

New York State Air Toxics Monitoring Network

Data Evaluation

MIT Air Toxics Symposium

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# A Comprehensive Network

- Gaseous Criteria Pollutants – 51 sites
- Acid Deposition – 21 sites
- Metals – TSP – 7 sites, PM-10 – 4 sites
- PM fine – 25 sites, 7 speciation
- Carbonyls – 9 sites
- Toxics (VOCs) – 14 sites
- Particle Identification – electron microscopy

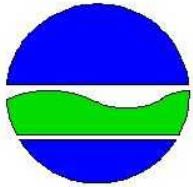
- **The objectives of the TAMs network are:**

1. Provide a consistent, high quality, long term database to define air quality for VOC's.
2. Measure Volatile Organic Compounds (VOCs) in industrial areas.
3. Measure VOCs in urban and suburban areas.
4. Measure VOC background concentrations in a rural area.
5. Track industry in their effort to reduce or control VOC emissions.
6. Track changes in the air quality in relation to the control of motor vehicle VOC emissions.

## VOCs Measured

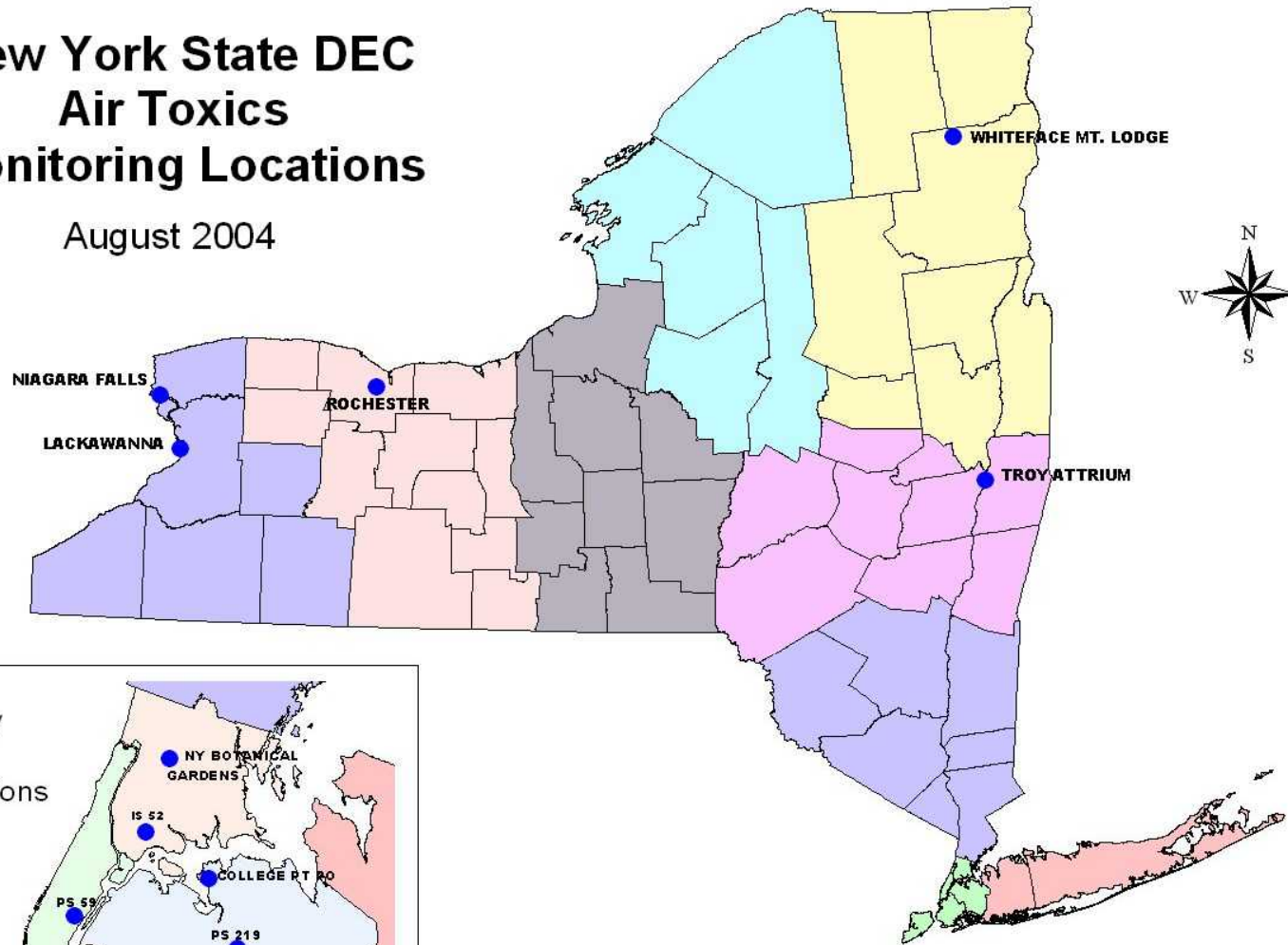
17 VOCs (1990-95), 19 VOCs (1995 – 98), 40 VOCs (1999 – Present)

