

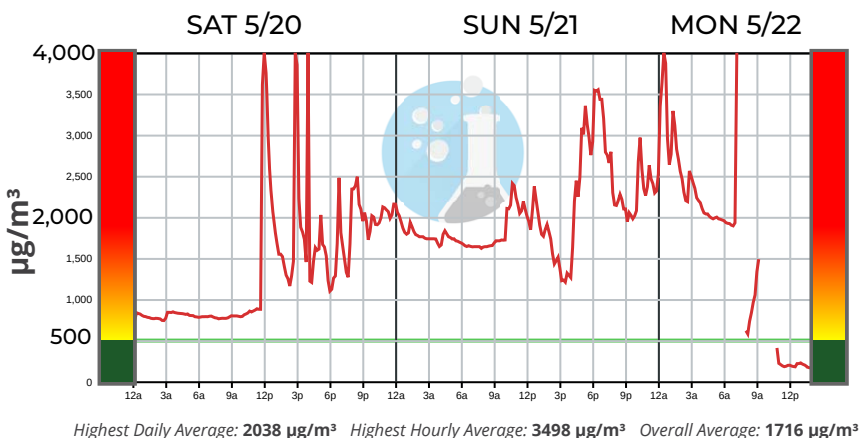
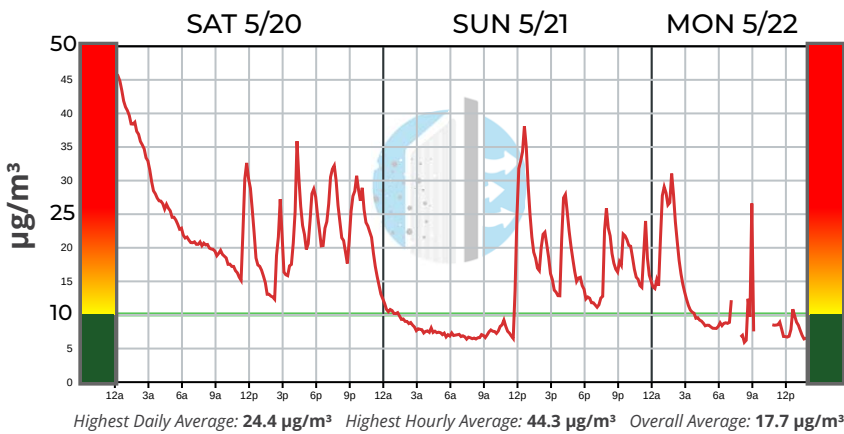
A Case Study

INTRODUCTION

“Please don't let me die” is what Christina said to her husband Robert as the ambulance left for the hospital. She would make it through and fully recover. Following this dramatic event Robert looked into testing the air in the home into anything he could do to prevent another attack. He had their home's air quality tested and discovered high levels of PM2.5 and VOCs, which they believed might be triggering Christine's asthma. Based on the test results, they installed a Lennox PureAir system and a Lennox Smart IAQ monitor to address these concerns and create a healthier living environment.

IAQ TESTING

An IAQ test revealed opportunities for improvement of their 2012 home. PM2.5 and VOC levels were elevated in the home: (Particulate Matter & Volatile Organic Compounds below):



BUILDING FEATURES

Location:

Tuttle, OK

Year & Style:

2012, 2-story Single-family

No. of Bedrooms:

3

Square Footage:

2008 sq ft

No. of Occupants:

2

HVAC:

Original forced air gas

“ It was eye opening how bad our home was for air quality initially. Also, to give more context to our situation, my wife struggles with seasonal allergies but in some cases, it affects her breathing which in turn she needs to use a nebulizer machine once a week and at worst sometimes daily. – Robert, homeowner ”

“PLEASE DON'T LET ME DIE” HOW ONE COUPLE TOOK CONTROL OF IAQ TO CONTROL ASTHMA

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CHALLENGES

- High PM2.5 and VOC levels: The IAQ test indicated daily chronic unhealthy levels of particulate matter (PM2.5) and volatile organic compounds (VOCs) in the home.
- Asthma attacks: Christine's asthma attacks were exacerbated by poor IAQ, causing significant distress and health risks.

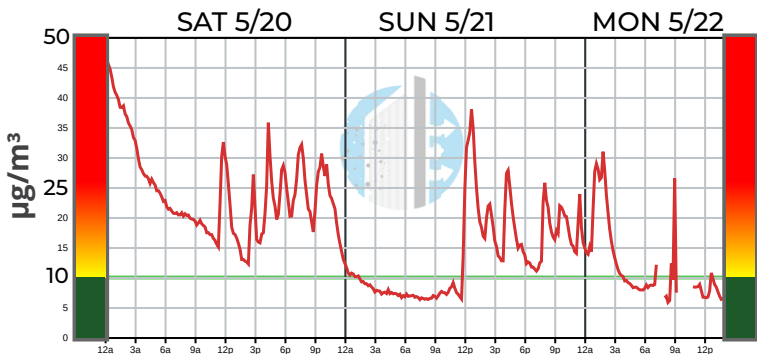
SOLUTION

- Lennox PureAir S Air Purification System: Robert and Christina decided on a Lennox PureAir S system, designed to remove over 99% of airborne particles, including PM2.5, allergens, and VOCs. It does so without producing ozone.
- A state-of-the-art Lennox Smart IAQ Monitor measures the air in the home constantly and communicates with the thermostat to control the appropriate IAQ equipment automatically when pollutants exceed a healthy level.



