

Bella Vista Community Air Quality Evaluation – Trafalgar Road Fire Air Monitoring Results

As a result of the ongoing Trafalgar Road fire, the Bella Vista POA hired CTEH to conduct an air quality evaluation to assess the nature and extent of smoke from the fire and its impact on air quality in the Bella Vista community. As part of this evaluation, air was continuously monitored 24-hours per day for a week, from March 12 – 19, 2019.

Smoke generated from wood fires contains various gases such as carbon dioxide, carbon monoxide, and other chemicals that contain carbon, nitrogen and sulfur. Smoke also has water vapor and suspended solid and liquid particles known as particulate matter. These particles can be very small and can be inhaled if they are in the air you are breathing. At higher concentrations in the air, they can decrease visibility and cause the air to be hazy. The type and amount of the chemicals and particles that are found in smoke depends on the conditions of the fire, such as what is burning, the temperature of the fire and the amount of oxygen surrounding the burning material.

CTEH chose the chemicals to look for based on our experience over many years responding to fires and on guidelines that have been developed by the US EPA and other agencies to monitor air during wildfires. We developed a Sampling and Analysis Plan (SAP) and submitted it to the Arkansas Department of Environmental Quality (ADEQ) for review. This plan included Action Levels for the amount of particles measured in the air and recommended actions to consider if higher readings were observed for extended time periods (1 to 24 hours). In total, 2,931 readings were collected between March 12 and March 19, 2019, with the vast majority of readings (about 97%) indicating that air quality was well within normal background levels. Of the constituents evaluated, a small number of readings of carbon monoxide were detected above background levels, but they were well below levels that would endanger health. None of the other chemicals we looked for were detected above background levels, and most were never detected in any measurement. Similarly, the levels of fine smoke particles were usually found within background rural levels. However, during the early morning hours (before sunrise) of March 16, 17, and 18, weather conditions favored smoke accumulation throughout the valley areas of the Bella Vista community, resulting in smoke particles at levels higher than were measured at other times during the week. Notably, fine particulate matter decreased to within background levels with sunrise and remained at those decreased levels throughout the remainder of these days.

In addition to the air monitoring conducted throughout the community, analytical instruments were deployed at multiple locations to collect air samples for laboratory analyses. The results from these samples have not been provided by the lab; however, as soon as these are available, they will be communicated to the community, the Arkansas Department of Environmental Quality (ADEQ), and the Arkansas Department of Health (ADH).