Preparing for Conversations about Personal Air Sensors

Megan Green - Air Quality Division

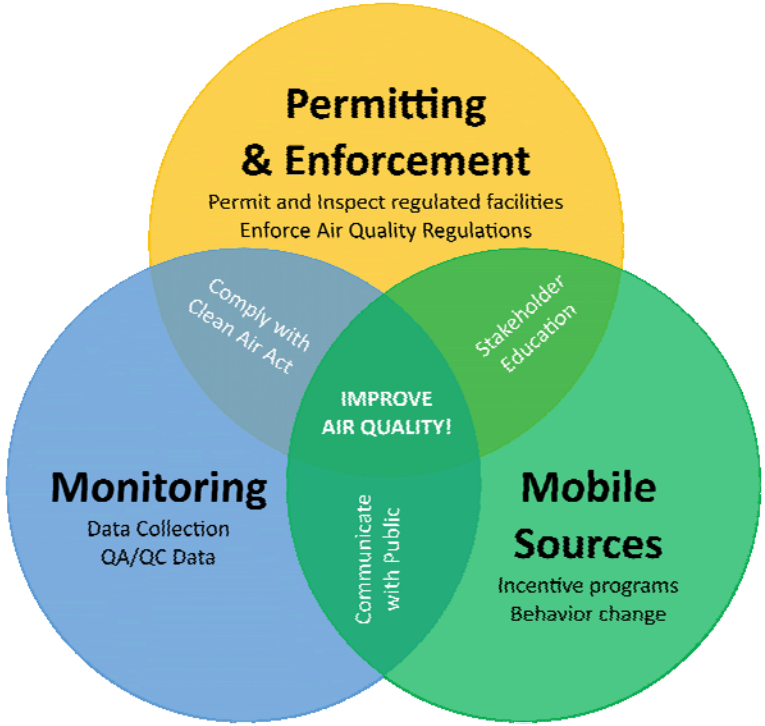
Mecklenburg County Land Use and Environmental Services Agency

Mecklenburg County Air Quality

One of three local programs in North Carolina

MISSION

Lead and assist Mecklenburg County, NC towards **meeting and maintaining compliance** with the health-based National Ambient Air Quality Standards.



It's 2013.
Sensor technology is on the horizon.
What should we do?

Student-led Research on Sensor Technology

UNC CHARLOTTE

Linking Small Businesses to Academic and Community Resources

EAO

Environmental Assistance Office

2013 - Initial Research

- Industry overview (40 devices)
- Possible applications
- Challenges

2014 – Sensor Testing Begins

- Data collection started Oct. 28, 2014
- Two applications
- Working out the kinks

2015 – Collocation Focus

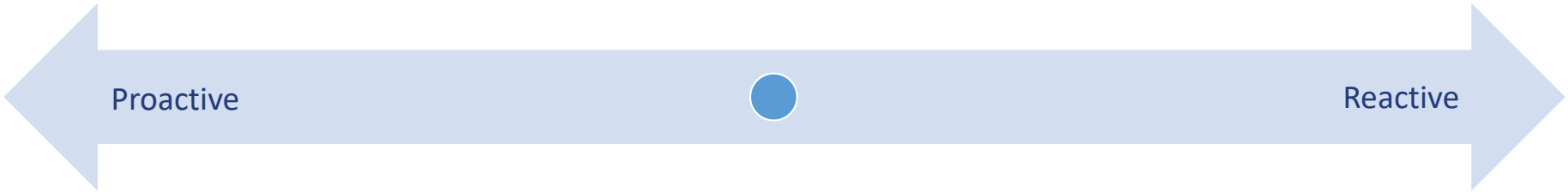
- Multiple sets of sensors
- Two Sample T Test
- Data collection ended May 27, 2016

What We Learned Through Our Research

- Emerging Technology = Work in Progress

- Difficult to Compare Data to Reference Points
  - Units of measure
  - Averaging time

It's 2016.
Sensor technology is HERE.
What should we do?



Preparing for Conversations About Sensors

Develop an internal guidance document that addresses the following:

- MCAQ's understanding of the "state of the science" of personal air sensors (reliability, accuracy, etc.);
- How sensor differs from MCAQ's monitoring network;
- **Recommended uses for air sensors;**
- **Protocol for addressing concerns or questions about "high" readings** on sensors (i.e. how to interpret sensor readings and data).

