

# Benzene Fenceline Monitoring

## Regulation Updates & Lessons Learned for Ongoing Compliance



Jesse Miller – Camsco Vice President

# Presentation Topics

- EPA Alternative Test Method ALT-122
- Refinery Sector Proposed Amendments March 2018
- Refinery “X” Pilot Study Results
  - Laboratory Comparison
  - Data Trends
  - Obstacles & Solutions



# Alternative Test Method ALT-122

- Benzene Method Calculation
- Field Duplicates and Field Blanks Required

**Original interpretation:** 2 Field Blanks and 1 Field Duplicate for every 10 Field Samples

**Clarification:** 1 Field Blank and 1 Field Duplicate for <19 Field Samples or 2 Field Duplicates for 20+

- 14 Day Sampling Period - +/- 1 Day grace period

# RSR Proposed Amendments

Signed by EPA March 19, 2018

- As a result of 3 separate petitions filed by AFPM/API (2) & Earthjustice (1)
- Addresses several sections of the RSR – Fenceline Monitoring Specific:
  - ‘Known VOC’, regarding 50m monitoring, defined
  - Corrective Action clarification
  - Reporting Timing Requirements
  - Laboratory calculation/reporting of duplicates



# Refinery "X" Pilot Study Facts

Pilot Sampling Period: 09/19/17 - 12/26/17

7 Sampling Periods

Located in Northeast United States

3 different laboratories for data comparison

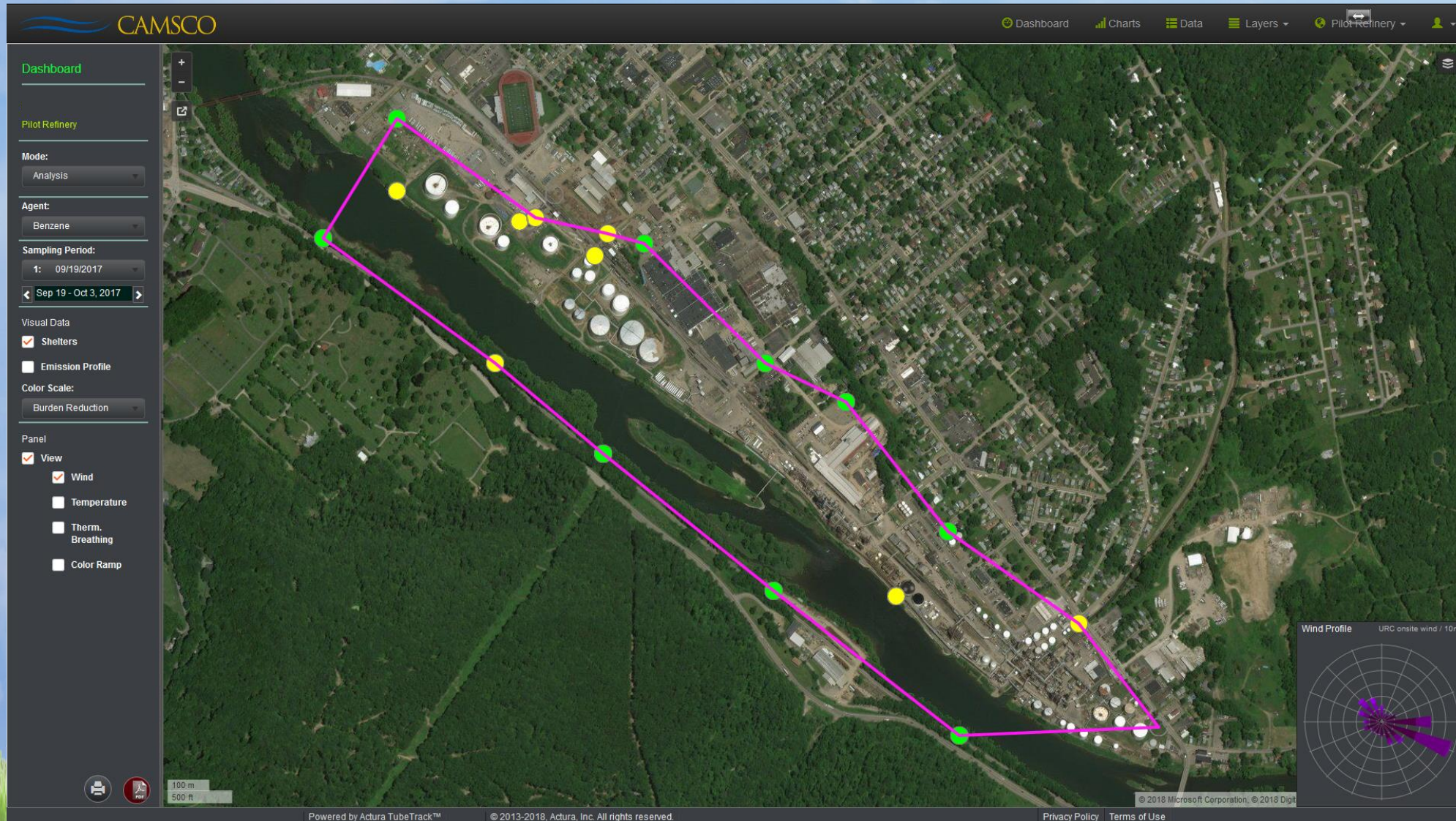
- **Lab A:** 14 Field Samples, 2 Field Blanks & 2 Duplicates
- **Lab B:** 4 Field Samples
- **Lab C:** 4 Field Samples

