Ozone National Ambient Air Quality Standard Health Exceedances on August 9, 2016

Exceedance Locations and Levels

On Tuesday, August 9, 2016, there were no exceedances in New Jersey of the new 8-hour average ozone NAAQS of 70 ppb that became effective in December 2015. The highest 8-hour average ozone concentration was 66 ppb recorded at the Ramapo station.

The highest 1-hour average ozone concentration recorded on August 9, 2016, in New Jersey was 86 ppb at the Ramapo station, which is below the 1-hour ozone NAAQS of 120 ppb.

The number of days in 2016 on which exceedances of the new 8-hour ozone NAAQS of 70 ppb were recorded in New Jersey remains at twenty-one (21). By the 9th of August in 2015, there were a total of ten (10) days on which ozone exceedances were measured in New Jersey (based on the former 75 ppb NAAQS of 2008), and there were two (2) days by this same date in 2014.

There is a group of monitoring stations in designated counties of five (5) states, New York, Connecticut, Pennsylvania, Delaware and Maryland, that are included in New Jersey's ozone nonattainment areas. From this group of stations in the neighboring states, there was one (1) exceedance of the new 8-hour ozone NAAQS of 70 ppb recorded on Tuesday, August 9, 2016 (see Table 1):

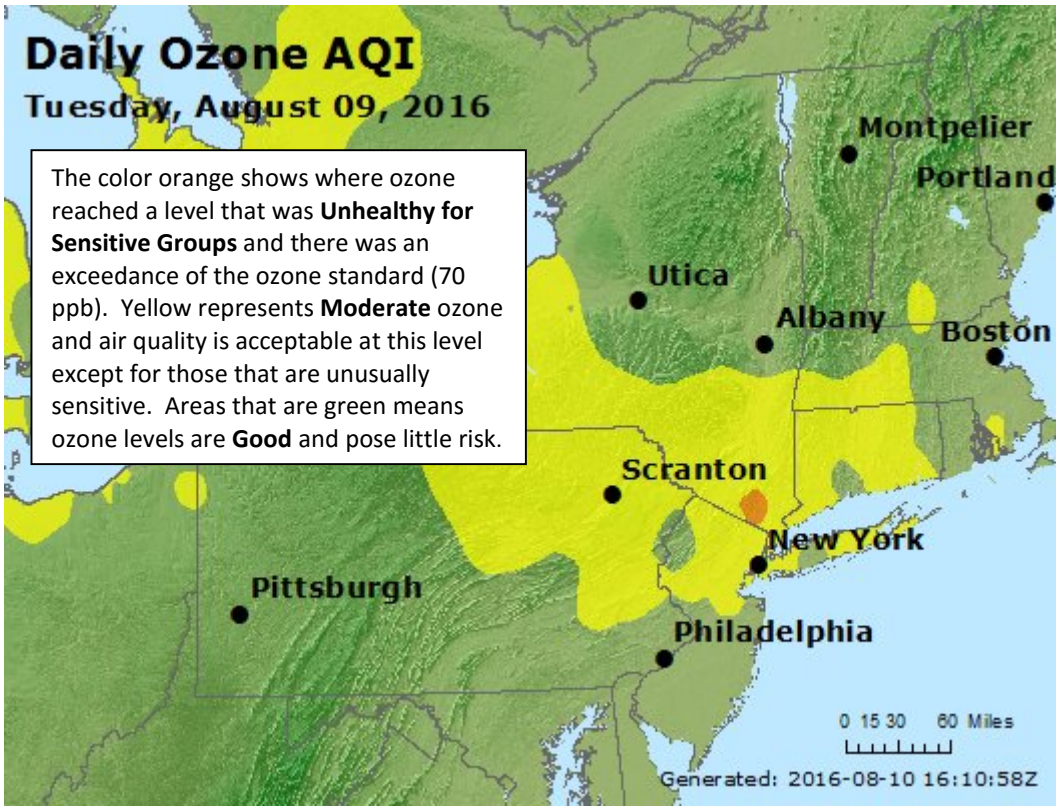
Table 1: Ozone NAAQS Exceedances at Other Monitoring Stations in New Jersey's Ozone Nonattainment Areas on August 9, 2016

STATE	STATION	Daily Maximum 8-Hr Average (ppb)
NY	Rockland Cty	73

The highest 1-hour average ozone concentration recorded was 94 ppb at the Rockland County station in New York, which is below the 1-hour ozone NAAQS of 120 ppb.

Tuesday marks the 18th day in 2016 on which an exceedance of the new 8-hour ozone NAAQS of 70 ppb was recorded in New York. The number of days remains at nineteen (19) for Connecticut, ten (10) for Pennsylvania, seven (7) for Delaware, and six (6) for Maryland.

