visibility impairment at Wichita Mountains Wilderness Area (WIMO) equates to a 0.2 deciview (dv) contribution to the projected 2018 20% worst days at WIMO. Since dv is expressed in increments of one and 1 dv is defined as the minimum degree of light extinction that is discernible to the human eye, an impact of a fraction of a dv is indiscernible and cannot be measured.

Assuming that the contribution of the entire State of Arkansas is approximately 0.2 dv, it is apparent that a single source's potential contribution would be much lower. ADEQ cannot reasonably mandate control of a source or source category that your Department asserts has potential contributions to visibility impairment at WIMO when it is not physically possible to measure the benefit that might be realized therefrom.

In your consultation kick-off presentations, you asked about our intentions regarding future control of four specific sources. Of these, three are subject to BART and appropriate limits have been established in our draft SIP revision. ADEQ has previously provided your staff with an estimate of the individual source emission reductions expected to be achieved by implementation of BART at these, and all other, affected facilities. The fourth facility, Future Fuel Chemical Company in Batesville Arkansas (formerly Arkansas Eastman) is not subject to BART. It is located approximately 665 kilometers (km) from WIMO.

ADEQ determined that, given the limitations of the CALPUFF model used to assess facility contributions, the single-source impact that Future Fuels might have on WIMO could not be reliably determined or demonstrated. These findings are based on the unproven performance of the CALPUFF modeling system at a range exceeding two times the recommended maximum reliable range (300 km) specified in EPA modeling guidance documents and reports.

I hope your regulatory development process is proceeding well. ADEQ intends to submit a final SIP revision to EPA shortly. ADEQ will participate in consultations with Oklahoma and other States on an on-going basis. Let me know if you require additional information at this time.

Sincerely,

Mike Bates
Air Division Chief

cc: Tony Davis, Technical Assistance Manager
Mark McCorkle, Environmental Program Manager
Mary Pettyjohn, Senior Epidemiologist
Jeremy Spann, Air Compliance Monitor

STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

February 25, 2008

Catharine Fitzsimmons, Chief
Air Quality Bureau
Iowa Department of Natural Resources
7900 Hickman, Suite I
Urbandale, IA 50322

Dear Ms. Fitzsimmons: Catharine

Thank you for participating in Oklahoma's Wichita Mountains Regional Haze Consultations conducted pursuant to the requirements in 40 CFR 51.308(d)(3)(i). The Oklahoma Department of Environmental Quality (DEQ) invited states, that were projected in 2018 to contribute greater than 1 inverse megameter (Mm^{-1}) of light extinction in the Wichita Mountains Wilderness Area (WIMO), to participate in Oklahoma's consultations. Iowa sources were projected to contribute approximately 1.5 inverse Mm^{-1}. After evaluating 2018 modeling projections for the 20% worst days, the DEQ determined that Iowa's anthropogenic sources are not reasonably anticipated to contribute to visibility impairment in the WIMO. Therefore, DEQ is not requesting that Iowa consider any additional emission reductions from sources in Iowa.

I hope your Regional Haze SIP development process is proceeding well. Please let me know if you require additional information.

Sincerely,

Eddie Terrill, Director
Air Quality Division
Oklahoma Department of Environmental Quality

c: Matt Paque, DEQ Legal

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DEPARTMENT OF NATURAL RESOURCES

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SEP 18 2007

Ms. Cheryl Bradley
Environmental Programs Manager
Oklahoma Department of Environmental Quality
707 North Robinson
Oklahoma City, OK 73102

Dear Ms. Bradley:

We appreciate the opportunity to provide comments on the Oklahoma Division of Environmental Quality (DEQ) Regional Haze State Implementation Plan (SIP). We are pleased to work with Oklahoma to find the best solution for achieving the reasonable progress goals for the Wichita Mountains Class I Area (WIMO). The consultation calls and our review of the Consultation Plan elicit several points of interest.

As presented on the calls, the U.S. Environmental Protection Agency (EPA) has determined that the default natural background condition of WIMO is 7.58 deciviews. Oklahoma DEQ pointed out that the conventions which determine those natural conditions as a western area may not be appropriate, given that Area of Influence (AOI) analysis shows many eastern and northern states have sources that impact the area. During the calls Oklahoma made it clear that the 7.58 deciview level was not appropriate, but did not offer an alternative method to estimate natural background conditions. Missouri supports amending the natural background condition for WIMO if it can be technically supported. We are interested in reading and perhaps commenting on the arguments that Oklahoma DEQ presents to EPA on this issue.

The visibility conditions predicted in the 2018 modeling for WIMO falls significantly short of the Uniform Rate of Progress Glide path. This contrasts to the Class I areas at Hercules Glades, Caney Creek, and Upper Buffalo that have been modeled to meet goals with controls planned under Clean Air Interstate Rule (CAIR). A partial answer to the shortfall may be resolved in amending the natural background goal. The distance between WIMO and western Missouri and Arkansas Class I Areas is approximately 200-250 miles. Because of this distance, it is counter-intuitive to assume that emission controls on Missouri sources would be significant enough to achieve targets in the Missouri and Arkansas Class I Areas, but would be insufficient for WIMO.

The Oklahoma DEQ Consultation Plan explains the use of both Particulate Matter Source Apportionment Technology (PSAT) to apportion modeling outputs and Positive Matrix Factorization (PMF) for culpability analysis of monitoring data. The determination of whether a

an overall level above two inverse megameters be established for WIMO, which would include all of the most important contributing areas.