Same sampling media for each laboratory



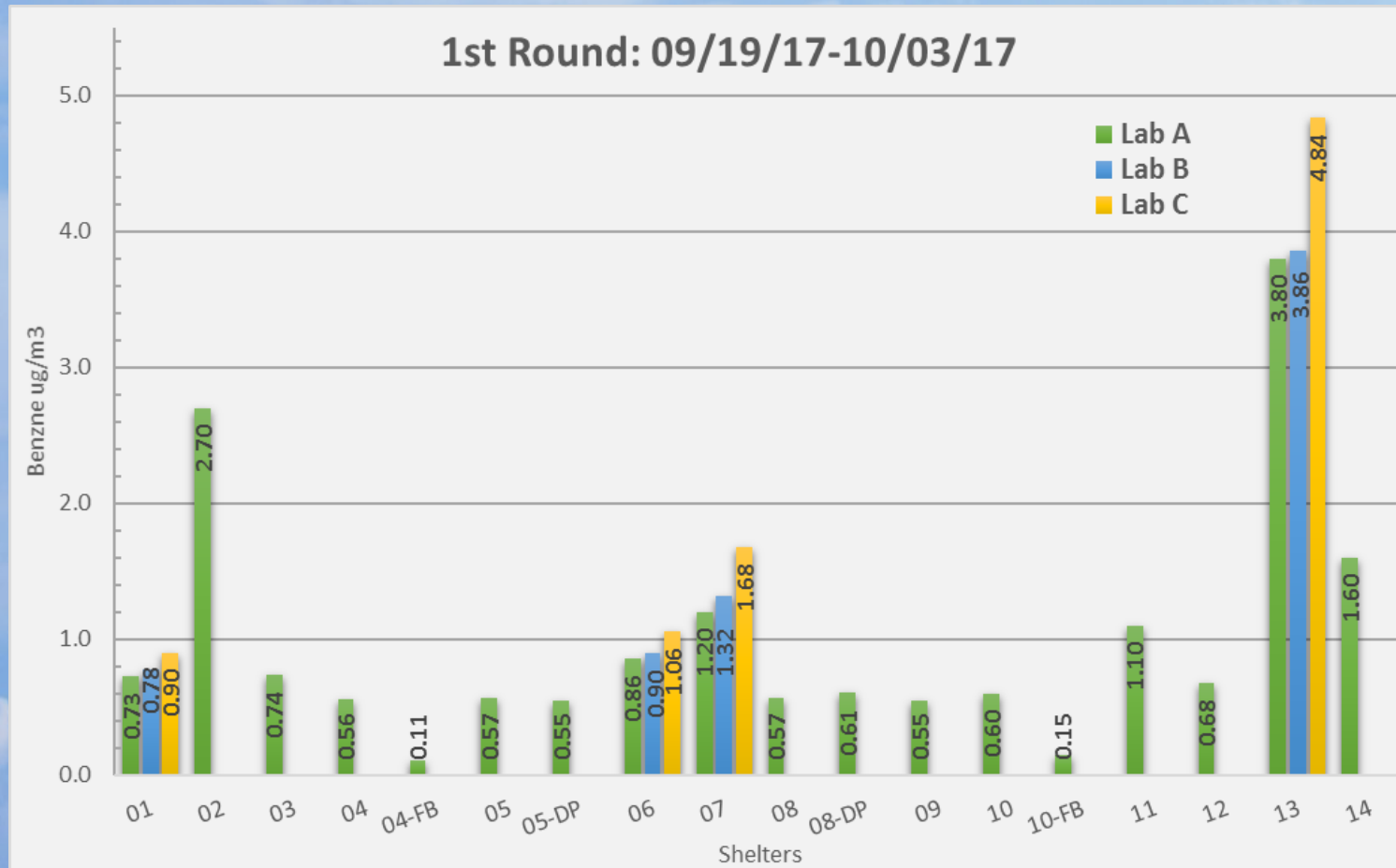


# Pilot Study: Refinery "X"





# Pilot Study: Lab Data



- Lab A: 126 Samples
  - Lab B: 28 Samples
  - Lab C: 16 Samples
- 170 Total Samples