Figure 1. Ozone Air Quality Index for August 9, 2016



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

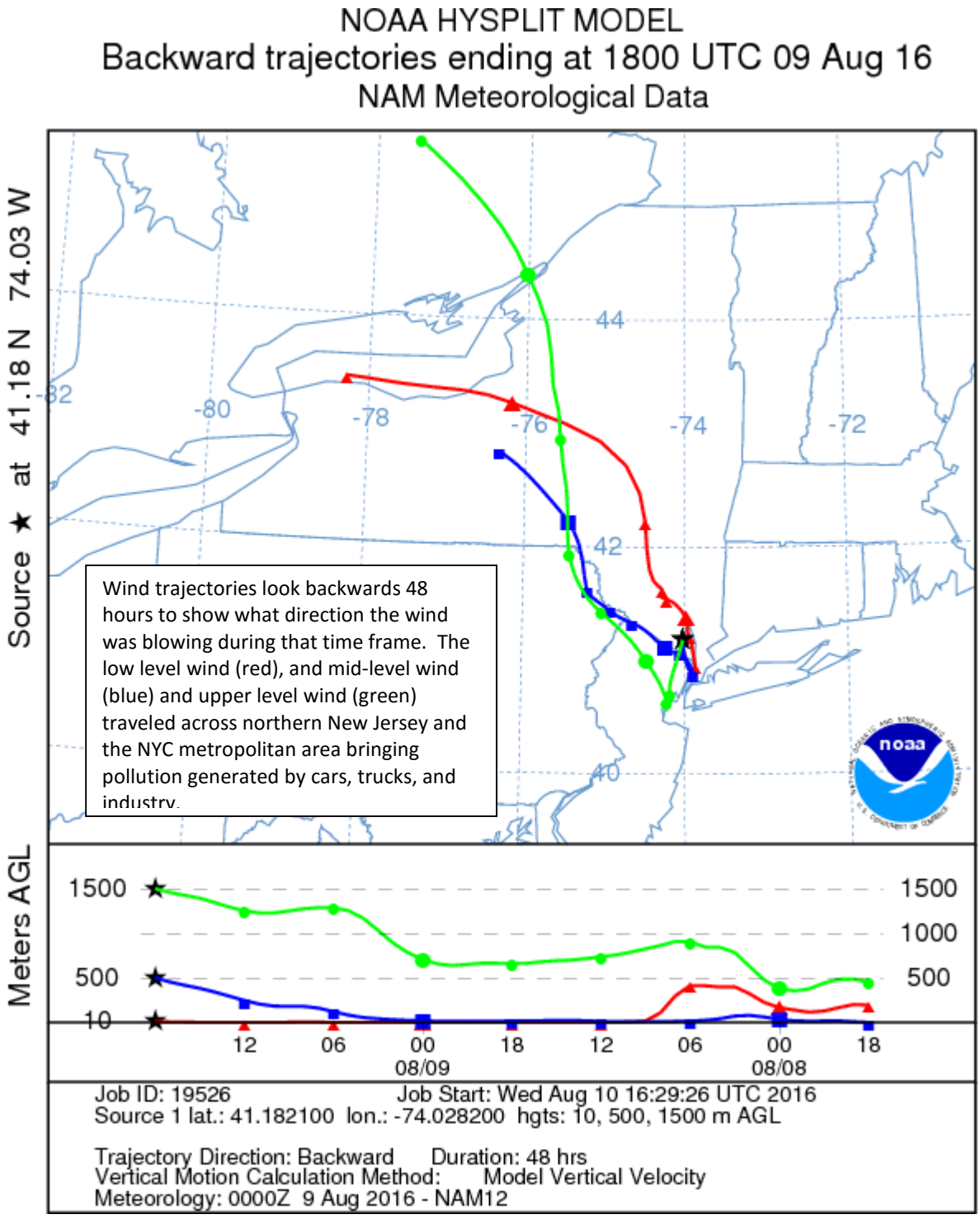
Meteorological data from across the region showed temperatures reached the mid 80°F's, while winds were light and from the southeast. Skies were mostly sunny. A high pressure system was located off of the New England coast. Light winds, adequate sunlight, and warm temperatures, are all meteorological conditions known to contribute to the formation of ground level ozone.

Where Did the Air Pollution that Caused Ozone Come From?

Figure 2 shows the back trajectories at different wind heights for the monitored exceedance on August 9, 2016. The figure illustrates where the winds came from during the 48 hours preceding the high ozone event.

The back trajectories for the low level (10 meter), mid-level (500 meter), and upper level (1500) winds illustrate a similar transport pathway. Winds originated over upstate New York and Canada and traveled south across northern New Jersey and the New York City metropolitan area bringing local emissions generated by cars, trucks, and industry. These winds recirculated back to Rockland County over a six-hour period on the southeast flow that set up during the afternoon around the off-shore high pressure system.

Figure 2. 48-hour Back Trajectories for August 9, 2016



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.