Methylene Chloride	Toluene	1, 3 – Butadiene
Chloroform	Ethylbenzene	MTBE
1,2 Dichloroethane	M,P-Xylene	
1,1,1 Trichloroethane	o-Xylene	
Carbon Tetrachloride	Chlorobenzene	
Trichloroethylene	o-Dichlorobenzene	
1,1,2 Trichloroethane	m-Dichlorobenzene	
Tetrachloroethylene	P-Dichlorobenzene	
Benzene	Vinyl Chloride	
	1,2 Dichloropropane	

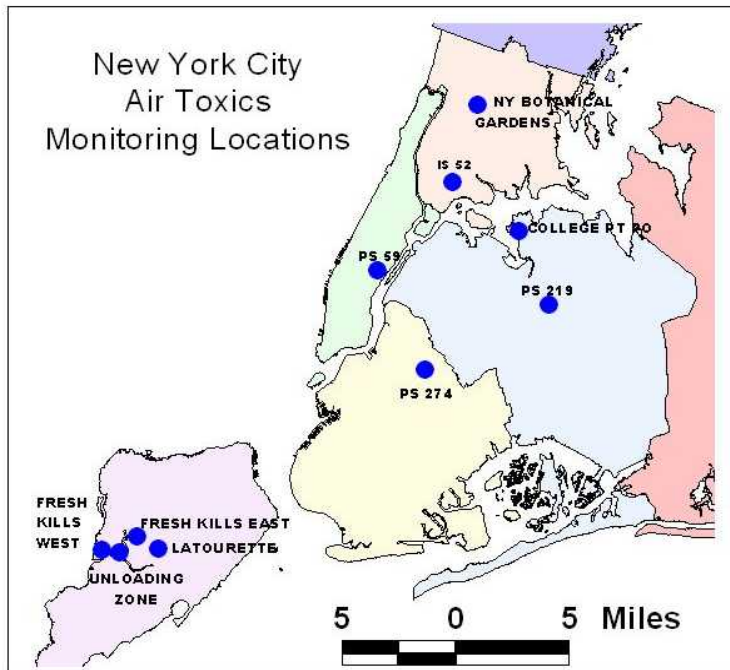


# New York State DEC Air Toxics Monitoring Locations

August 2004



## New York City Air Toxics Monitoring Locations



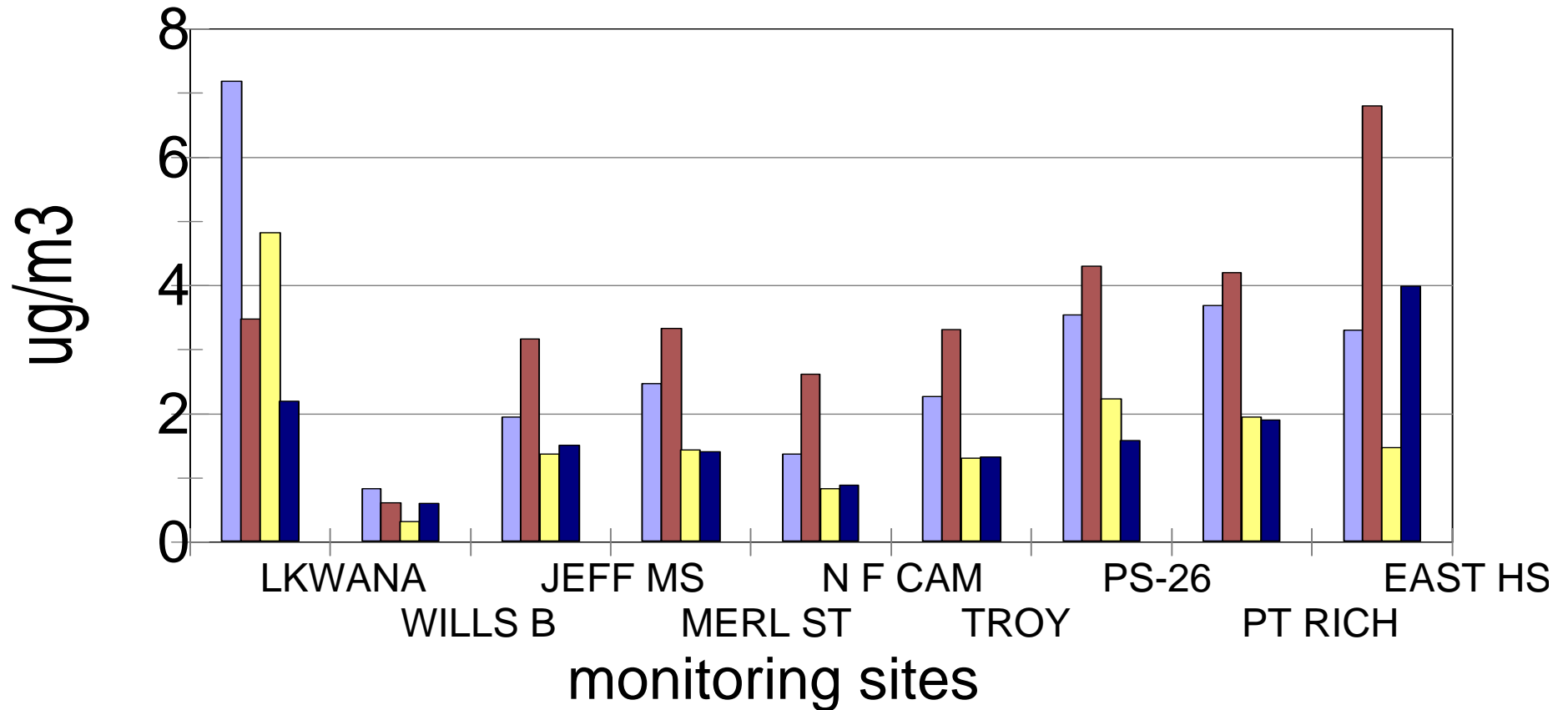


## Annual means of Benzene concentrations (ug/m<sup>3</sup>)

Year	Troy	Lackawanna	Niagara	Freshkills	EastHS/Brooklyn	Whiteface
1990	2.91		2.04		4.56	0.88
1991	2.96	11.35	2.04		4.14	1.08
1992	3.53	8.06	3.35		5.50	1.09
1993	3.41	4.62	2.57		3.40	0.98
1994	3.03	5.13	2.28		3.12	0.65
1995	2.52	3.70	3.03	1.67	2.89	2.31
1996	1.68	6.94	1.02	2.10	1.90	0.20
1997	1.97	5.75	1.18	1.72	1.89	0.47
1998	1.85	3.26			1.04	0.23
1999	2.14		1.08	1.64		0.81
2000	1.61	5.09	1.30	1.58		0.95
2001	1.81	4.42	1.36	3.60	2.46	0.76
2002	1.44	1.23	0.88	1.41	1.81	0.45