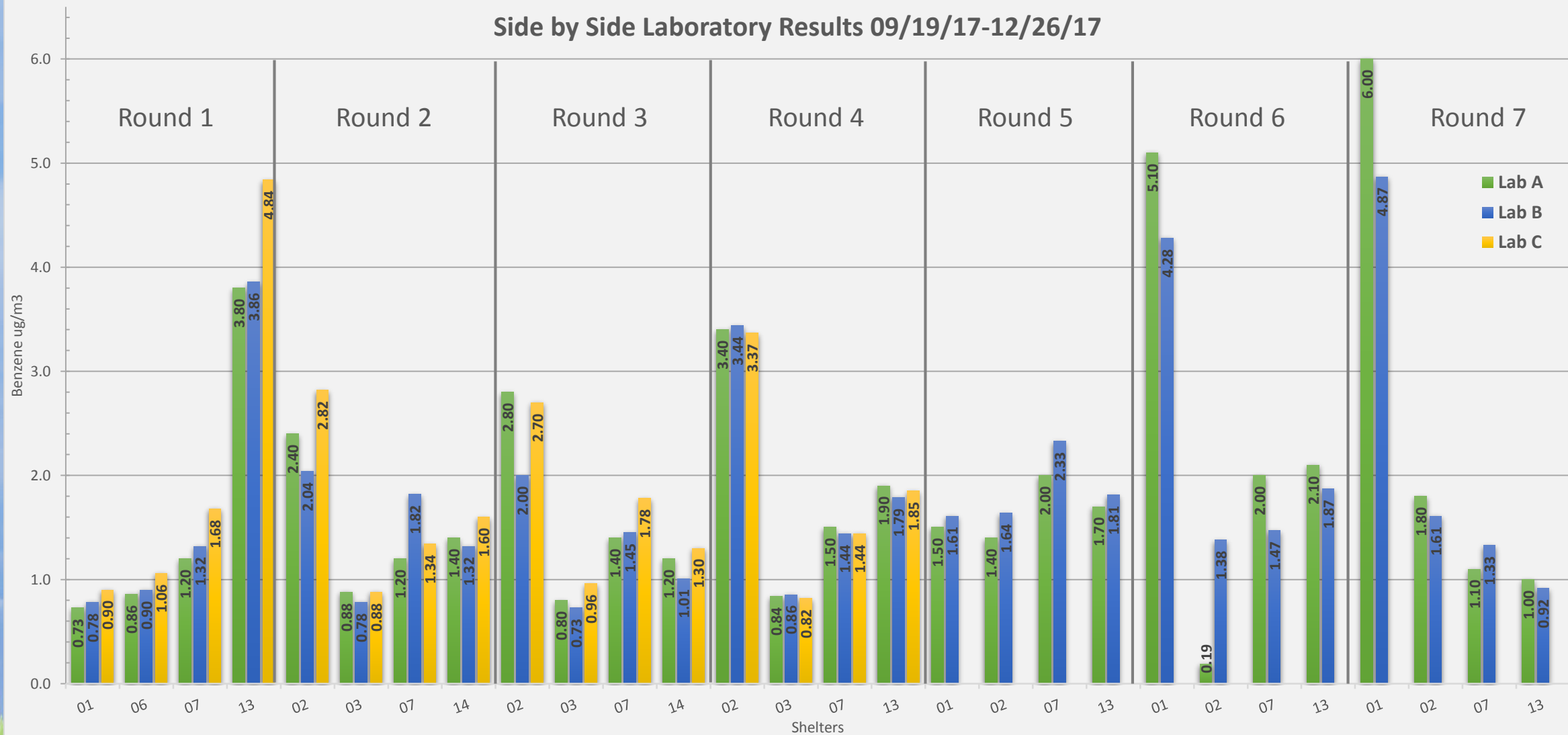
# Pilot Study: Lab Comparison

- Refiner analyzed results using Tukey-Kramer Method
  - All labs performed within acceptable level of one another
  - Lab A statistically most accurate
- Lab C closed after 4 sample periods
- Average report TAT varied