Lets Talk!

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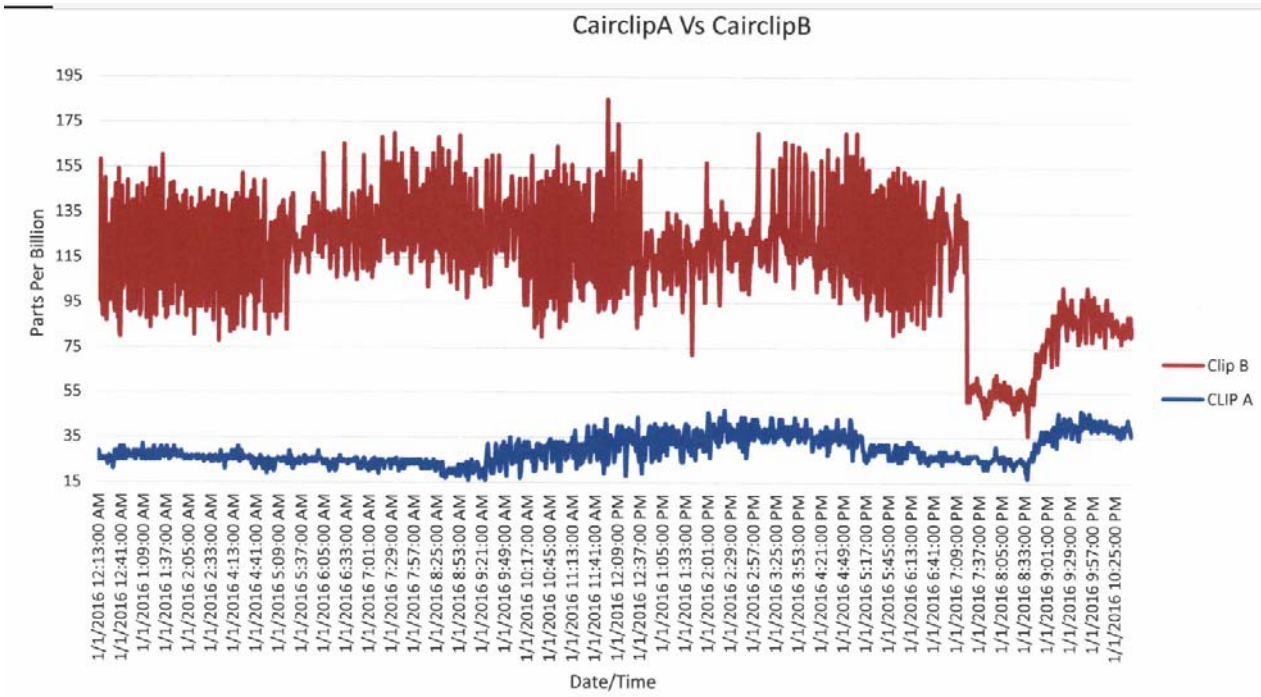
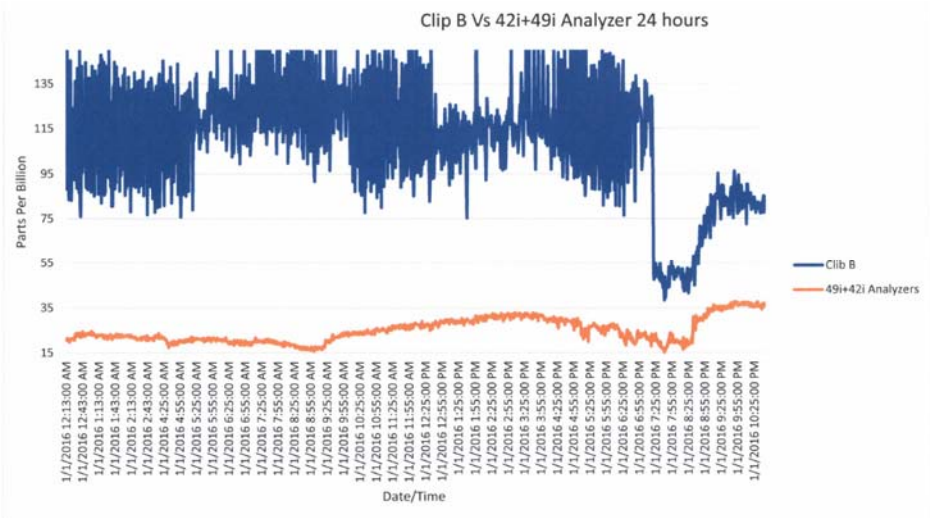
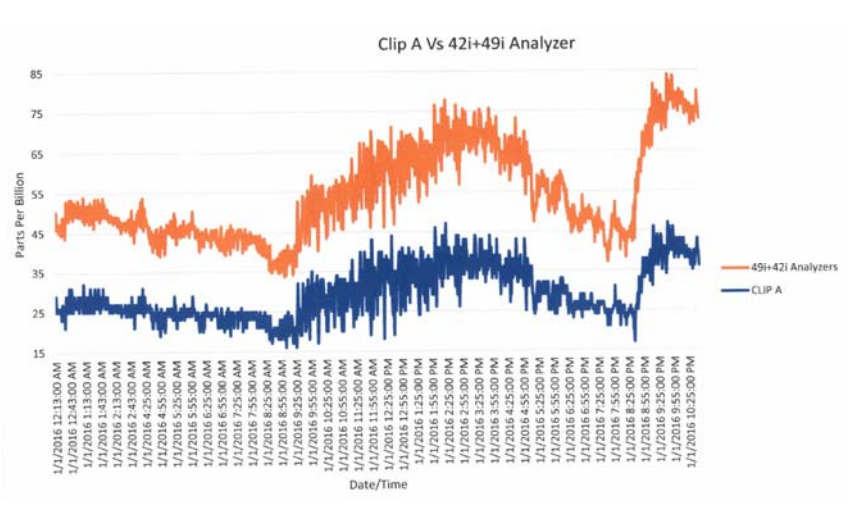
Appendix: CairClip Intradevice Comparison

