STATE OF MISSISSIPPI
OFFICE OF THE GOVERNOR

RONNIE MUSGROVE
GOVERNOR

July 1, 2003

J. I. Palmer, Jr.
Regional Administrator
U.S. Environmental Protection Agency
Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303

Dear Mr. Palmer:

In accordance with the Federal Clean Air Act, I am hereby providing my recommendations for designations with regard to attainment or non-attainment of EPA's new 8-hour ambient air quality standard for ozone in the state of Mississippi.

During the most recent three years of data (2000-2002), violations of the standard occurred in only one Mississippi County, DeSoto County. According to the guidance you provided, the Environmental Protection Agency (EPA) will designate the metropolitan statistical area (MSA) in which DeSoto County is located as one non-attainment area, absent a recommendation from the state to the contrary. DeSoto County or a portion of the County is located in the Memphis, TN MSA.

I recommend that DeSoto County be a separate non-attainment area from the Memphis area should air quality trends continue as current data indicates. However, should the 2001-2003 data show ground level ozone in DeSoto County below the standard, then DeSoto County should be designated attainment. I will discuss several reasons for this recommendation and refer you to the enclosed technical analysis by the Mississippi Department of Environmental Quality (MDEQ) for the rest of the technical justification for this request.

As is shown in MDEQ's technical analysis, DeSoto County has a significantly lower population density than Shelby County where Memphis is

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located. DeSoto County has only a fraction of the emissions of Tennessee's Shelby County. DEQ's technical analysis shows that on the days in which 8- hour ozone levels were measured in DeSoto County above the standard of 84 ppb, the air had been transported into DeSoto County from Shelby County and points north.

Further the preliminary results of the collaborative Arkansas-Tennessee-Mississippi Ozone Study (ATMOS) and the resulting ozone model show that previous EPA-mandated emissions reductions will result in DeSoto County regaining attainment of the 8-hour ozone standard by 2007 without additional controls in DeSoto County. The remainder of the MSA, including Memphis, will have to go to much greater lengths to meet the standard. Including DeSoto County in the Memphis non-attainment area will place undue burdens on DeSoto while doing nothing to help Memphis attain the standard.

Emission reductions in DeSoto County will not help Memphis. DEQ's analyses show that if manmade emissions of ozone precursors were totally eliminated in DeSoto County, ozone levels in Shelby County would not be measurably reduced.

The remainder of the counties in Mississippi should be designated attainment based upon ozone air quality data for 2000-2002.

Very truly yours,

Ronnie Musgrove

DeSoto County, Mississippi Boundary Guidance Criteria in Proposing a Separate Nonattainment Area than the Memphis MSA

Mississippi Department of Environmental Quality
Air Division
June 30, 2003

DeSoto County, Mississippi
Boundary Guidance Criteria in Proposing a Separate Nonattainment Area than the Memphis MSA

- **Emissions and Air Quality in Adjacent Areas**

  DeSoto County is generally rural with limited industrial development. The emissions from the county represent a relatively small fraction of the total emissions in the MSA and have negligible contribution to ozone formation in the area.

  The anthropogenic emissions from DeSoto County contribute less than 7.6% of the total Nitrogen Oxides (NO_x) and 7.8% of the total Volatile Organic Compounds (VOC) from the Memphis MSA. Only 5% of the NO_x and 9.6% of the VOC from point sources is from DeSoto County. Shelby County, Tennessee, the most developed county in the MSA, produces ten times more NO_x and VOC than DeSoto County. See Figures 1 and 2.

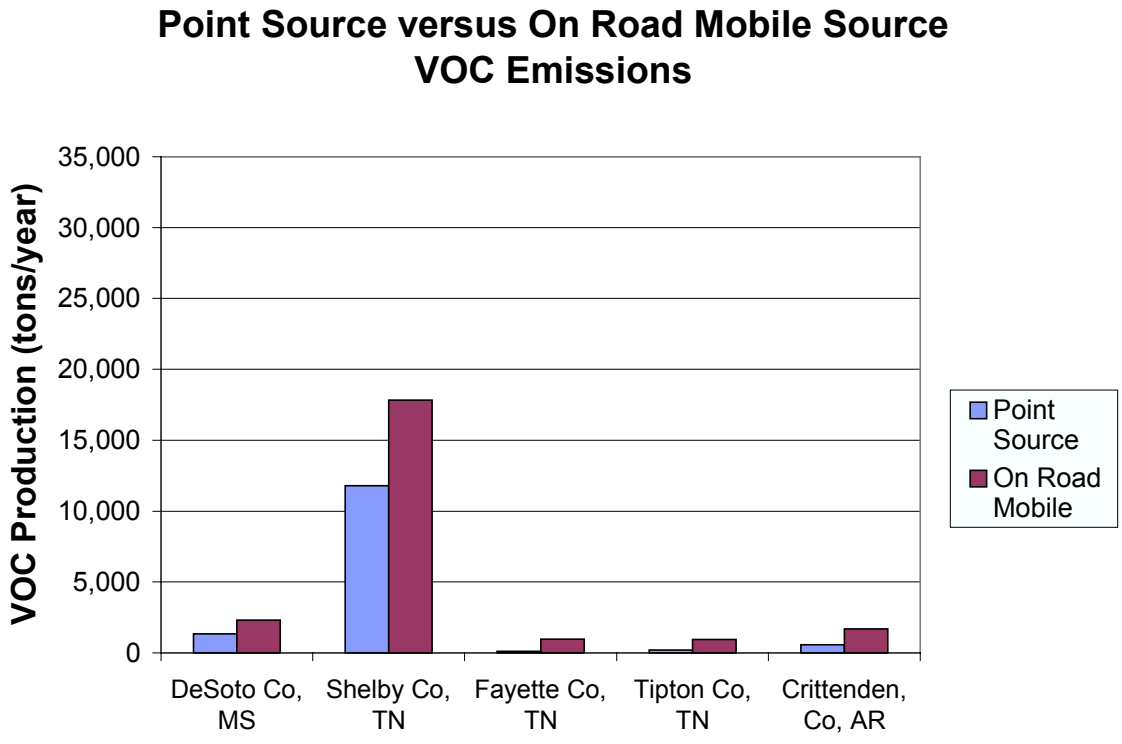

Figure 1

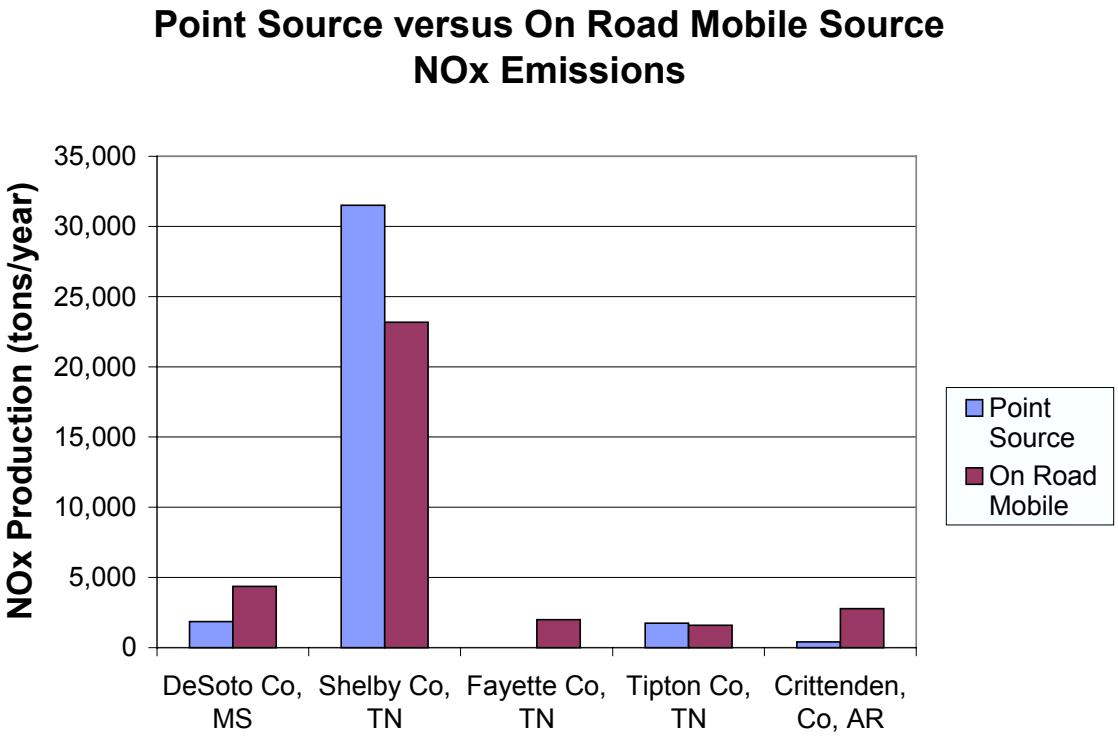

Figure 2

Based on 2000-2002 data, the 8-hour ozone design value for DeSoto County is 86 ppb compared to 90 ppb in Shelby County, Tennessee and 94 ppb in Crittenden County, Arkansas.

- **Population density and degree of urbanization including commercial development (significant difference from surrounding areas)**

  The population density in DeSoto County, Mississippi, is 224 persons per square mile. The population density of Shelby County, Tennessee dominates in the MSA with 1189 persons per square mile. DeSoto County has the lowest degree of urbanization in the MSA with 67.6% of the total county population living in urban areas. See Figure 3.