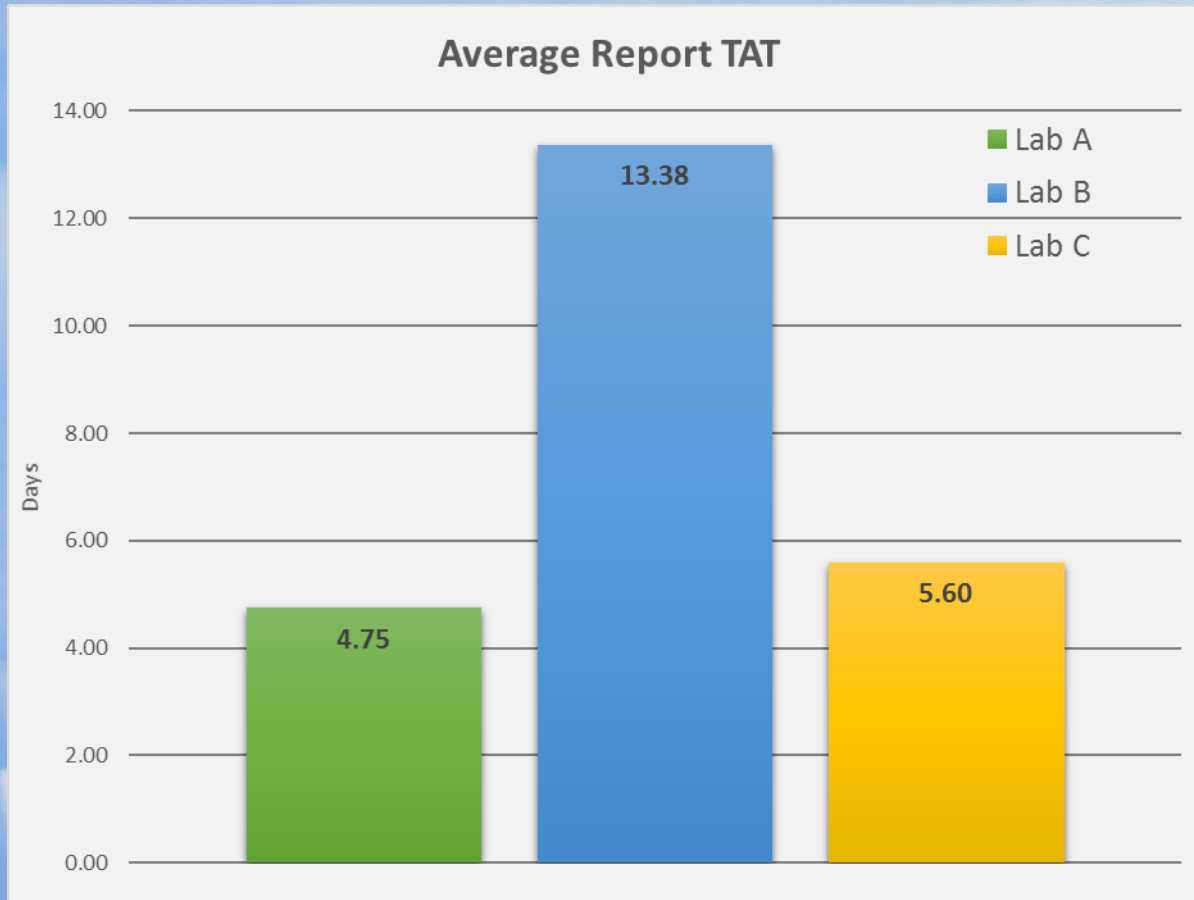
# Pilot Study: Lab Comparison

Side by Side Laboratory Results 09/19/17-12/26/17





