

## Episodic Inventory Overview

Much of the technical work done to support a modeled attainment demonstration is the collection of accurate emissions inventories.

The episodic inventory is an assessment of actual emissions paired in time with the episodes of elevated pollutant concentrations used to validate the air quality model.

These Maintenance Plans for PM<sub>10</sub> were developed using an air quality model that had already been validated as part of the State Implementation Plans (SIPs) for Utah's PM<sub>2.5</sub> nonattainment areas. Given the similarities between episodes of high PM<sub>10</sub> and PM<sub>2.5</sub> concentrations, this was not much of a departure from what had already been done.

The inventory includes estimates for the following criteria pollutants: PM<sub>2.5</sub>, SO<sub>x</sub>, NO<sub>x</sub>, VOC, CO as well as ammonia (NH<sub>3</sub>.)

The inventory also includes contribution from a number of sectors. The Utah Division of Air Quality (UDAQ) routinely considers emissions from the following generalized source groupings:

- Large industrial *point sources*,
- *Area sources*, which include smaller, and more numerous, industrial sources as well as activities like space heating that may be well approximated by surrogate indicators such as population,
- *on-road mobile sources*, and
- *Non-road mobile sources*

As mentioned, these inventories represent a great deal of the technical basis for the PM<sub>2.5</sub> SIPs. As such, they occupy a large portion of this Technical Support Document (TSD.)

The episodic inventory is presented first, and begins with a comprehensive summary table. Three episodes had been used for the PM<sub>2.5</sub> validation, but for this PM<sub>10</sub> analysis, only episode 3 was replicated. Thus, the inventory information for episodes 1 and 2 has been omitted from this TSD. Following the summary table is more in depth information for point sources, area sources, and mobile sources.