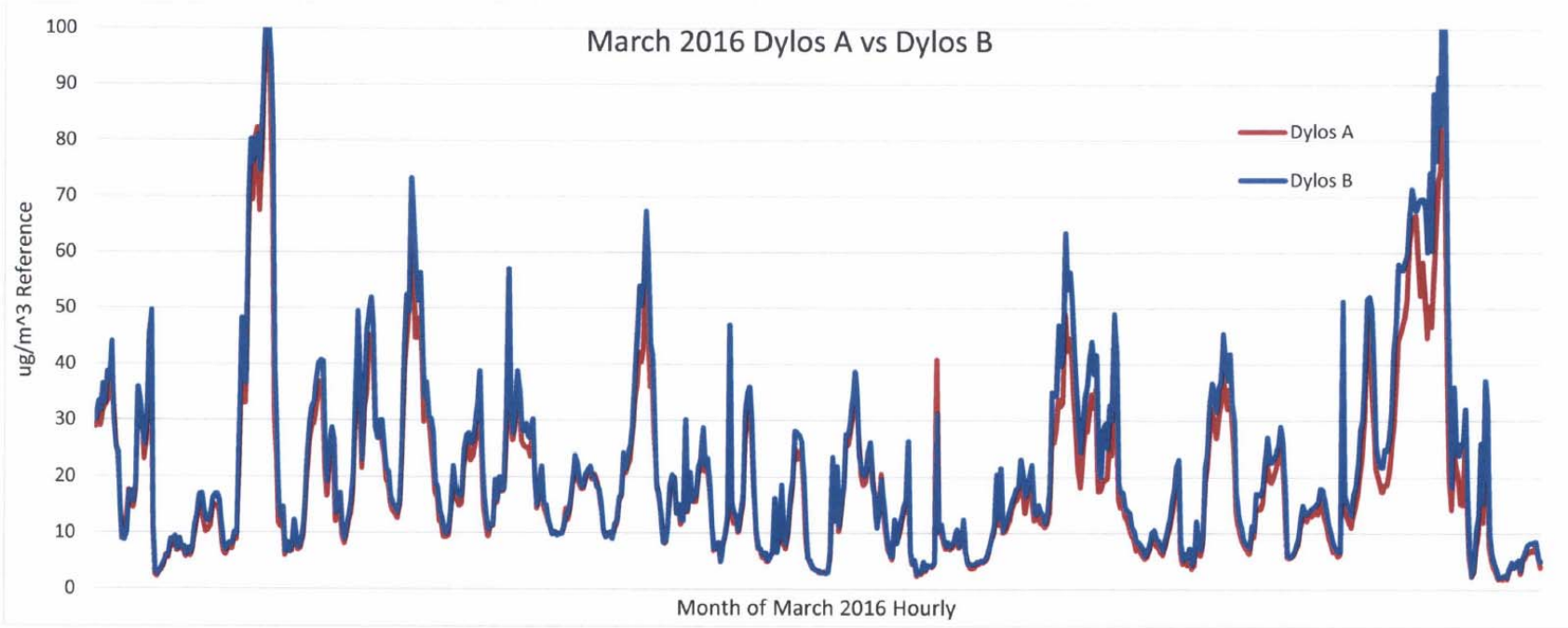


Appendix: CairClip vs. Reference Monitor

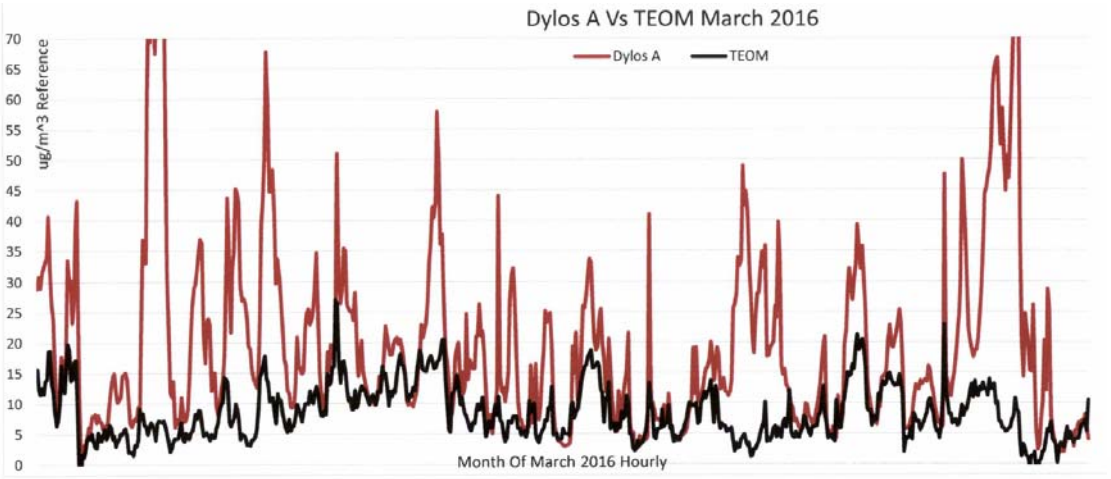