# Pilot Study: Lab Comparison

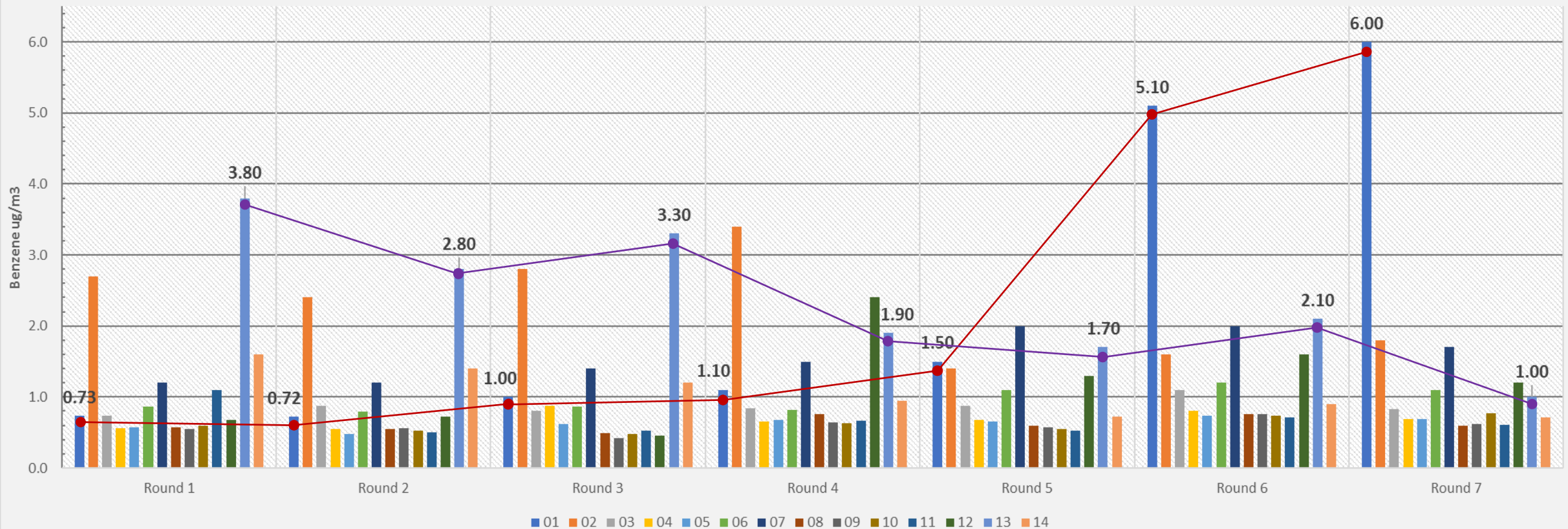


- Lab A: 18 Samples per round
- Lab B: 4 Samples per round
- Lab C: 4 Samples round