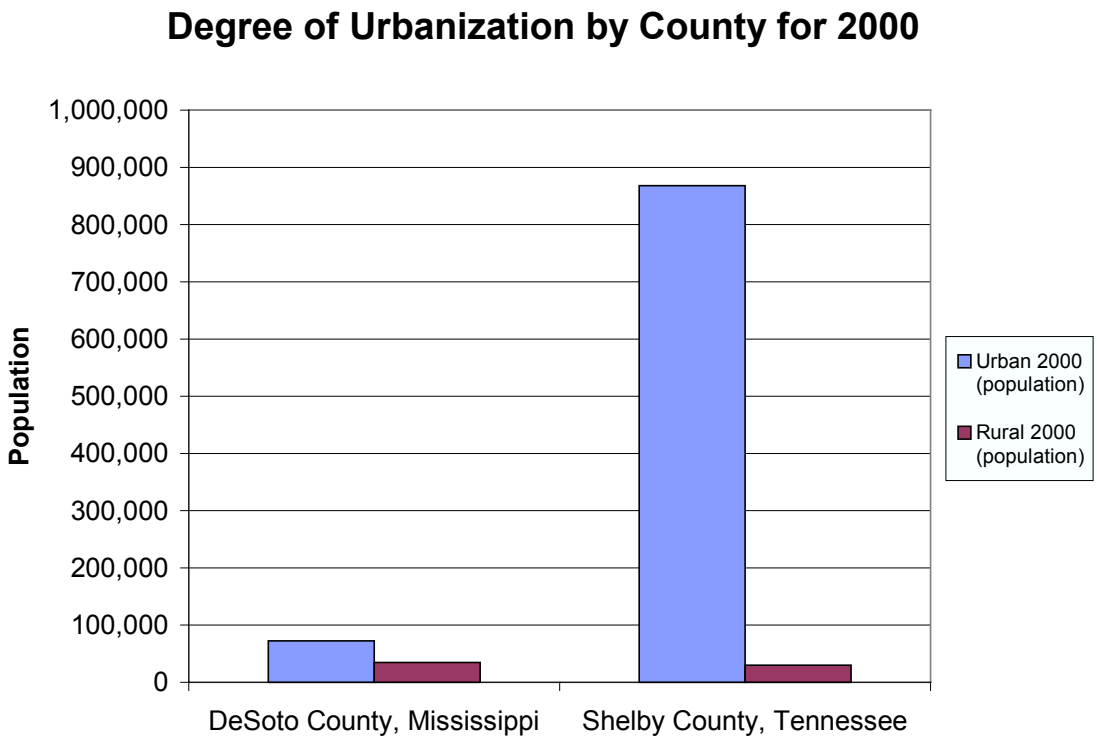

Figure 3

- **Monitoring data representing ozone concentrations in local area and larger areas**

  Below is a graph of the 8-hour ozone design values for each ozone monitor in the Memphis, Tennessee area. The DeSoto County monitor has measured consistently lower design values than the other monitors in the area for the time period of 1993-2002. See Figure 4.

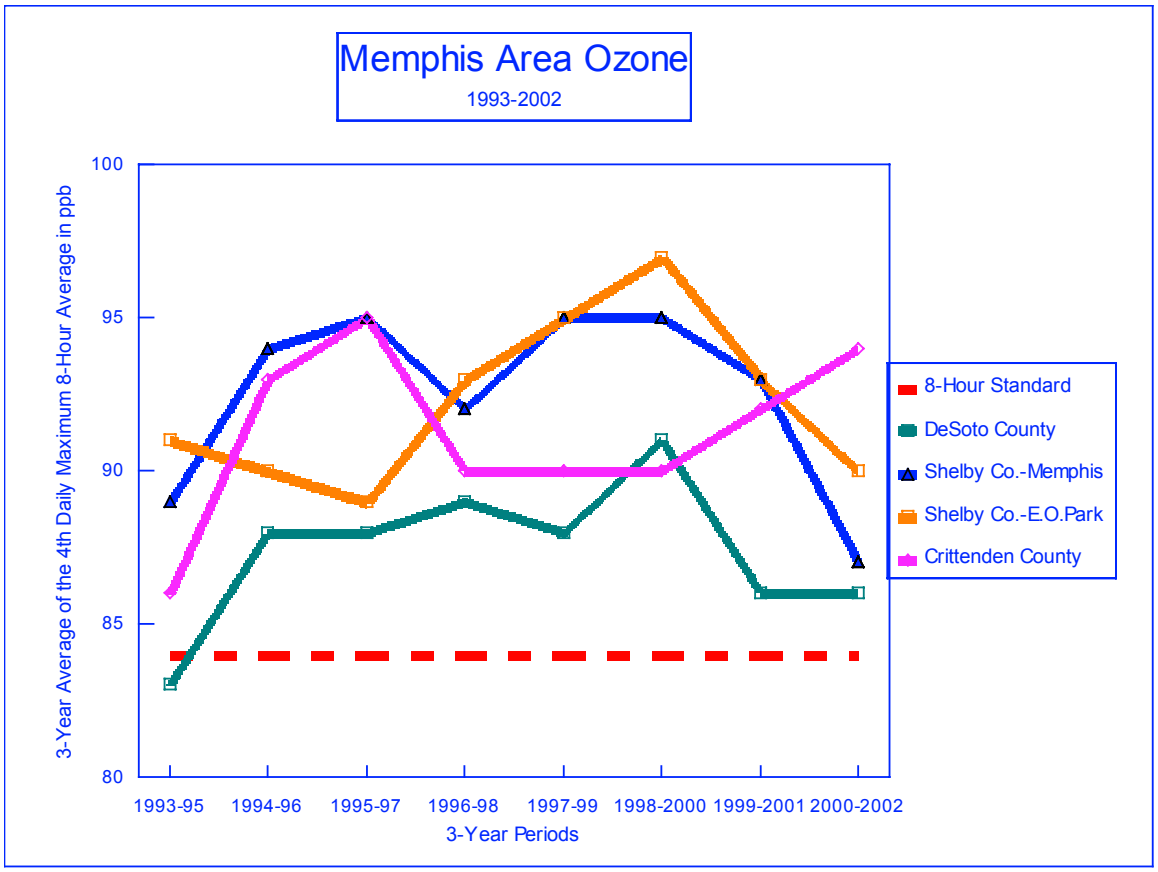

Figure 4

- **Location of emission sources (emission sources and nearby receptors should generally be included in the same nonattainment area)**

  DeSoto County has few major NO_x or VOC sources. There are three major NO_x sources based on potential emissions. The NO_x sources consist of a natural gas pipeline compressor engine station and two turbine electric generating units. There are five major VOC sources based on potential emissions; however, only three have actual emissions greater than 100 tons per year. As stated previously, the sum of all emissions sources is a small portion of the total from the Memphis MSA and significantly less than those from Shelby County, Tennessee. Several sources are near the northern county line. However, the emissions from DeSoto County appear to have minimal impact on monitors outside of the county.

  Figures 5 and 6 showing the estimated design values for Edmond Orgill Park, Tennessee and Crittenden County, Arkansas locations were created using the ATMOS modeling data. The 1999 design value is used because the ATMOS modeling episode was for the period of August 29 – September 9, 1999. The Edmond Orgill Park location was used for Shelby County since it had the highest ozone levels in Shelby County in 1999 and the 2000 – 2002 timeframe. A sensitivity run was made for the 2010 baseline with expected changes resulting from the NOx SIP Call, Tier II vehicle emissions standards, Tier II fuel standards, and other future national standards. A second sensitivity run was made with the above plus a 100% reduction in DeSoto County anthropogenic precursor emissions. Figures 5 and 6 shows that a 100% reduction in anthropogenic emissions for DeSoto County has an insignificant effect on the future estimated design value for Shelby County.

Estimated Design Value (99DV = 95 ppb) for 9-Cell Daily Peak 8-Hr Ozone Concentration (ppb) at the Edmond Orgill Park, TN Monitor

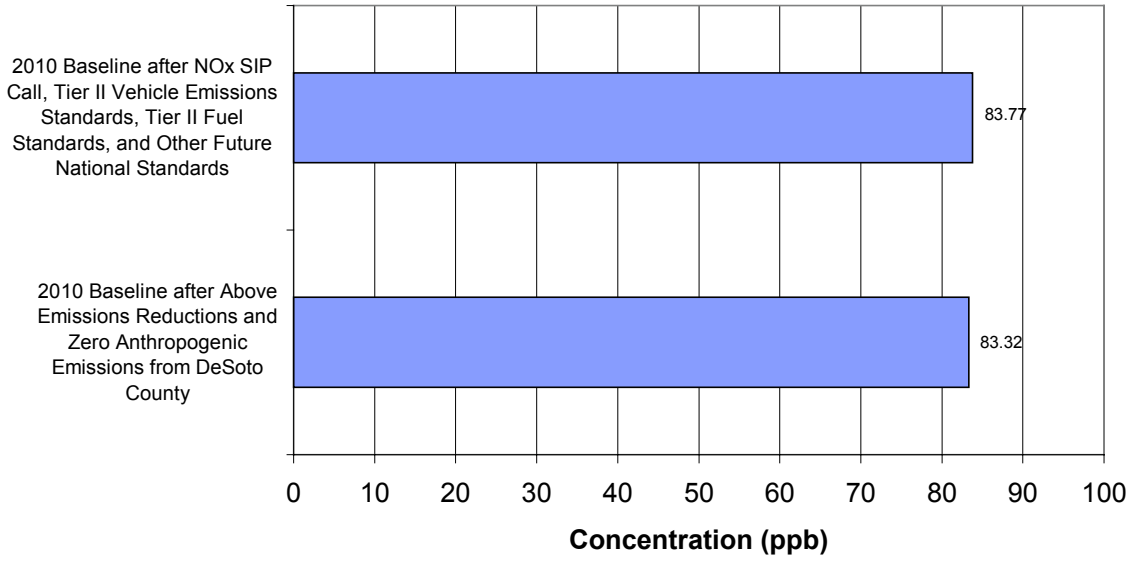

Figure 5

Estimated Design Value (99DV = 90 ppb) for 9-Cell Daily Peak 8-Hr Ozone Concentration (ppb) at the Crittenden County, AR Monitor

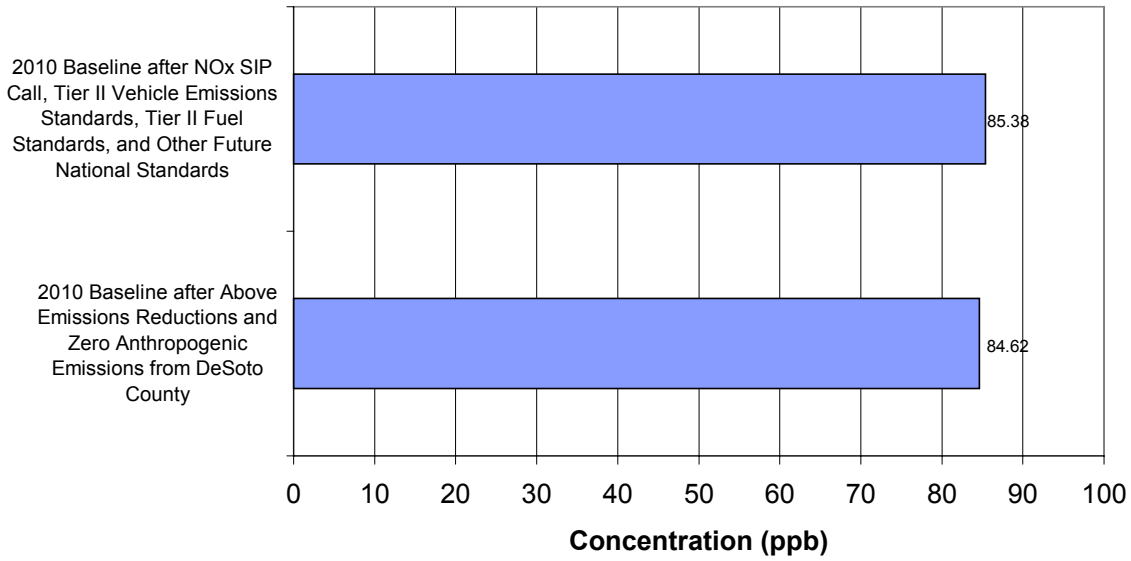

Figure 6

Figure 7 shows a 2007 baseline estimated design value for the DeSoto County monitoring location also using the ATMOS modeling data. This chart demonstrates that just by considering expected changes resulting from the NOx SIP Call, Tier II vehicle emissions standards, Tier II fuel standards, and other future national standards, the 2007 estimated design value falls well under 85 ppb for DeSoto County.

