UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

JAN 24 1989

Ref: 8AT-AP

MEMORANDUM

TO: Joseph Tikvart, Chief
Source Receptor Analysis Branch (MD-14)
Office of Air Quality Planning and Standards

FROM: Douglas M. Skie, Chief
Air Programs Branch

SUBJECT: Carbon Monoxide (CO)/Ozone (O_3) Air Quality Data Analysis

I am enclosing a copy of a draft letter to the State of Colorado concerning the PM-10 modeling for the Denver area. I am requesting your comments and concurrence with this letter by February 15, 1989.

Please contact Dale Wells at FTS 564-1773 or John Notar at FTS 564-1755 if you have any questions.

cc: Dave Stonefield (MD-15)

D R A F T

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Bradley J. Beckham, Director
Air Pollution Control Division
Colorado Department of Health
4210 E. 11th Avenue
Denver, Colorado 80220

Dear Brad:

I am writing in answer to your letter of January 4, 1989, to formally clarify several PM-10 Denver area air quality modeling issues. These issues include: 1) background concentration, 2) actual versus allowable emissions, 3) grid density, 4) woodburning inventory update, 5) use of the RAM model for both the 24-hour and annual standards in determining compliance, 6) modeling years and transportation data sets and adjustment of the emission inventory as indicated by chemical mass balance (CMB) modeling.

1) Background concentration: Since there are no samplers in the metro area unaffected by sources, either Estes Park or Limon, the nearest locations, should be used, depending on the average wind direction that day at Stapleton International Airport. Since these sites monitor TSP, the measured concentration should be adjusted to PM-10 using the ratio from the Lamar site, the most representative site with both PM-10 and TSP data. On days when no data exist at Estes Park and Limon, the monthly mean value from Estes Park or Limon (depending on the wind direction as above) should be used. As an alternative, the lowest value measured in the metro area on the day to be modeled may be used as background.

2) Actual versus allowable emissions: Actual emissions should be used for the base year modeling; but for future years, point source emissions (sources with uncontrolled potential emissions greater than 50 tons per year) must be modeled with allowable emissions. A possible exception may be source categories which historically always operate on a schedule that is less than full time.

3) Grid density: We concur that the area will initially be modeled with a 3 X 3 mile grid. Before correction for STP and background, any grid bordering a grid with a modeled 24-hour concentration greater than or equal to 125 ug/m3 will be

regridded to 1 X 1 kilometers (including the grid with the modeled concentration of 125 ug/m3 or more) and the whole metro area remodeled. The model with both the 3 X 3 mile and 1 X 1 kilometer grids will be used to demonstrate attainment and maintenance of the PM-10 standard.

4) Woodburning inventory update: We concur that the woodburning emissions inventory will be updated to reflect the woodburning survey performed by Community Response earlier this year.

5) Use of the RAM model: We concur that the RAM model will be used with the 1982 through 1986 data set to determine 24 hour concentrations. Attainment of the 24-hour standard will be demonstrated if the sixth highest concentration at all receptor locations is below the 150 ug/m3 standard (after including background and correction to STP). Compliance with the annual standard is to be determined as follows: each annual mean shall be calculated by averaging the 24-hour values for that year, rounding to the nearest tenth of a microgram (0.05 or more rounds up). A rolling 3-year average shall be calculated from the annual means, rounding to the nearest integer (.5 or more rounds up). Attainment of the annual standard is demonstrated when all of the rolling 3-year averages at all receptor locations are less than or equal to 50 ug/m3.

6) Modeling years and transportation data sets: We concur that the base year inventory will be 1986, and future year inventories will reflect the years 1995 and 2010 for demonstrating attainment and maintenance respectively. The inventories will use appropriate transportation data and projections supplied by the Denver Regional Council of Governments reflective of these inventory years. The inventories will be adjusted as indicated by the results of the CMB modeling as set forth in the EPA Protocol for Reconciling Differences Among Receptor and Dispersion Models (EPA-450/4-87-008).

If you have any questions, please contact Dale Wells at 293-1773.

Sincerely,

Douglas M. Skie, Chief
Air Programs Branch

cc: Dean Wilson, OAQPS
FCD:January 20, 1989:Wells:pm10mod.ltr