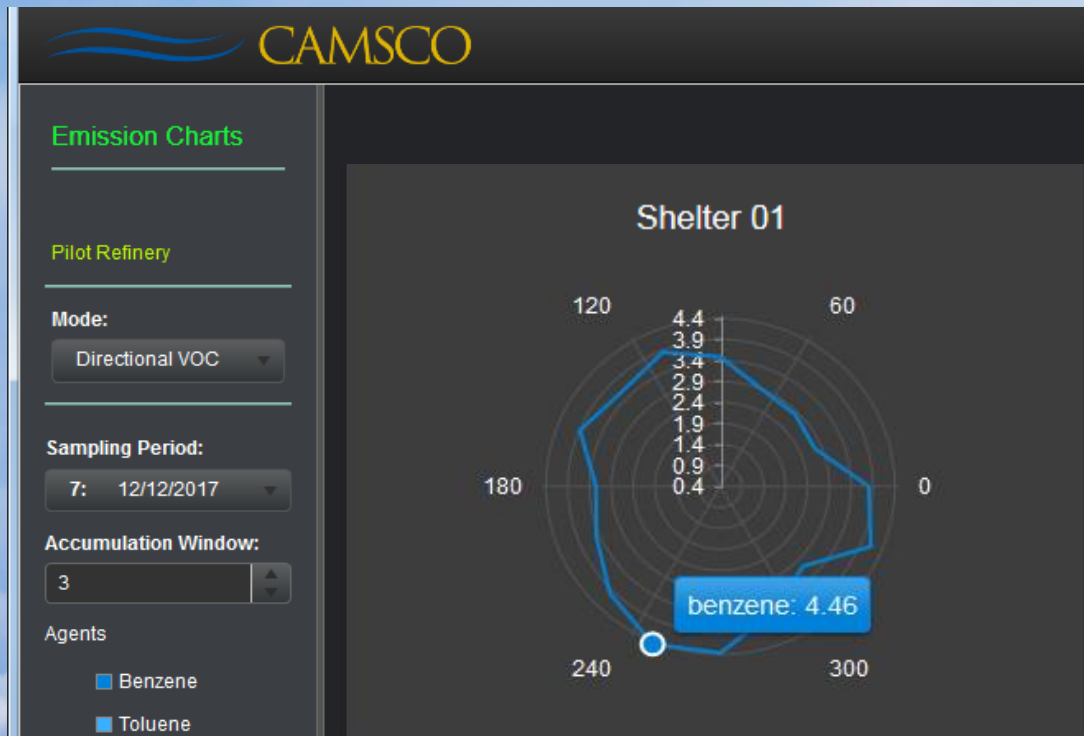
# Pilot Study: Data Trends

Lab A Data: 09/19/17-12/26/17





# Pilot Study: Data Trends



## Shelter 01 Data:

Round 5: 1.50  $\mu\text{g}/\text{m}^3$