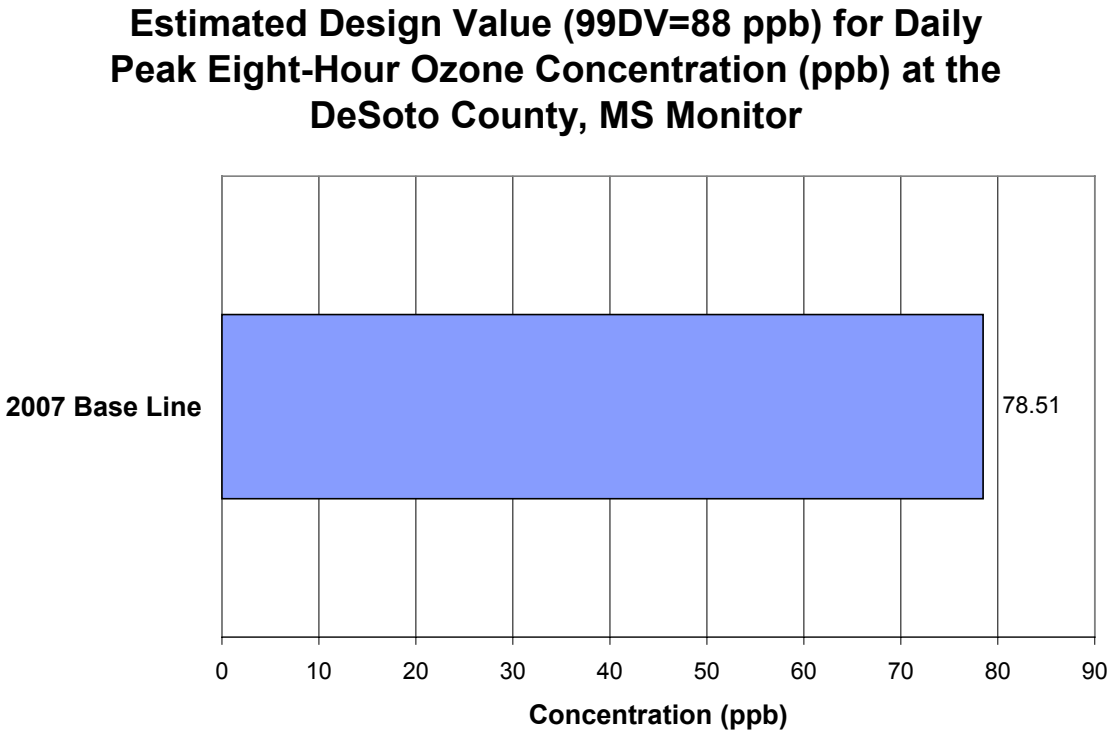

Figure 7

- **Traffic and commuting patterns**

DeSoto County is a predominantly rural county with 70% of the traffic, measured as Vehicle Miles Traveled (VMT), classified by the U.S. Federal Highway Administration as rural. By contrast, only 5% of Shelby County, Tennessee VMT was determined to be rural. See Figure 8.

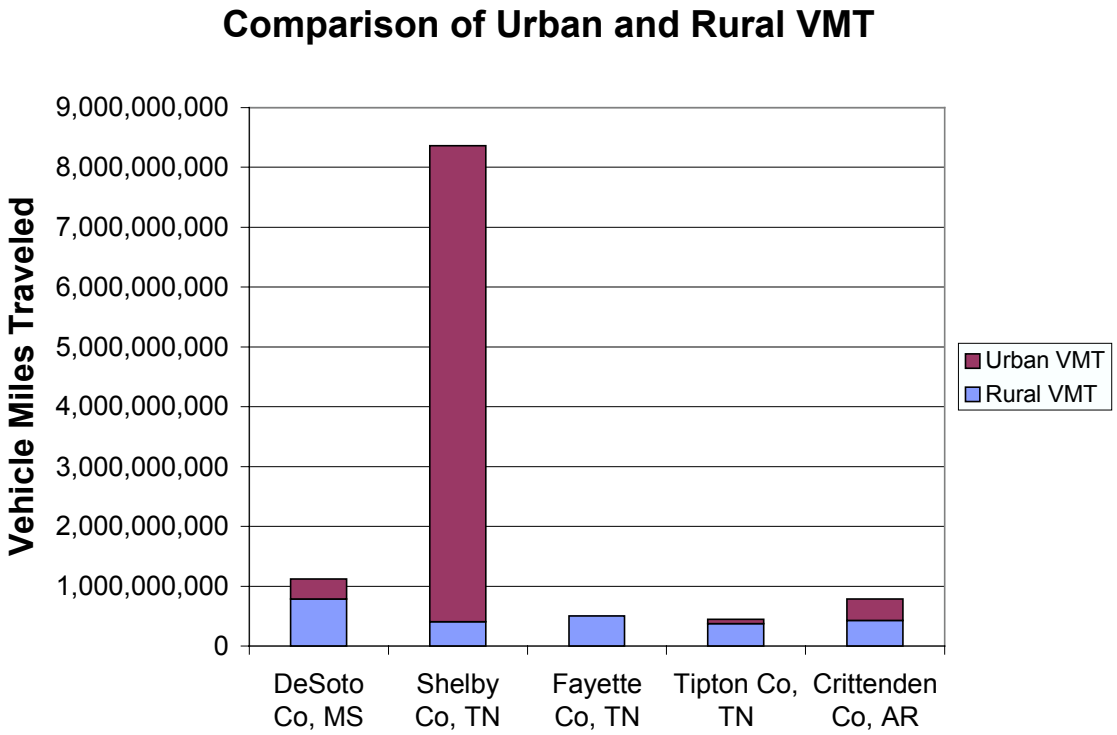

Figure 8

The Memphis MSA had a traffic load of over 11 billion vehicle miles traveled in 1999. The majority of the traffic was attributable to traffic on interstate and principal arterial roads in Shelby County. The contribution of DeSoto County represented less than 10% of the total traffic for the Memphis MSA. Shelby County alone had 7½ times as much traffic as does DeSoto County.

Sixty percent of the DeSoto County traffic occurred on four roads. Interstate 55 connecting Memphis to Jackson, Mississippi; U.S. Highway 78, which is built to interstate standards, connecting Memphis with Birmingham, Alabama; U.S. Highway 61 connecting Memphis with Baton Rouge, Louisiana; and Mississippi State Highway 302, which is an east-west corridor through the county. A significant amount of the highway and interstate traffic could be considered pass-through traffic, i.e., not originating or ending in DeSoto County.

- **Expected growth (including extent, pattern, and rate of growth)**

  The growth rate in DeSoto County is the highest in the MSA at 57.9% from 1990 to 2000. The DeSoto County population, however is less than 10% of the MSA total.

- **Meteorology (weather/transport patterns)**

  Figures 9-27, on pages 11 through 20, are back trajectories shown for the DeSoto County, Mississippi, ozone monitoring location. The days used for DeSoto County were chosen because the first, second, third, and fourth maximums of the eight-hour averages for that year occurred on those end days. The back trajectories were run over a 48-hour period.

  The DeSoto County back trajectories show that on most days, the air parcel had passed through the Shelby County and western Tennessee area before arriving in DeSoto County.

- **Geography/Topography**

  No significant differences are noted between DeSoto County and the rest of the Memphis MSA.

- **Jurisdictional boundaries (e.g., counties, air districts, existing 1-hour nonattainment areas, reservations, etc.)**

  DeSoto County is located in the State of Mississippi. It is considered a part of the Memphis MSA. It is also located in the Memphis Metropolitan Air Quality Control Region (018). DeSoto County is currently in attainment with the 1-hour ozone standard.

- **Level of control of emission sources**

  DeSoto County has three major sources of NOx and five major sources of VOC. Most of these sources either have controls that exceed RACT or will be required to install measures that will meet or exceed RACT due to upcoming standards implementation.

  Of the three major sources of NOx, two are turbine electric generators that have recently been constructed and are subject to PSD for NO_x and have best available control technology (BACT). Equipment changes have recently been made at the compressor engine station that significantly reduced emissions. Of the five major sources of VOC, three will be subject to proposed maximum achievable control technology (MACT) standards with a compliance date of 2007. In addition, all of the sources with actual VOC emissions greater than 100 tons per year currently have thermal oxidizers for control.

  Little will be gained by including this area in the Memphis MSA and imposing RACT on all facilities in DeSoto County.

- **Regional emission reductions (e.g., NO_x SIP call or other enforceable regional strategies)**

  The implementation of the NO_x SIP Call and Tier II emission reduction strategies will result in DeSoto County attaining the 8-hour ozone standard by 2007, as shown in Figure 7 on page 6.

