Episodic Inventory Overview

Much of the technical work done to support the modeled attainment demonstration of the State Implementation Plan (SIP) for PM2.5 is the collection of accurate emissions inventories. The episodic inventory is an assessment of actual emissions paired in time with the episodes of elevated PM2.5 concentrations used to validate the air quality model. The inventory includes estimates for the following criteria pollutants: PM2.5, SOx, NOx, VOC, CO, and NH3. 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.

Episodic inventories are used to verify that the air quality model is working properly by replicating concentrations that were measured during the corresponding episode. The modeling analysis that supports this SIP evaluated three such episodes. The days selected included January 1, 2011 through January 10, 2011, December 7, 2013 through December 19, 2013, and February 1, 2016 through February 16, 2016. The 2011 episode performed the best for model calibration.