

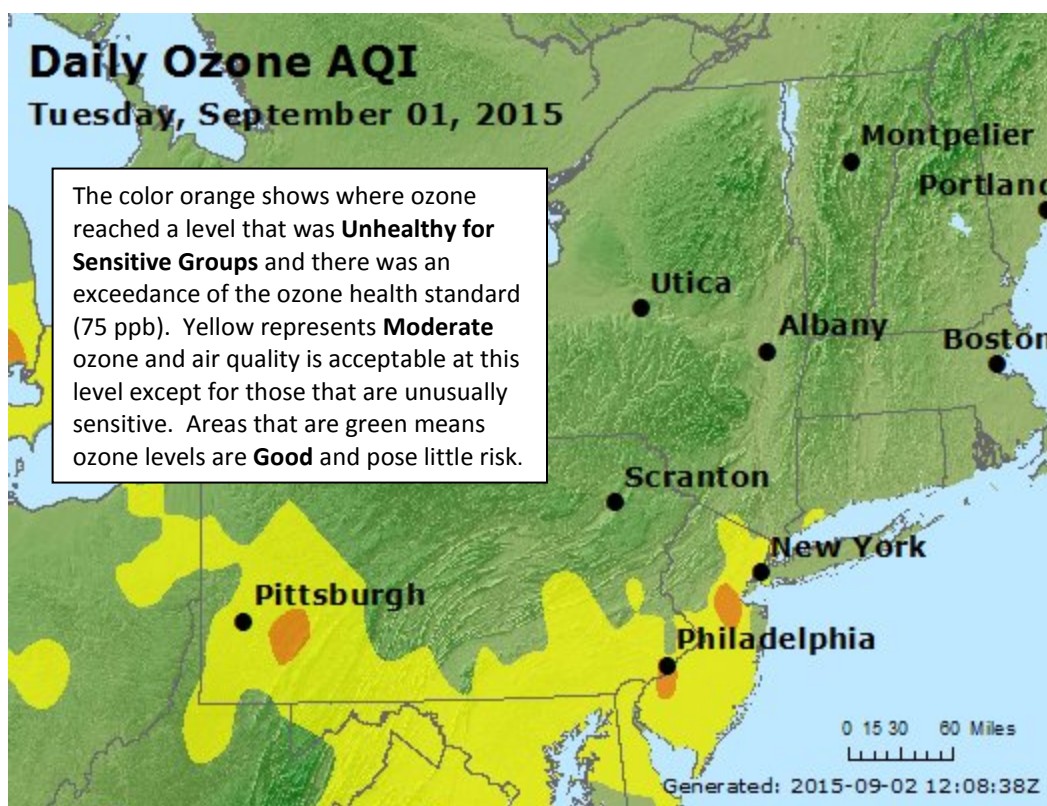
Ozone National Ambient Air Quality Health Standard Exceedances on September 1, 2015

Exceedances Locations and Levels

On Tuesday, September 1, 2015, exceedances of the 8-hour average National Ambient Air Quality Standard (NAAQS) for ozone (75 ppb) were recorded at three (3) New Jersey stations: Rutgers University station with a concentration of 81 ppb, Camden Spruce Street station with a concentration of 78 ppb and Clarksboro station with a concentration of 76 ppb. The highest 1-hour average ozone concentration recorded on September 1, 2015 in New Jersey was 95 ppb at the Rutgers University station, which is below the 1-hour NAAQS of 120 ppb. This is the fourteenth (14th) day there was an exceedance of the 8-hour ozone NAAQS in 2015 for New Jersey. By this time in 2014, there were 3 days on which an ozone exceedance was measured in New Jersey, and there were 9 days in 2013.

There is a group of monitoring stations in designated counties of 5 states, New York, Connecticut, Pennsylvania, Delaware and Maryland, which are included in New Jersey's ozone non-attainment areas. From this group of stations in the other neighboring states, there were no other exceedances of the 8-hour ozone NAAQS recorded on Tuesday, September 1, 2015. The highest 8-hour average ozone concentration recorded was 74 ppb at the Chester, Pennsylvania station. The highest 1-hour average ozone concentration recorded was 79 ppb, also at the Chester, PA station.

Figure 1. Ozone Air Quality Index for September 1, 2015



Source: www.airnow.gov

For ozone terminology definitions see NJDEP Air Quality Planning's Glossary and Acronyms webpage: <http://nj.gov/dep/baqp/glossary.html>

Weather

Meteorological data from across the region showed temperatures reached into the low 90s° F with stagnating conditions. Winds were light and variable with a high pressure ridge approaching the area from the west. Skies were mostly sunny. Sufficient sunlight, combined with warmer temperatures and light variable winds are all features commonly seen with an ozone episode.

Where Did the Air Pollution that Caused Ozone Come From?