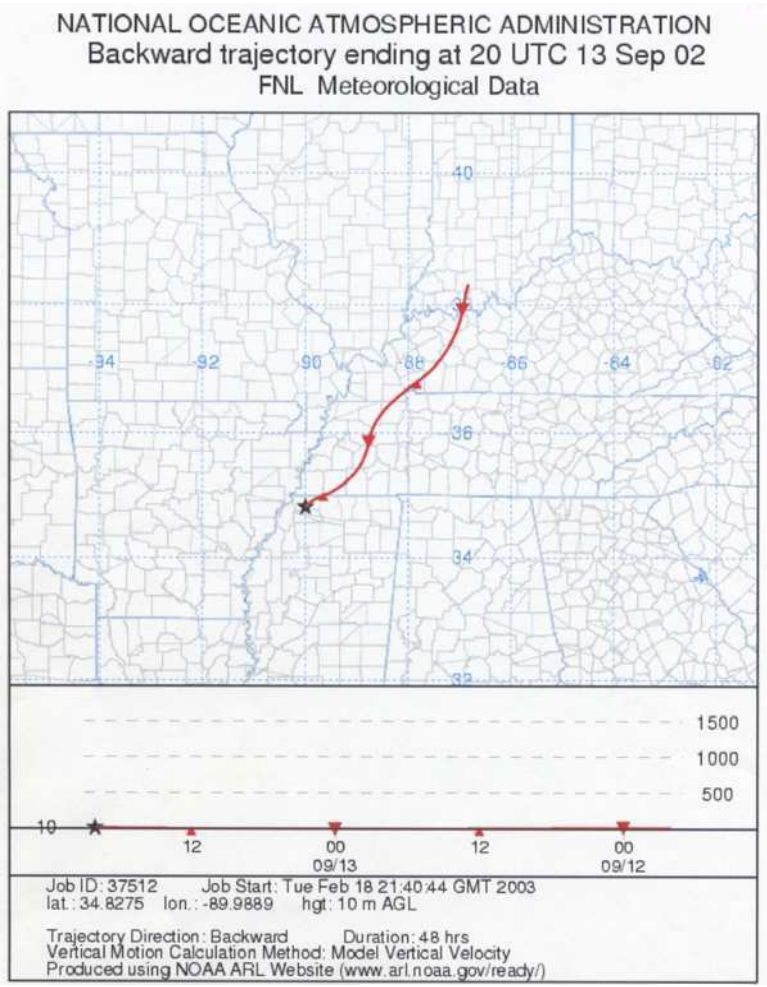

Figure 9
Hernando, MS
1st Max, 2002
103 ppb

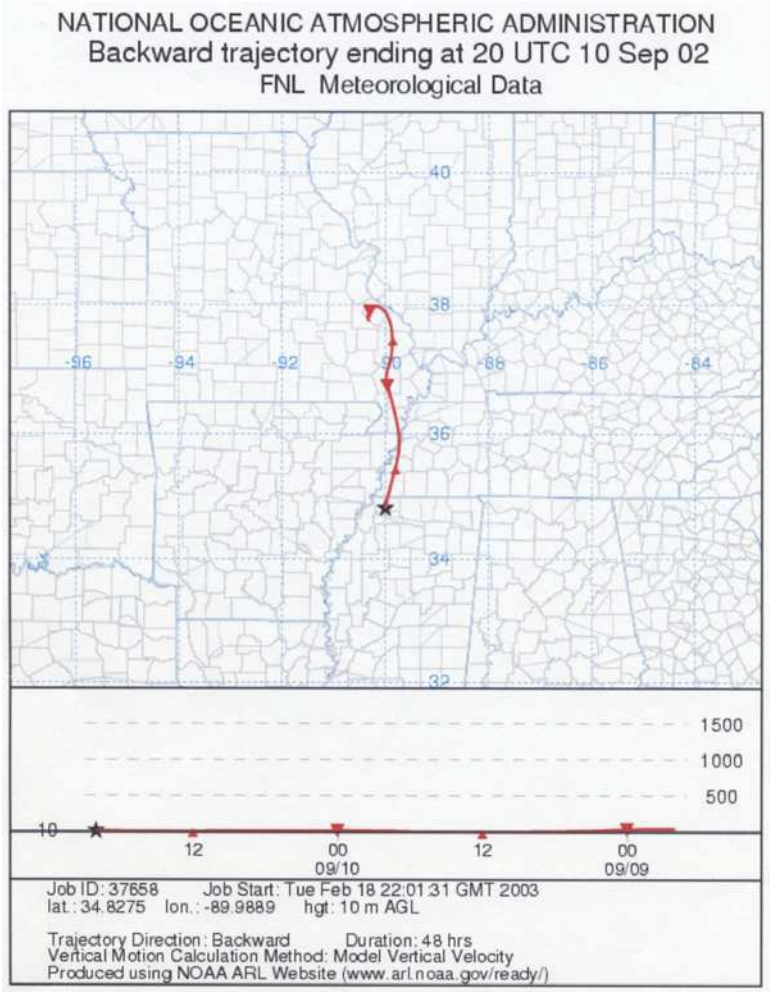

Figure 10
Hernando, MS
2nd Max, 2002
102 ppb

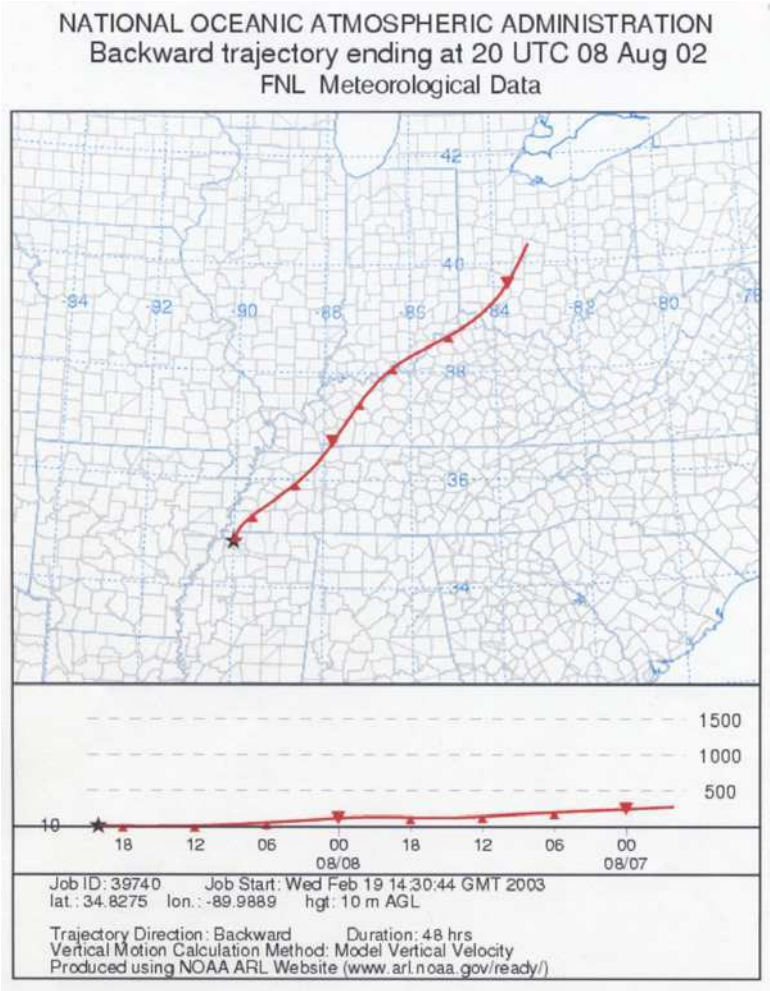

Figure 11
Hernando, MS
3rd Max, 2002
95 ppb

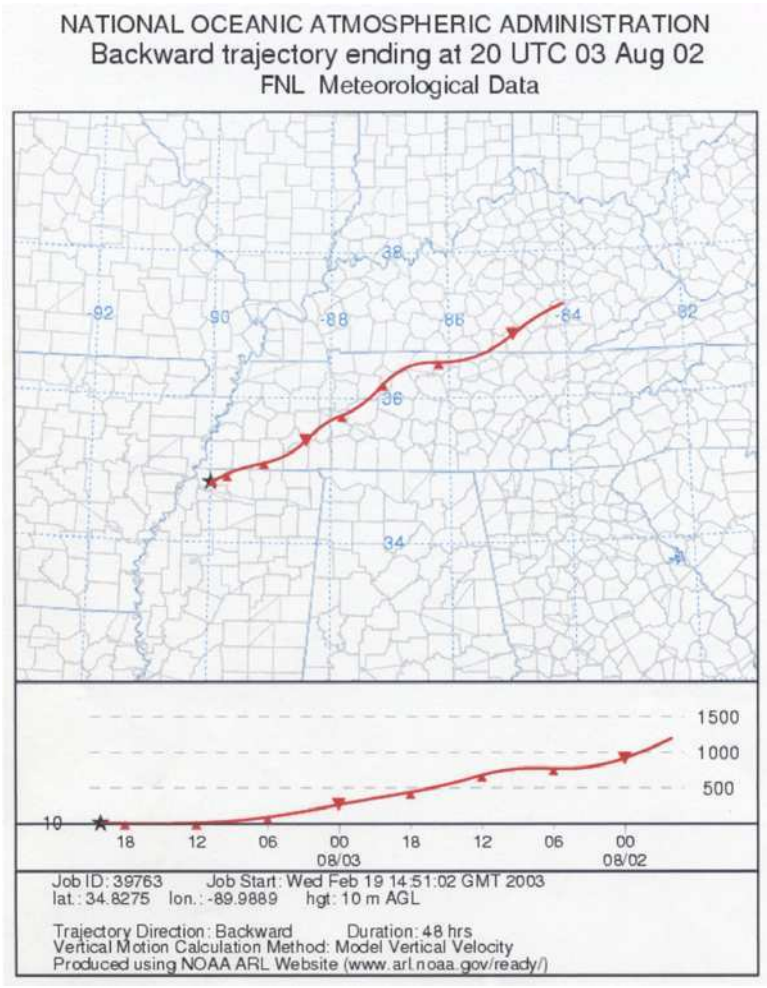

Figure 12
Hernando, MS
4th Max, 2002
91 ppb

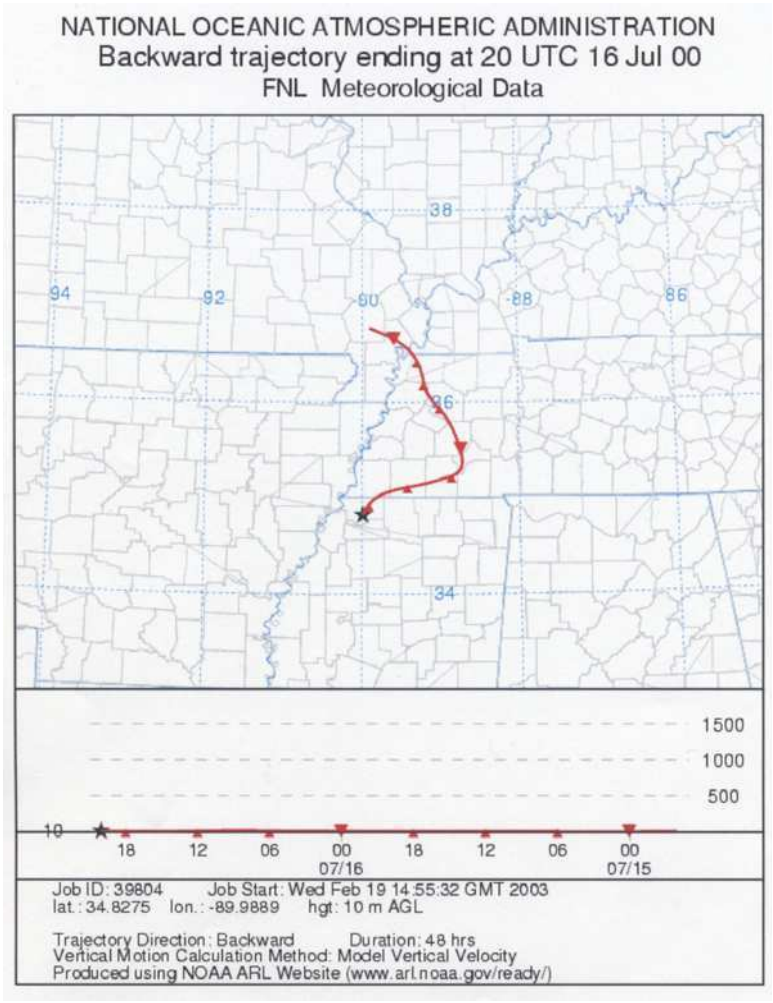

Figure 13
Hernando, MS
1st Max, 2000
96 ppb

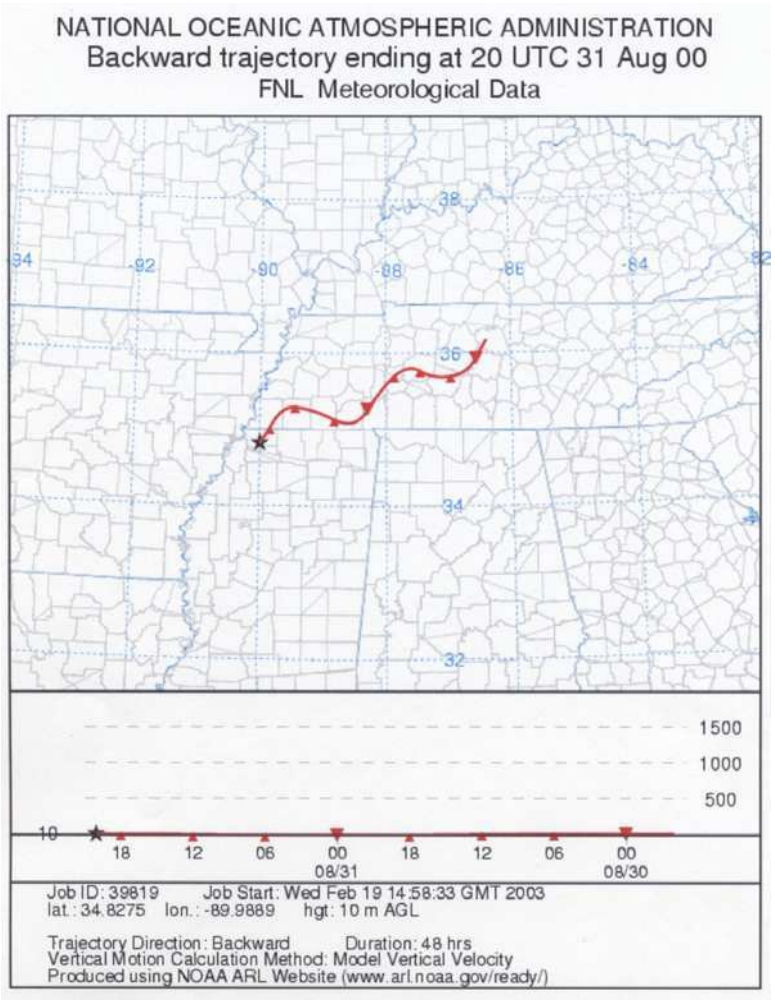

Figure 14
Hernando, MS
2nd Max, 2000
95 ppb

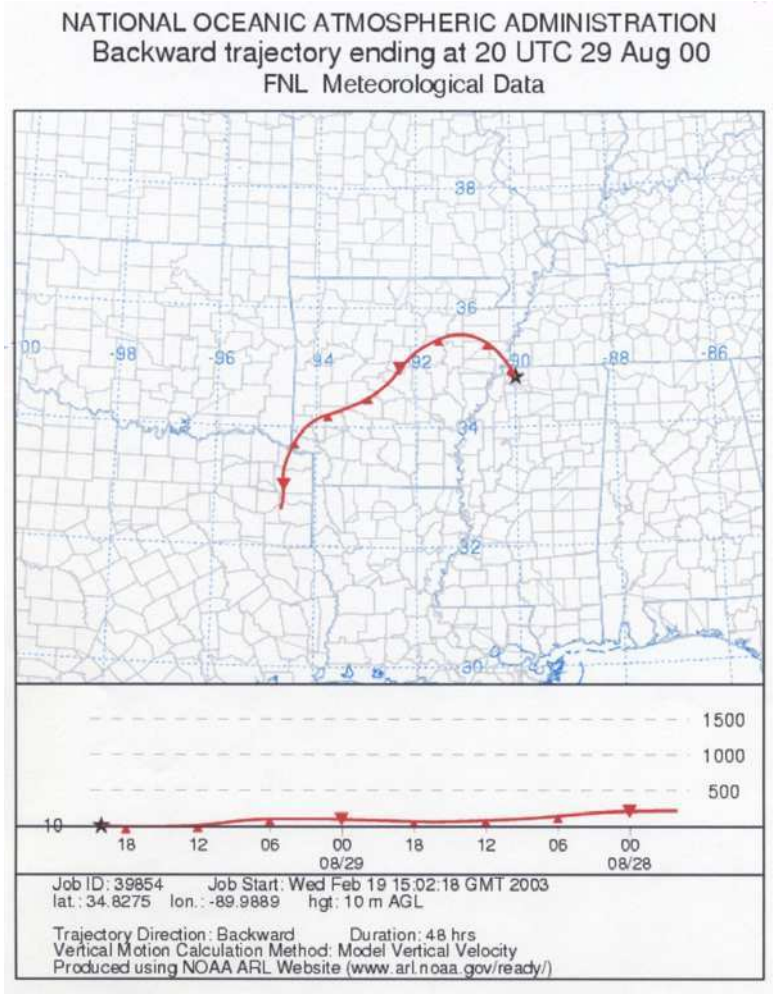

Figure 15
Hernando, MS
3rd Max, 2000
92 ppb

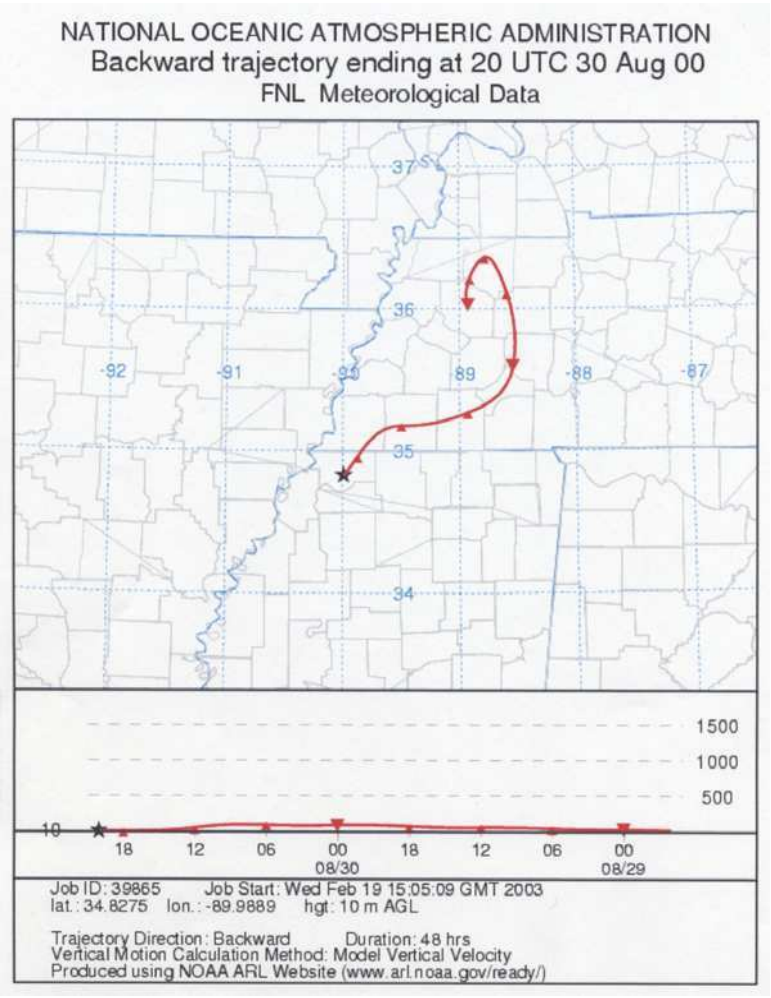

Figure 16
Hernando, MS
4th Max, 2000
92 ppb

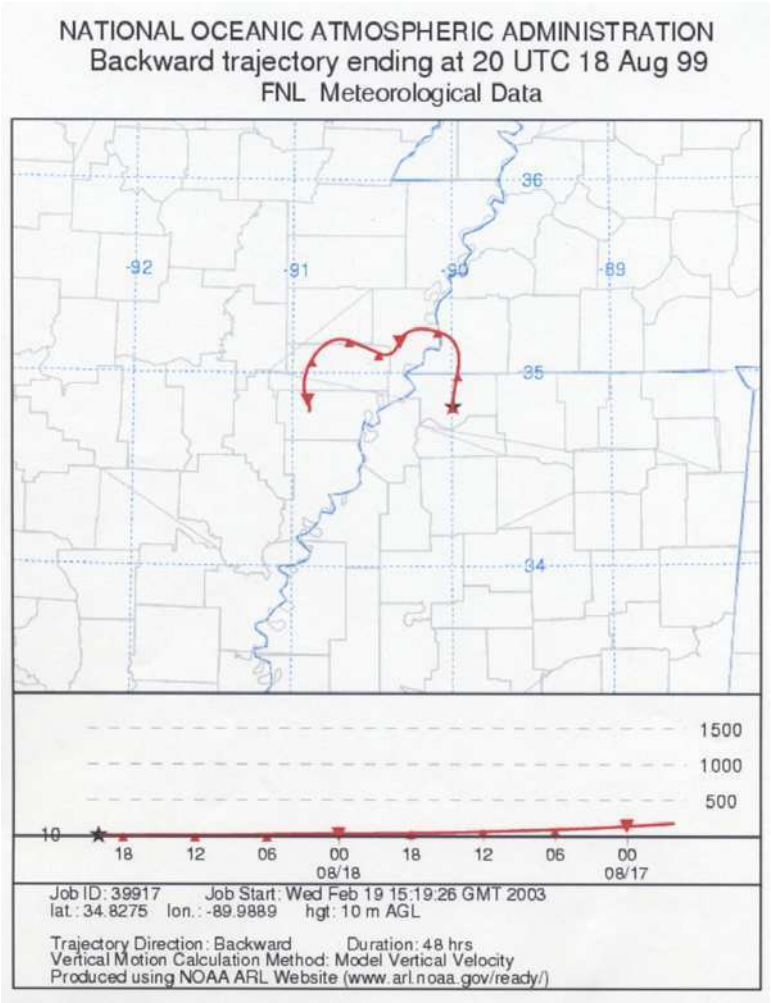

Figure 17
Hernando, MS
1st Max, 1999
108 ppb

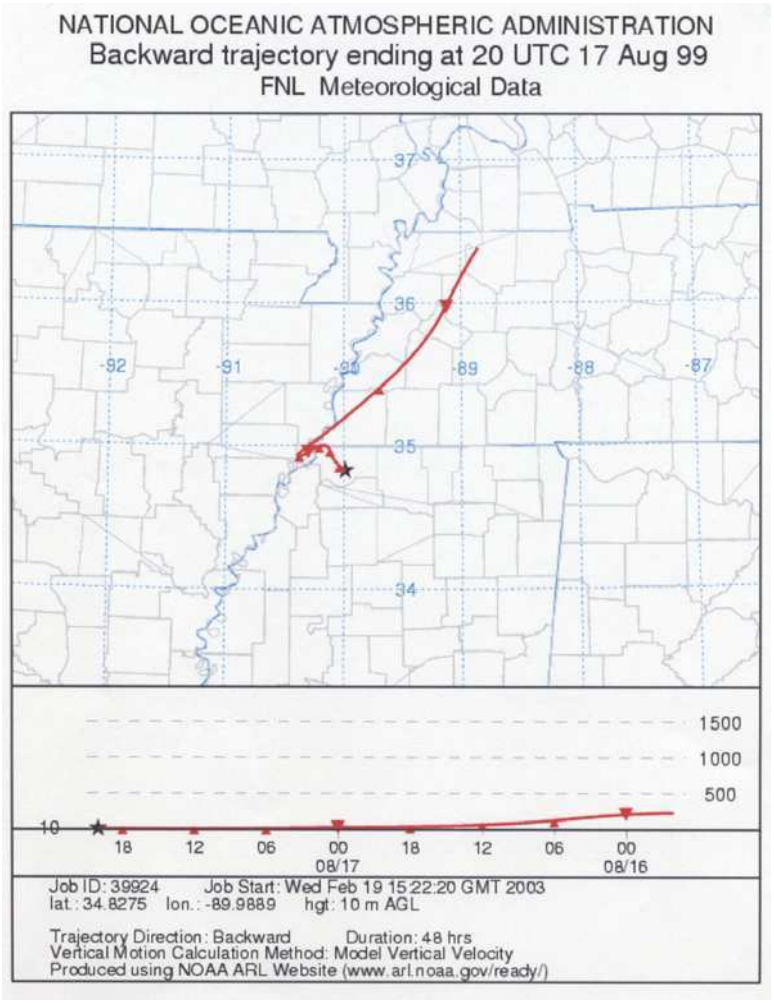

Figure 18
Hernando, MS
2nd Max, 1999
100 ppb

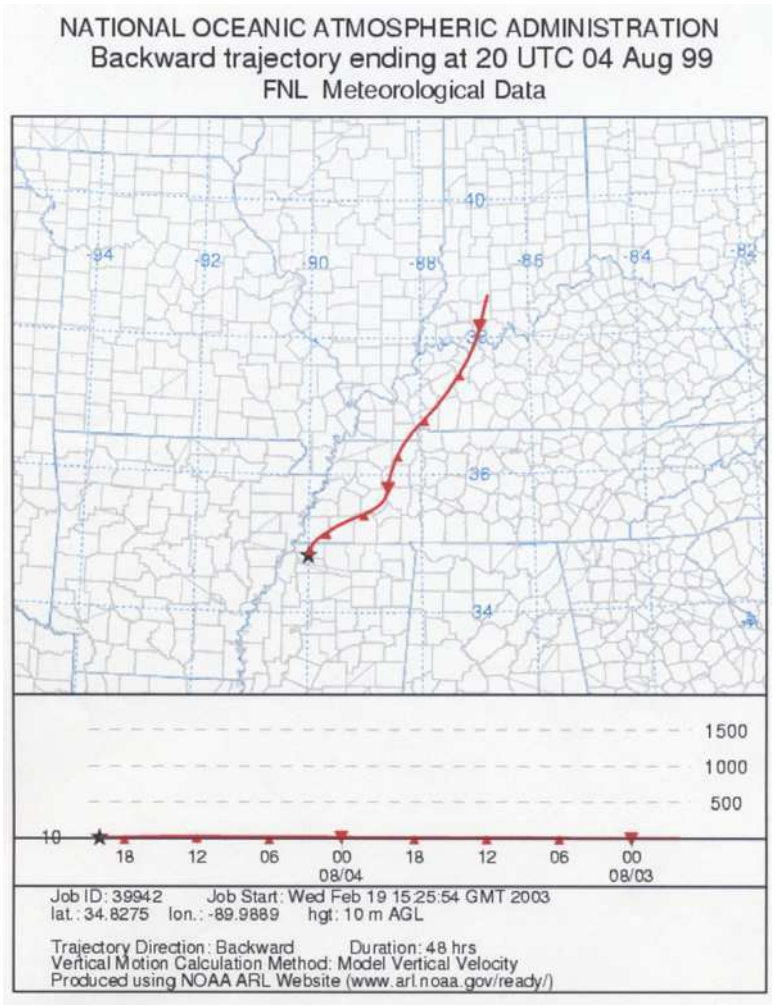

Figure 19
Hernando, MS
3rd Max, 1999
97 ppb

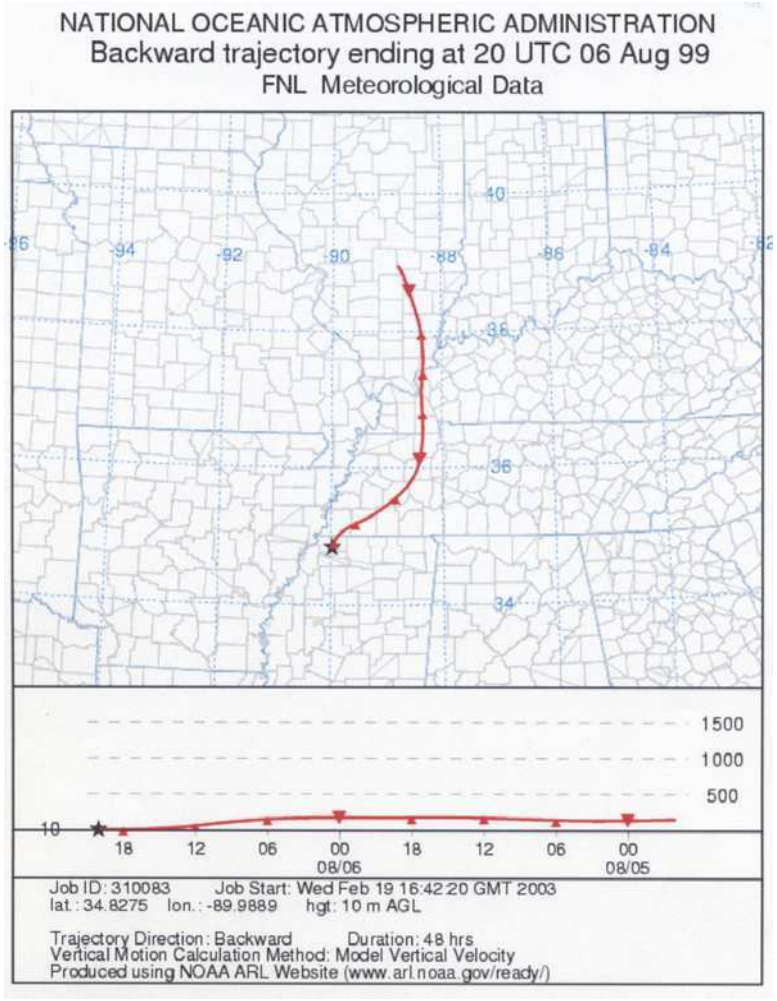