Missouri is in the process of preparing a plan to address the St. Louis Particulate Matter less than 2.5 microns ($PM_{2.5}$) nonattainment area. In addition to the development of an attainment strategy and demonstration, the federal $PM_{2.5}$ implementation rule requires states to implement all Reasonably Available Control Technology (RACT) and Reasonably Achievable Control Measures for $PM_{2.5}$ precursors. Because of previous ozone SIP efforts, RACT controls for NO_x sources have already been implemented in St. Louis. However, there are a number of relatively large SO_2 sources that are currently under consideration for RACT controls. These include large boilers, large stationary internal combustion engines, two glass processes, a biosolids incinerator, a cement kiln, and a lead smelter (one of the sources listed in the control spreadsheet). At this point it would be difficult to predict the emission reductions that will be associated with these efforts, but Missouri expects to implement reasonable controls on these SO_2 sources. Missouri's CAIR sources listed on the control spreadsheet have not yet shared their planning assumptions regarding which facilities expect to install controls and which facilities plan to purchase allowance.

As a final comment, the graphic display of sulfur dioxide AOI on page 10 of the Oklahoma DEQ plan provides a somewhat confusing picture. Bar heights are not consistent with numberings, and this gives an overall impression that Missouri impacts to haze are of a similar level to East Texas, which is not the case as is shown in the graphic on page 14.

Again, we appreciate the opportunity to comment. If you have questions or concerns, please contact Calvin Ku with the department's Air Pollution Control Program, P.O. Box 176 Jefferson City, MO 65102 or by phone at (573) 751-8406. Thank you.

Sincerely

AIR POLLUTION CONTROL PROGRAM

James L. Kavanaugh
Director

JLK:cktb

c: Mr. Bruce Polkowsky, National Park Service
Mr. Tim Allen, U.S. Fish & Wildlife Service
Mr. Charles Sams, U.S. Department of Agriculture Forest Service
Mr. Joshua Tapp, U.S. Environmental Protection Agency, Region VII Office

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STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

August 3, 2007

Glenn Shankle, Executive Director
Texas Commission on Environmental Quality
MC 109
P.O. Box 13087
Austin, TX 78711-3087

Dear Mr. Shankle:

The Oklahoma Department of Environmental Quality ("DEQ") has actively contributed alongside TCEQ to the regional planning efforts conducted by CENRAP since its inception. Our common goal through this endeavor has been to support the CENRAP States in the protection and improvement of visibility in our Class I areas. We therefore appreciate having had the opportunity to participate in the TCEQ consultation process in support of your State implementation of the Regional Haze Rule.

DEQ has scheduled State to State consultation specific to the Oklahoma Class I area within the Wichita Mountain Wildlife Refuge to begin August 16, 2007. The primary purpose of this letter is to formalize comments submitted through the TCEQ consultation process in regard to Texas impacts on the Wichita Mountains. These comments are submitted in advance of the planned Oklahoma consultation process and in consideration of TCEQ SIP timelines.

Despite significant planned reductions in SO_2 and NO_X emissions from Oklahoma and Texas, the Wichita Mountains Class I area is not projected to meet the glide path progress goal as defined by default EPA natural background assumptions. More work will be necessary in the coming years to continue to refine natural background assumptions; however, from the work completed cooperatively through the CENRAP process it is clear that the Wichita Mountains suffer from significant anthropogenic impacts from Texas.

The New Source Review section of the federal visibility regulations of 40 CFR Subpart P state: "In conducting [PSD permitting] reviews the State must ensure that the source's emissions will be consistent with making reasonable progress toward the national visibility goal referred to in §51.300(a)." (40 CFR 51.307(c).) To that end, DEQ respectfully requests that TCEQ require new and modified PSD sources to conduct analyses for their impact on visibility in the Wichita Mountains Wildlife Refuge Class I area. We request that these analyses follow Federal Land Manager guidance as appropriate. If these analyses indicate that the 98th percentile values for change in light

extinction are higher than 5% for any year, then the DEQ would like an opportunity to review and comment on BACT determinations for the proposed projects.

DEQ further requests that the impact evaluations not be restricted to new or modified sources within 100km of the Class I area, but instead extend to within 300 km of the Class I area in deference to Federal Land Manager guidance.

In consideration of this request we would remind you that the Clean Air Act at 42 U.S.C. § 7426 requires that each major proposed new or modified source provide a notice to all nearby States the air pollution levels of which may be affected. Further, under 30 Texas Administrative Code §116.134 and §39.605 applicants should provide notice to any air pollution control agency of any nearby state in which air quality may be adversely affected by the emissions from the new or modified facility. Several provisions of the Clean Air Act, including sections 110 and 126, address the transport of pollutants across state lines. 42 U.S.C. §§ 7410, 7426(b). Section 110(a)(2)(D) of the Clean Air Act, requires each state prohibit emissions within the state that contribute significantly to another state's nonattainment of, or interfere with another state's maintenance of a NAAQS. Furthermore, States are prohibited from interfering "with measures required to be included in the applicable implementation plan for any other State ... to prevent significant deterioration of air quality or to protect visibility." See also 40 C.F.R. §52.2270 and 30 Texas Administrative Code §116.161.

DEQ respectfully requests that these comments be fully considered by TCEQ. DEQ believes it is important that Oklahoma and Texas continue to work cooperatively to ensure the permitting process is carried out in an appropriate and consistent manner and that we continue to make reasonable progress toward visibility goals for the Wichita Mountains Class I area. You may contact Eddie Terrill, Air Quality Division Director with any questions. Mr. Terrill's phone number and e-mail address are (405) 702-4154 and Eddie.Terrill@deq.state.ok.us.

Sincerely,

Steven Thompson
Executive Director

cc: Greg Nudd, TCEQ
Eddie Terrill, ODEQ