

***NATIONAL WEATHER SERVICE  
PRODUCT/SERVICE DESCRIPTION DOCUMENT (PDD)  
TYPE: Official Product  
DATE: May 08, 2003***

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AIR QUALITY INDEX

**Part 1 - Mission Connection**

**1. Product/Service Description:**

The Air Quality Index (AQI) is both a text and graphical product produced by forecasters at the WFO SLC using GFE/IFPS. The AQI has been used in Utah for many years by health officials as well as land management officials to help determine pollution and smoke dispersion on any given day. AQI numbers range from 0 (no dispersion) to 1000+ (excellent dispersion).

**2. Product Type:** Operational Text, Experimental Graphics

**3. Purpose/Intended Use:**

The AQI gives health and land management officials guidance regarding atmospheric dispersion for the next two days. The AQI is used to determine when activities such as controlled burning or pollutant releases are least likely to impact populated areas.

**4. Audience:**

The main audience is health and land management officials, but is available to all in graphic and text form on the Internet.

**5. Presentation Format:**

There are three formats available for the AQI and all are displayed only using the internet. The first is a graphical representation (created by GFE/IFPS) of the AQI that shows all areas of the state with color representation of index numbers from 0 to 1000+. The second is a text format that provides a one number average index for three different broad areas in Utah - western valleys, eastern valleys and mountain areas. This format also displays the AQI specifically for the Salt Lake City area, yesterdays actual AQI Salt Lake City for comparison, as well as a descriptive trend. The third format is a table of all smoke management air sheds in the state (as determined by the Utah Interagency Smoke Management Program) with a average AQI number for each established air shed.

**6. Feedback Method:**

Most feedback comes from our health and land management officials in direct discussions with WFO personnel. Feedback may also be provided by mail to the Point of Contract:

Chris Gibson  
National Weather Service  
WFO Salt Lake City  
2242 W. North Temple  
Salt Lake City, Utah 84116  
Phone 801-524-5133

E-mail comments or questions can be sent to [chris.gibson@noaa.gov](mailto:chris.gibson@noaa.gov).

## Part 2 - Technical

### 1. **Format and Science Basis:**

This product was developed as an aid for determining atmospheric dispersion of smoke and pollutants and has been in use and WFO SLC for at least 15 years in one form or another. The AQI is based on the maximum extent of the lift of air parcels at or near maximum heating time and average wind speeds between the surface and level where lift due to heating no longer occurs. Using GFE/IFPS populated by forecaster edited maximum temperatures and sounding data from the ETA model (other model data could be used if desired), AQI numbers are produced for every 2.5 x 2.5 KM grid over Utah and displayed as graphical images. AQI numbers are also automatically modified for precipitation, which will increase the index numbers. Forecasters may also manually modify the graphical products. Text products take those index numbers for the gridded data and average them for basins and air sheds.

### 2. **Availability:**

The AQI products are produced between 10 PM and midnight each day using the 00z ETA data and forecaster modified maximum temperatures and are available on the internet for the next two days. The AQI numbers can be updated with new forecast and model information at any time.

### 3. **Additional Information:**

The WFO SLC has been producing the AQI for at least 15 years and continues to use the same method of developing the index numbers as in the past. The big difference recently is the use of gridded data that makes it possible to generate AQI numbers for all areas of the state. Chris Gibson is the focal point for this product.