Round 6: 5.10  $\mu\text{g}/\text{m}^3$

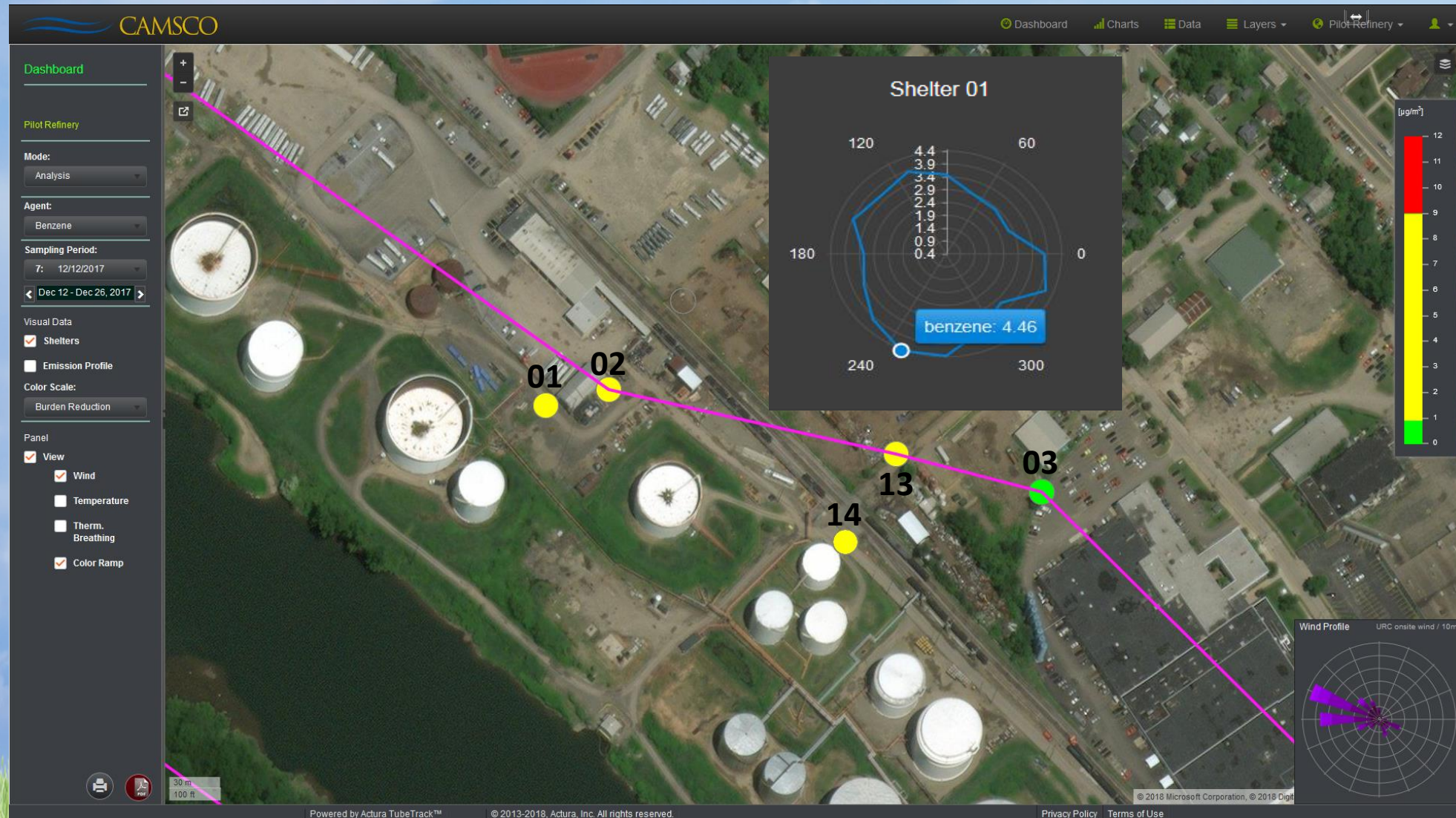
Round 7: 6.00  $\mu\text{g}/\text{m}^3$

Possible cause of Shelter 01  
Benzene Level Increase?