Figure 20
Hernando, MS
4th Max, 1999
93 ppb

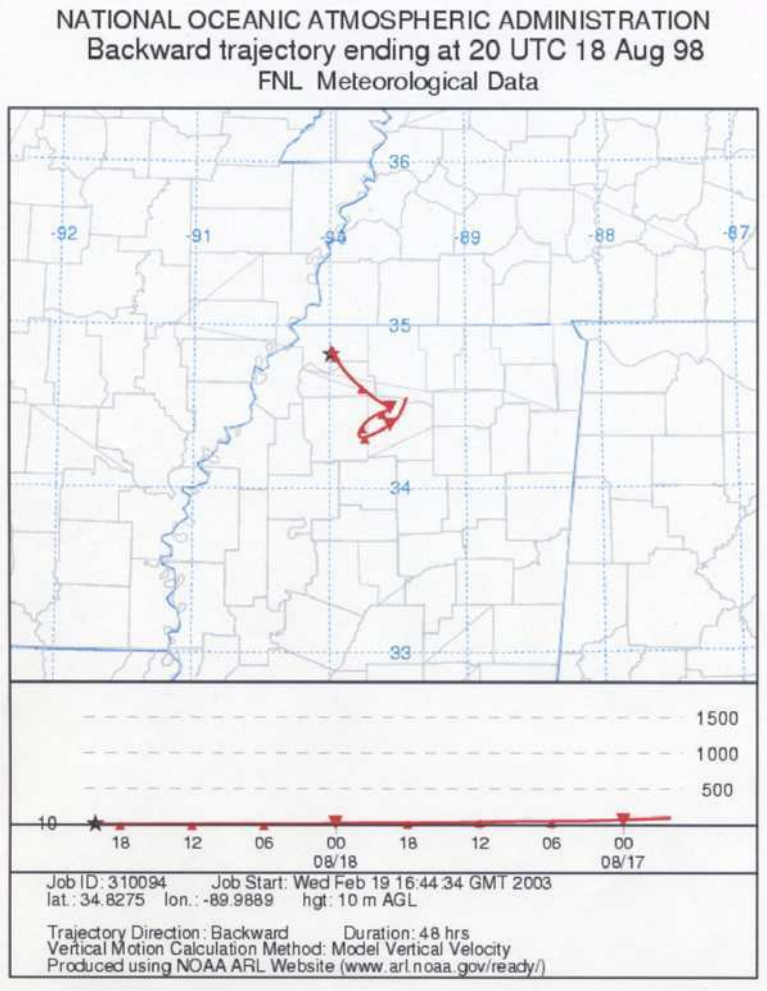

Figure 21
Hernando, MS
1st Max, 1998
99 ppb

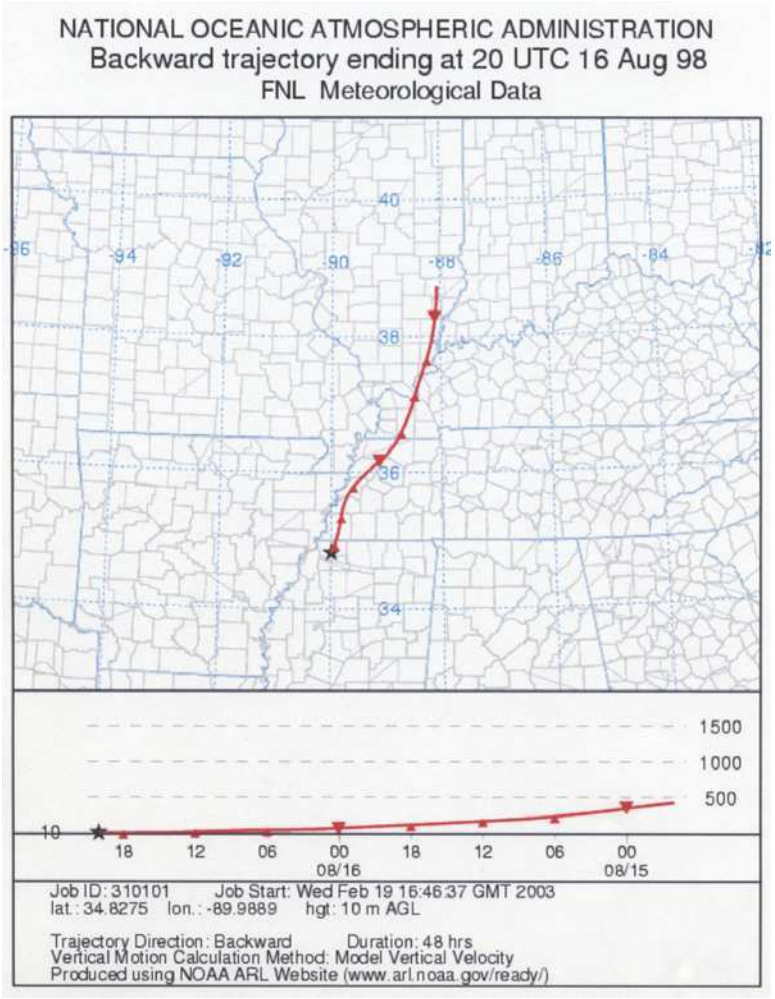

Figure 22
Hernando, MS
2nd Max, 1998
96 ppb

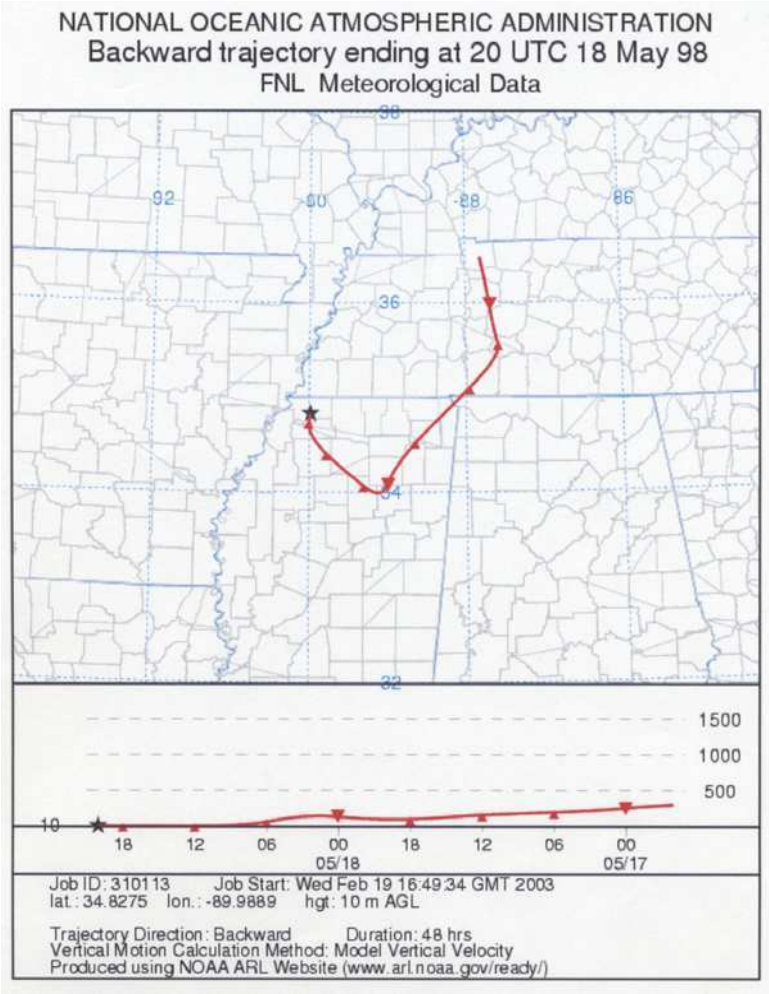

Figure 23
Hernando, MS
3rd Max, 1998
95 ppb

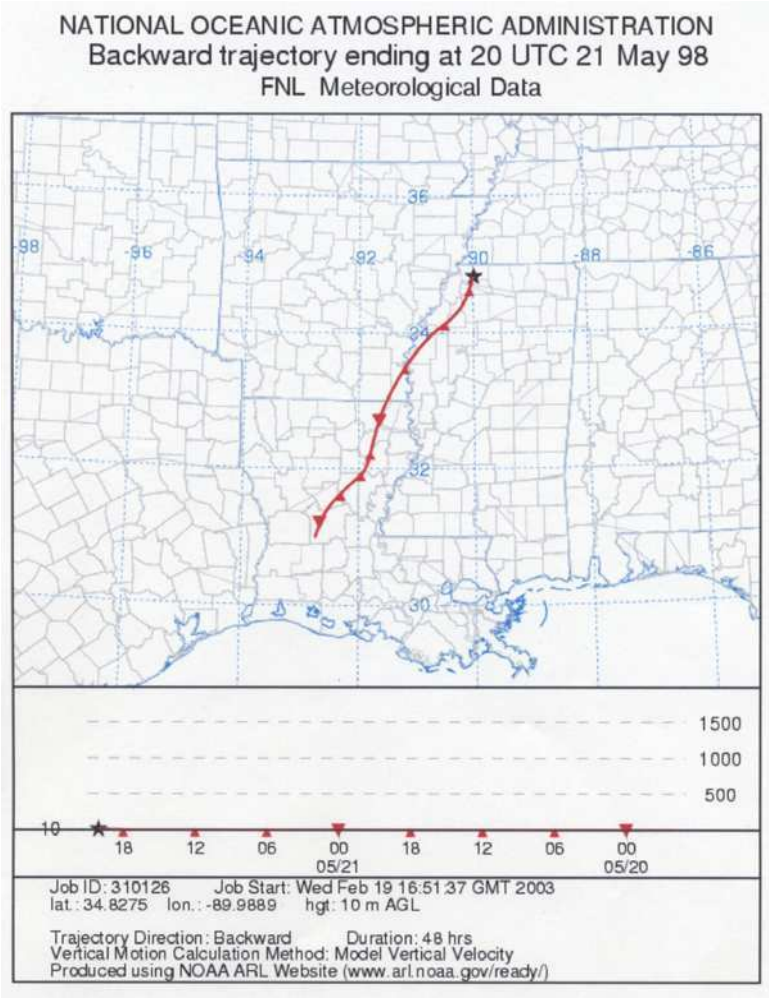

Figure 24
Hernando, MS
4th Max, 1998
89 ppb

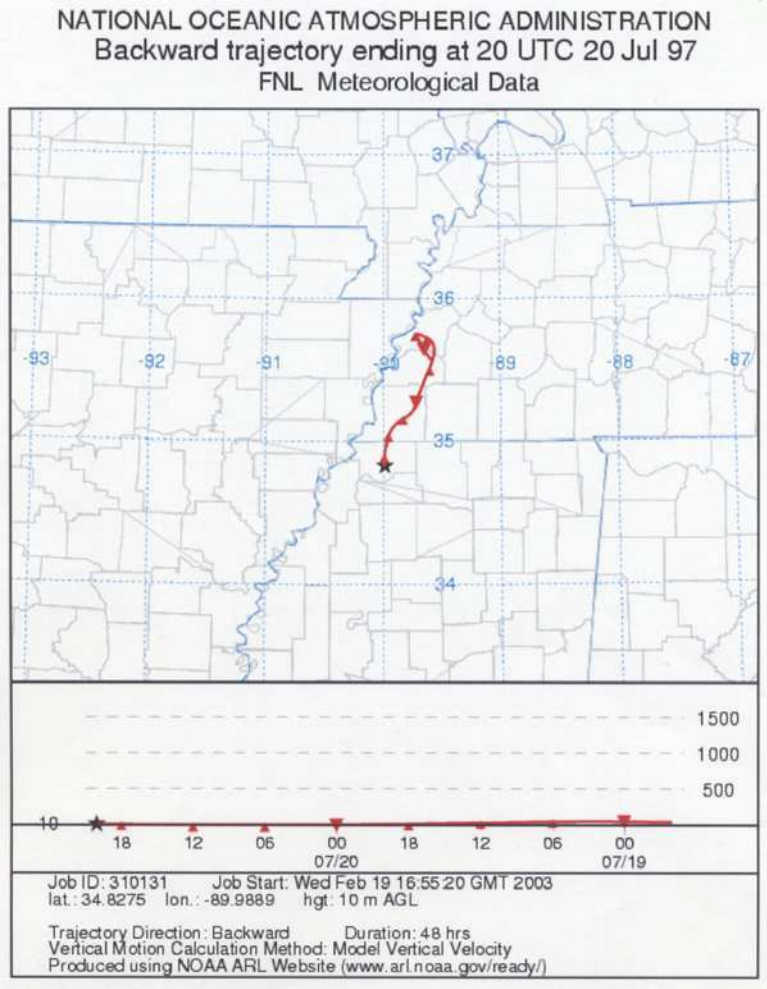

Figure 25
Hernando, MS
1st Max, 1997
108 ppb

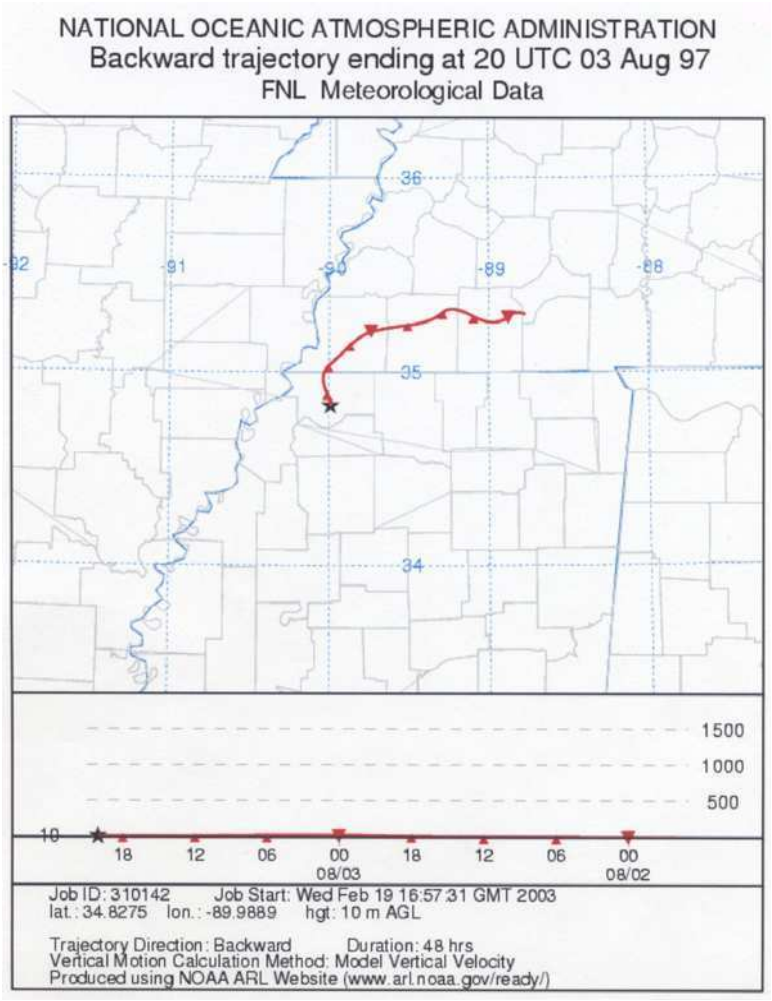

Figure 26
Hernando, MS
2nd Max, 1997
99 ppb

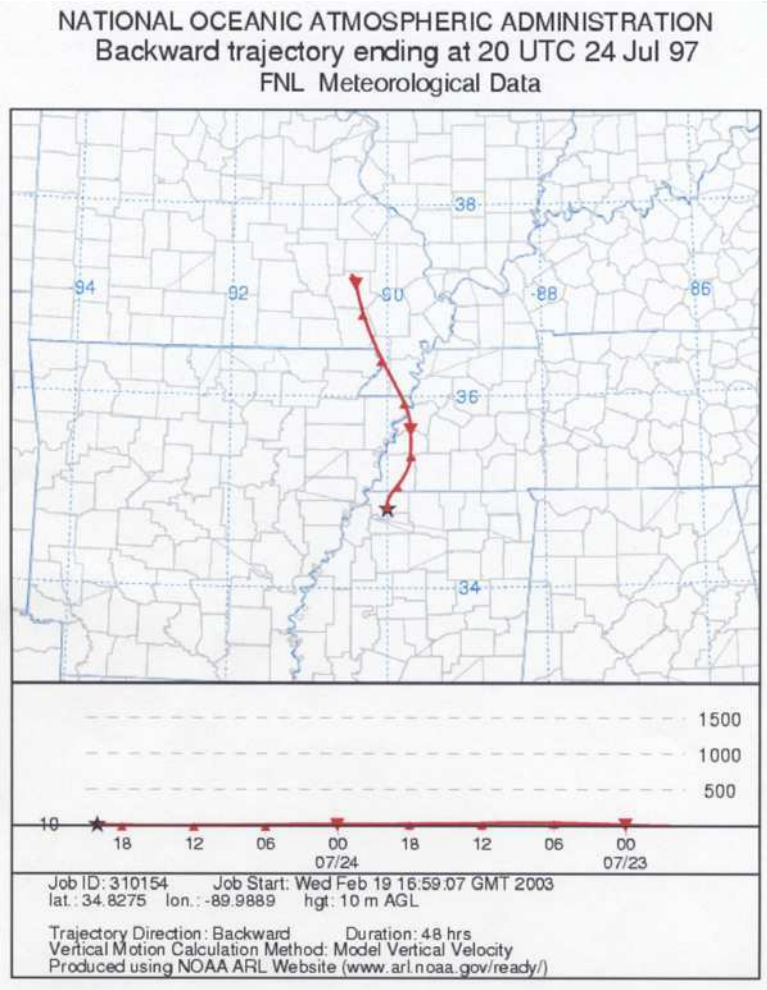

Figure 27
Hernando, MS
3rd Max, 1997
86 ppb

STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

October 6, 2003

Ms. Beverly Banister
Director, APTD
EPA Region 4
61 Forsyth Street SW
Atlanta, Georgia 30303

Dear Beverly,