Figures 2 and 3 show the back trajectories for the 3 monitored exceedances on September 1. Figure 2 shows where the low level winds came from during the 48 hours preceding the high ozone levels at monitor locations. This figure illustrates that winds recirculated just before approaching the three monitors that exceeded the ozone standard in New Jersey. Recirculating winds allowed polluted air picked up from the previous day to mix with local emissions from cars, trucks, and industry in the areas of southwestern and northeastern New Jersey where the air monitoring sites are located. Figure 3 shows that higher level winds originated from up-state New York and then traveled over the northern New Jersey and Philadelphia metropolitan areas, where there are emissions from mobile sources, industry, and power plants. The combination of these winds caused air pollution from both mobile sources and industry to be transported into the areas of New Jersey that experienced high ozone on September 1.

Figure 2. 48-hour Back Trajectories for Low Level Winds (10 meters)
NOAA HYSPLIT MODEL
Backward trajectories ending at 1800 UTC 01 Sep 15
NAM Meteorological Data

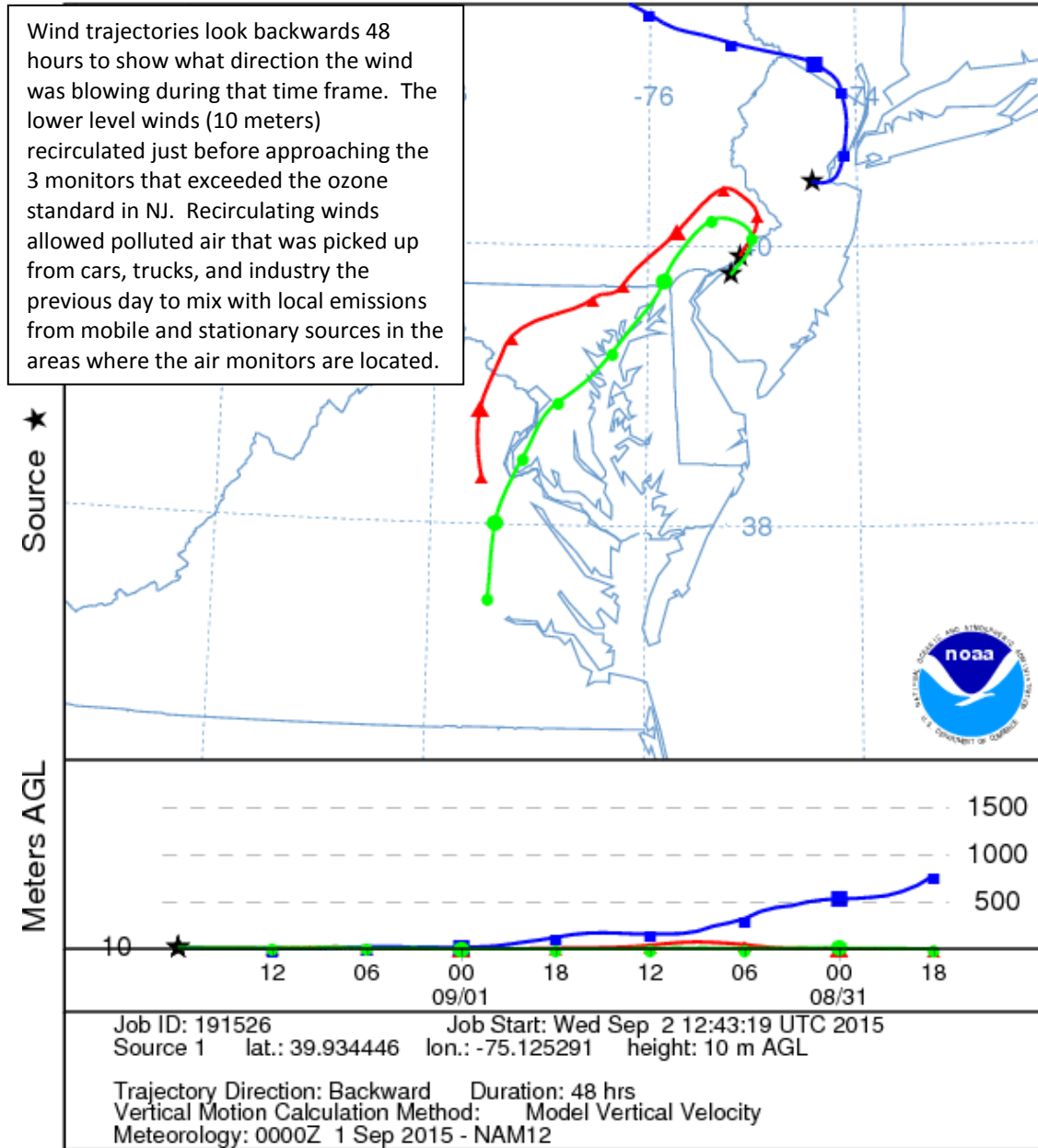
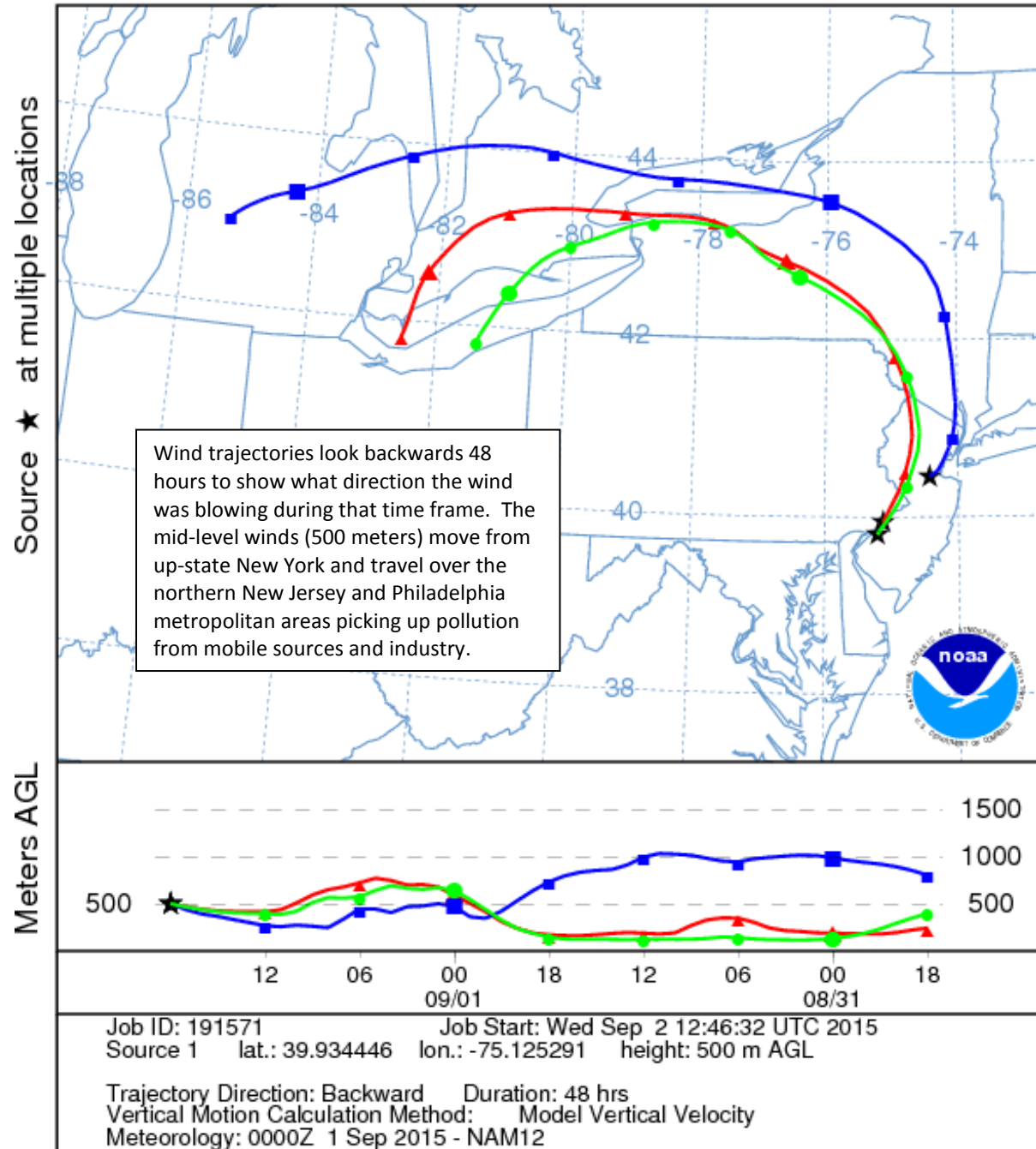


Figure 3. 48-hour Back Trajectories for Higher Level Winds (500 meters)
NOAA HYSPLIT MODEL
 Backward trajectories ending at 1800 UTC 01 Sep 15
 NAM Meteorological Data



How is Smog Created?

Ground-level ozone, also known as smog, is an air pollutant known to cause a number of health effects and negatively impact air quality and the environment in the state of New Jersey. Smog is formed when oxides of nitrogen (NOx) and volatile organic compounds (VOCs) react in the presence of sunlight. Smog can irritate any set of lungs, but those with lung-related deficiencies should take extra precautions on bad ozone days.

Find Out About Air Quality Every Day

The “What's Your Air Quality Today?” page at <http://www.nj.gov/dep/cleanairnj/> tells you how to sign up to receive notifications and find out when your local air has reached unhealthy ozone levels.