

Concerning the development of transportation conformity budgets for PM_{2.5} nonattainment areas in Utah

The following addresses the lack of need for transportation conformity budget with respect to re-entrained road dust.

40 CFR 93.102.(b) of the Conformity Rule addresses the establishment of budgets for pollutants affecting PM_{2.5}, and says that budgets for re-entrained road dust are presumed to be unnecessary unless either the agency responsible for SIP development or the Administrator determines otherwise.

In support of the presumption contained in the Conformity Rule, the following information is presented to demonstrate that re-entrained road dust was considered but found to be insignificant in the Salt Lake City, UT PM_{2.5} nonattainment area. This information allows for an agreement between Utah and EPA Region 8 that budgets for re-entrained road dust will not be required as part of SIP development.

Data Presented: (See associated Workbook: Car Crust 2015-16 FINAL.xlsx)

For the nonattainment areas of Salt Lake City, UT speciated filter data collected between November 2, 2015 and March 1, 2016 has been analyzed to show the overall mass and percentage of crustal material. This determination relies on a widely used algorithm which assigns percentages to an assemblage of elements commonly found in crustal material (e.g. silicon, aluminum, oxygen). In each case, both the mass and the percentage of crustal material relative to total filter mass are insignificant.

Furthermore, the filter data was sorted into three groups. One group representing 24-hr PM_{2.5} concentrations below 12 µg/m³ (the value of the 2012 annual standard), another group representing values between 12 and 35 µg/m³, and the third group representing concentrations above the 24-hr standard of 35 µg/m³. This grouping is significant because none of Utah's three nonattainment areas violates the annual standard for PM_{2.5}, only the (2006) 24-hr standard. On days when the 24-hr standard is exceeded, it is typically because atmospheric conditions are suitable for the rapid formation of secondary particulate matter, typically ammonium nitrate. The data shows that, as the secondary particulate develops, it overwhelms a somewhat constant amount of crustal material, such that the relative percentage of crustal material decreases as overall PM_{2.5} concentrations increase. This is reflected in the data as presented in the three groups.

Looking more closely at the entire amount of crustal material, it can be attributed to a number of sources and source categories. In other words, not all of it would come from re-entrained road dust.

The emissions inventory for primary PM_{2.5} is therefore also presented to provide an estimate of how much of the overall crustal material might be attributed to re-entrained road dust from on-road mobile sources.

This leads to the conclusion that the on-road mobile contribution represents only a fraction of an already insignificant amount of PM_{2.5} on days when these areas violate the 24-hr standard.

Thus, neither Utah nor EPA Region 8 would find it necessary to disagree with the presumption in CFR 93.102.(b) as it would pertain to the Salt Lake City PM_{2.5} nonattainment area, and it will not be necessary to establish within these areas a transportation conformity budget for, or including, re-entrained road-dust.