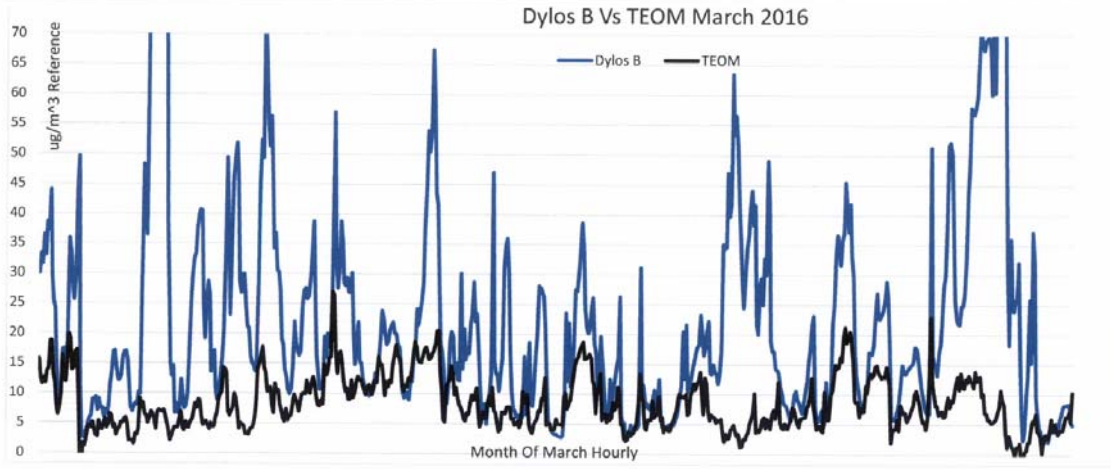
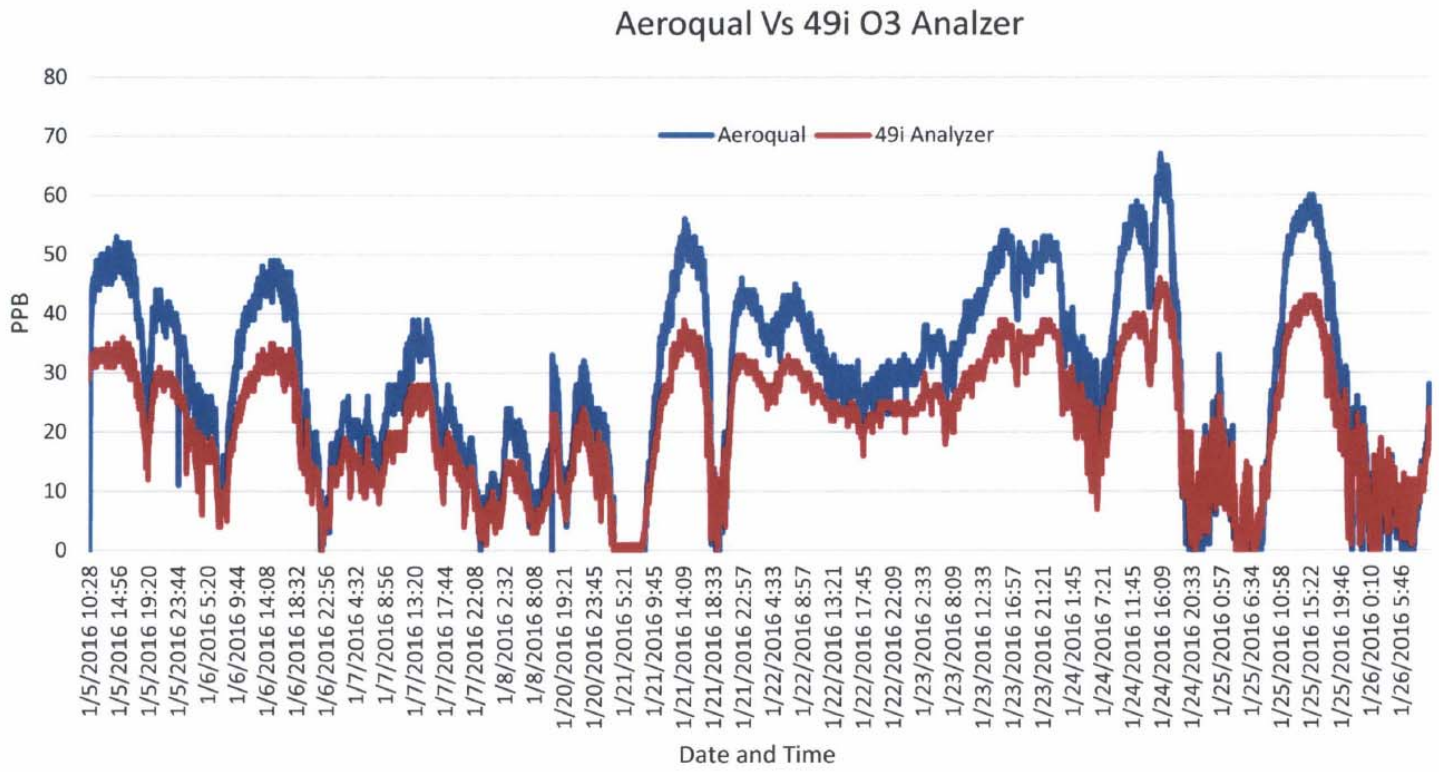


Appendix: Dylos Intradevice Comparison



Appendix: Dylos vs. Reference Monitor





Appendix: Aeroqual vs. Reference Monitor