On July 1, 2003, Mississippi Governor Ronnie Musgrove sent his recommendation to EPA that DeSoto County be considered a separate non-attainment area from the Memphis MSA if the 2003 data continued to indicate non-attainment as the 2000-2002 8-hour ozone data did. The Governor further recommended that DeSoto County be designated an attainment area if the 2001-2003 data indicated attainment. A technical analysis was also submitted to justify this recommendation. After reviewing quality-assured 8-hour ozone data through August 2003 and data not yet quality assured through September 2003, the design value for DeSoto County for the period of 2001-2003 appears to be 81 ppb, thus attaining the 8-hour ambient air quality standard.

Unless there are four days in October with higher 8-hour ozone levels than the highest day thus far in 2003, which is highly unlikely, 2003 will show attainment and the Governor's recommendation then is that DeSoto County be designated an attainment area.

The updated 2003 data continues to show the other counties in Mississippi as attainment.

We will, of course, be providing you with a formal update later. We are providing you with this information now for your information as you prepare to respond to the Governor's recommendation. If you have any questions, please advise.

Respectfully,

Dwight K. Wylie, P.E., DEE
Chief, Air Division

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STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

November 26, 2003

AIR PLANNING BRANCH
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EPA-REGION #4
ATLANTA, GA.

Ms. Beverly Banister
Director, APTD
EPA Region 4
61 Forsyth Street SW
Atlanta, Georgia 30303

Dear Beverly,

As requested, attached is a summary of 2001-2003 8 and 1-hour ozone standard monitored design values and the average expected exceedance rate for the 1-hour standard for each county in Mississippi. The data indicates that all ozone-monitored areas in the state attained the 1-hour and 8-hour ambient air quality ozone standards for this time period. Also, we finished submitting all of the quality assured ozone monitoring data for 2003 to the Air Quality System on November 24, 2003.

In addition, we remind you that the Governor's recommendation is for DeSoto County to be considered a separate attainment area from the Memphis MSA.

If you have any questions, please advise.

Respectfully,

Dwight K. Wylie, P.E., DEE
Chief, Air Division

Attachment

OFFICE OF POLLUTION CONTROL
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2001-2003 Mississippi Ozone Data

County	MSA	2001-2003 1-Hr. Ozone Design Values	2001-2003 1-Hr. Ozone Expected No. of Exceedances	2001-2003 8-Hr. Ozone Design Values
Adams County	N/A	90	0.0	77
Bolivar County	N/A	86	0.0	75
DeSoto County	Memphis	106	0.3	81
Hancock County	Biloxi-Gulfport-Pascagoula	104	0.0	82
Harrison County	Biloxi-Gulfport-Pascagoula	103	0.0	80
Hinds County	Jackson	92	0.0	73
Jackson County	Biloxi-Gulfport-Pascagoula	99	0.0	80
Lauderdale County	N/A	88	0.0	73
Lee County	N/A	98	0.0	79
Madison County	Jackson	91	0.0	74
Warren County	N/A	89	0.0	74