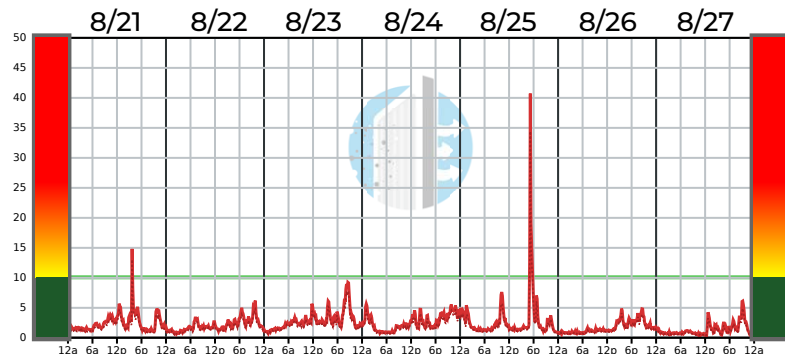
RESULTS Weekly PM2.5 and VOC levels after work was performed:

BEFORE

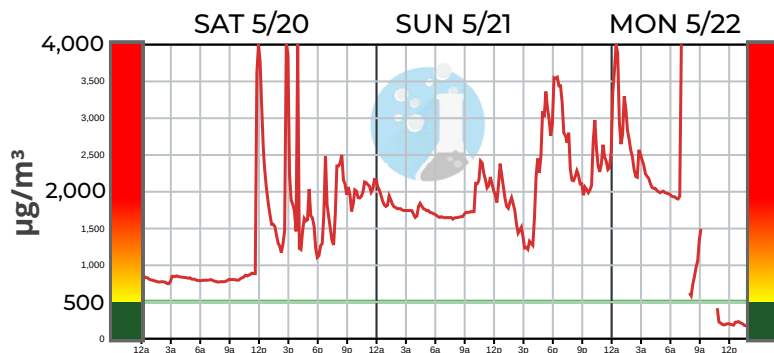


Highest Daily Average: 24.4 µg/m³ Highest Hourly Average: 44.3 µg/m³ Overall Average: 17.7 µg/m³

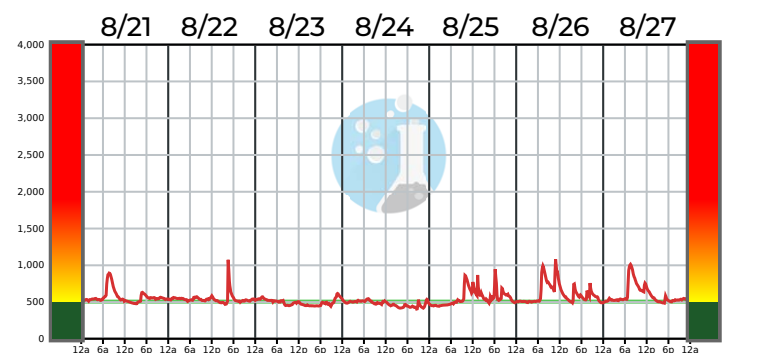
AFTER



Highest Daily Average: 2.9 µg/m³ Highest Hourly Average: 16.8 µg/m³ Overall Average: 2.2 µg/m³



Highest Daily Average: 2038 µg/m³ Highest Hourly Average: 3498 µg/m³ Overall Average: 1716 µg/m³



Highest Daily Average: 605 µg/m³ Highest Hourly Average: 939 µg/m³ Overall Average: 543 µg/m³

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The reduction of both PM2.5 and VOCs was a drastic improvement. Weekly carbon dioxide levels around 900 ppm indicate that whole home ventilation could further reduce the VOCs levels if desired.

| Pollutant | Before | After | % Reduction |
|---------------|--------|-------|-------------|
| PM2.5 (µg/m³) | 17.7 | 2.2 | 88% |
| VOCs (µg/m³) | 1,716 | 543 | 68% |

- **Reduction of medication** consumed for allergies and asthma attacks.
- **Energy savings:** HVAC system was replaced with a high efficiency heat pump SL25XPV that at the time of writing has already saved the family \$287 year over year.

| Electric Bill | Old Unit | New Unit | Variance |
|---------------|------------|------------|----------|
| March | \$241.05 | \$173.43 | \$67.62 |
| April | \$246.10 | \$177.65 | \$68.45 |
| May | \$202.25 | \$192.00 | \$10.25 |
| June | \$308.13 | \$241.56 | \$66.57 |
| July | \$350.63 | \$276.44 | \$74.19 |
| TOTAL | \$1,348.16 | \$1,061.08 | \$287.08 |

- **Peace of mind:** Robert and Christine now have peace of mind knowing their home's air is clean and safe. A State of the art smart air monitor communicates with their HVAC system to control pollutants automatically.

CONCLUSION

Indoor pollutants are a normal part of modern life and controlling them happens by design. Installing a Lennox PureAir system has made a life-changing difference for Robert and Christine. By improving their indoor air quality, they have significantly reduced the frequency and severity of Christine's medication and asthma attacks completely, allowing them to enjoy a healthier home. They hope others will be inspired by their story to take action and enjoy the same.

- **Improved indoor air quality:** The PureAir system effectively removed harmful pollutants from the air, creating a healthier living environment.
- **Reduced asthma attacks:** Since installing the Lennox PureAir system, Christine has experienced a significant reduction in asthma attacks, improving her quality of life.



The New equipment has helped reduce my need for nebulizer that sometimes I need to use daily. So far, thankfully I have yet to use my inhaler or nebulizer since the new equipment has been installed. Also I can tell the air is cleaner and when cleaning I can tell less dust to clean.

– Christina

Since we have installed this IAQ setup, thankfully her struggles have been minimal and she has not needed the nebulizer at all, the system alerts us when the unit works to filter the pollutants. My sincere regret is I wish I had done sooner, but now with this setup we can monitor it and ensure we replace the filter as recommended. I hope this testimonial finds you well and helps in your decision for air quality for your family and home.

– Robert