Directional VOC Accumulation Cycle 7



# Pilot Study: Data Trends

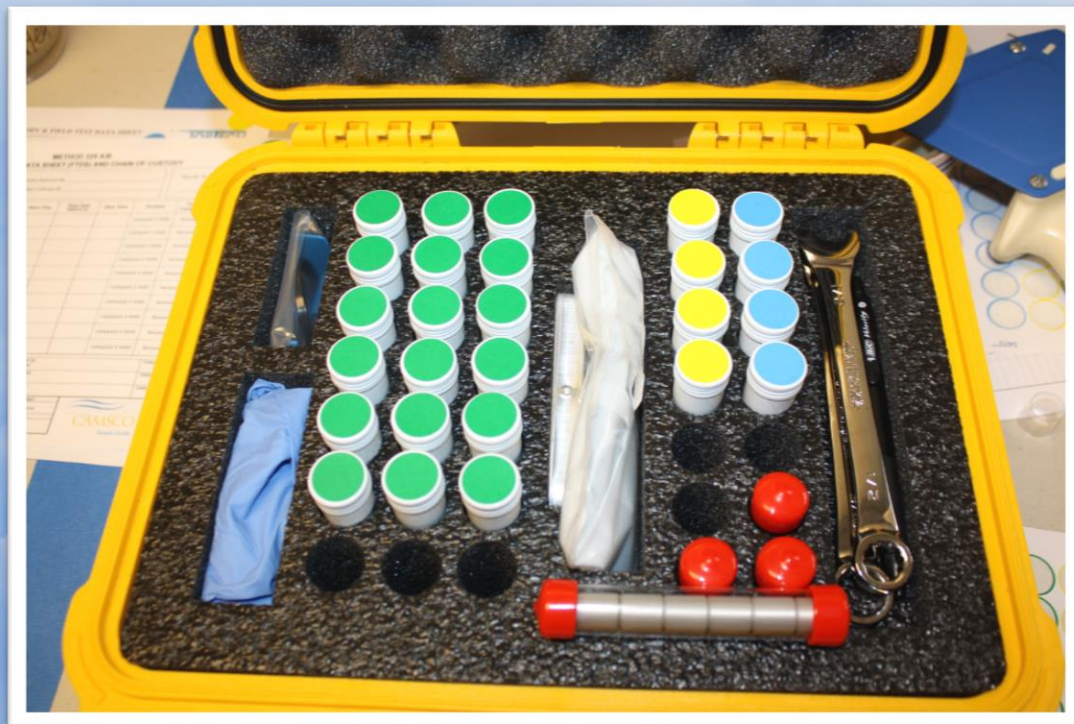




# Pilot Study: Obstacles & Solutions

Obstacle: Staying organized while using 3 labs

Solution: Color coding





# Pilot Study: Obstacles & Solutions

## Obstacle: Error-free Field Test Data Sheet

Tube Serial Number	Shelter Number	SA - Field Sample DP - Duplicate FB - Field Blank	Start Date (MM/DD/YR)	Start Time	Stop Date (MM/DD/YR)	Stop Time	Sorbent	Target Compound
<del>1099260</del>	<del>01</del>	<del>SA DP FB</del>	<del>10/03/17</del>	<del>10:06</del>			Carbopack X 40/60	Benzene
106798	03	SA DP FB	10/03/17	10:24	10/12/17	14:41	Carbopack X 40/60	Benzene
1067914	04	SA DP FB	10/3/17	10:29		14:12	Carbopack X 40/60	Benzene
1099084	05	SA DP FB	10/3/17	10:35		14:08	Carbopack X 40/60	Benzene
1099054	05	SA DP FB	10/3/17	10:36		14:08	Carbopack X 40/60	Benzene
1099045	14	SA DP FB	10/3/17	10:54		14:19	Carbopack X 40/60	Benzene
1099004	02	SA DP FB	10/3/17	11:01		14:25	Carbopack X 40/60	Benzene
1099094	01	SA DP FB	10/3/17	11:11		14:31	Carbopack X 40/60	Benzene
1099073	06	SA DP FB	10/3/17	11:24		14:31	Carbopack X 40/60	Benzene
		SA DP FB					Carbopack X 40/60	Benzene

**Met Data**

Average Temperature: \_\_\_\_\_

Units: °F °C

Average Barometric Pressure: \_\_\_\_\_

Units: hPa, inHg, mmHg, mb

**Special Notes/Instructions:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# Pilot Study: Obstacles & Solutions

Solution: Mobile Field Deployment & Collection



- Met Data, Time & Date Stamp collected automatically
- Information transmitted to Laboratory via 'the cloud'
- Laboratory downloads all Field Test Data Sheet information

Limited handwriting and data entry greatly reduces time spent and errors

# Questions?

6732 Mayard Road  
Houston, Texas 77041  
Phone +1 (713) 983-0800  
Fax +1 (713) 983-7200  
jmillier@camsco.com

[www.325Monitoring.com](http://www.325Monitoring.com)