# Ambient Benzene Concentrations

NYS DEC AGC 0.13 ug/m<sup>3</sup>



1990-1

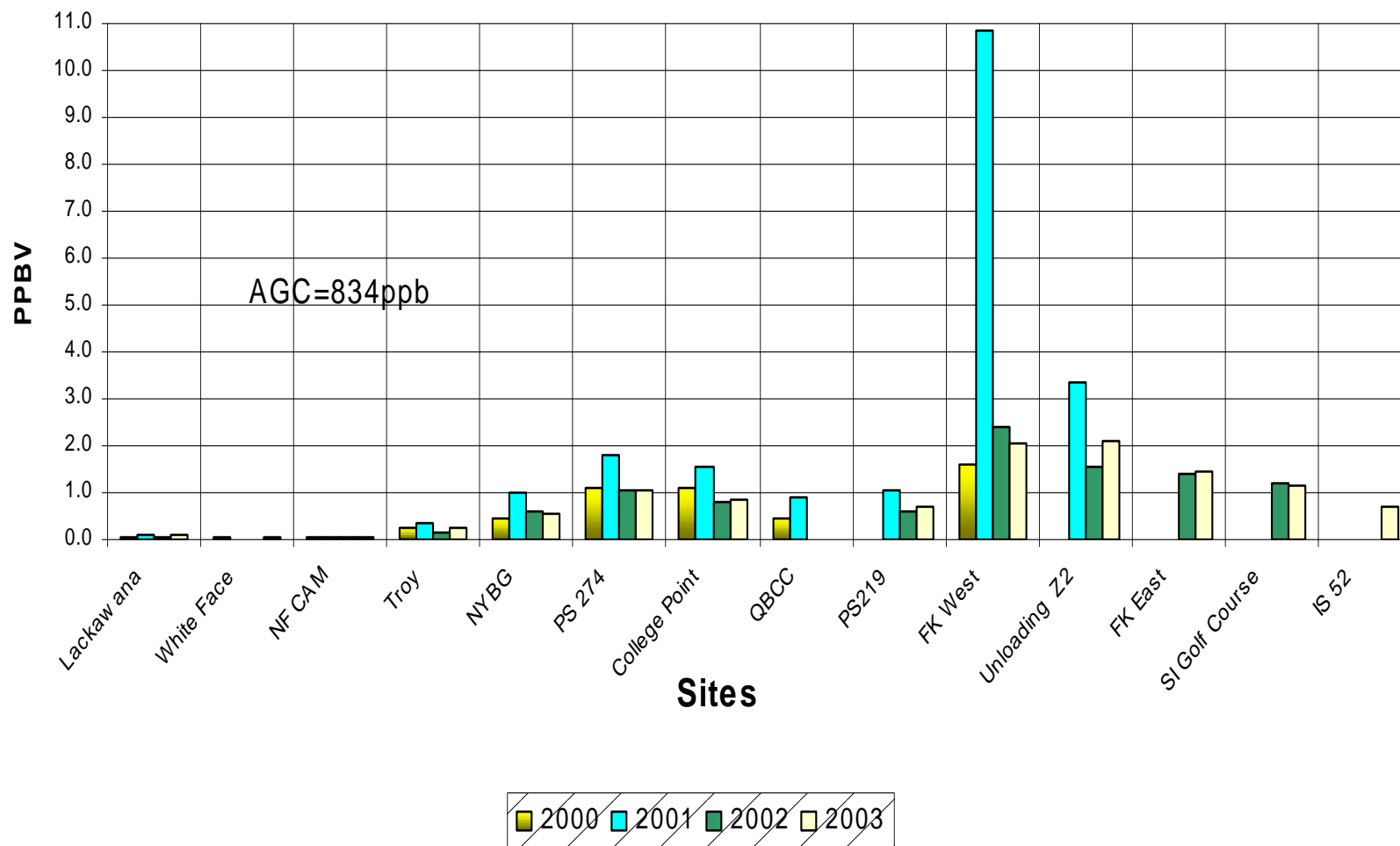
CEP

1996

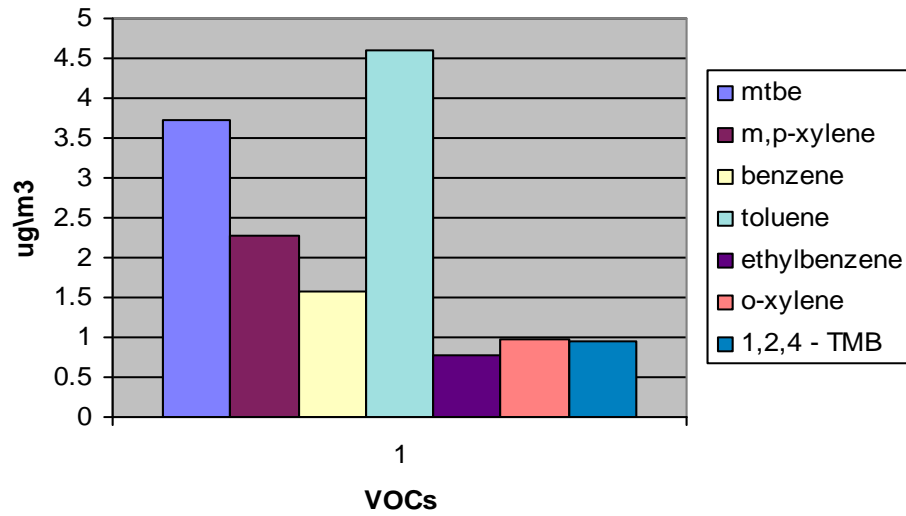
NSA 1996



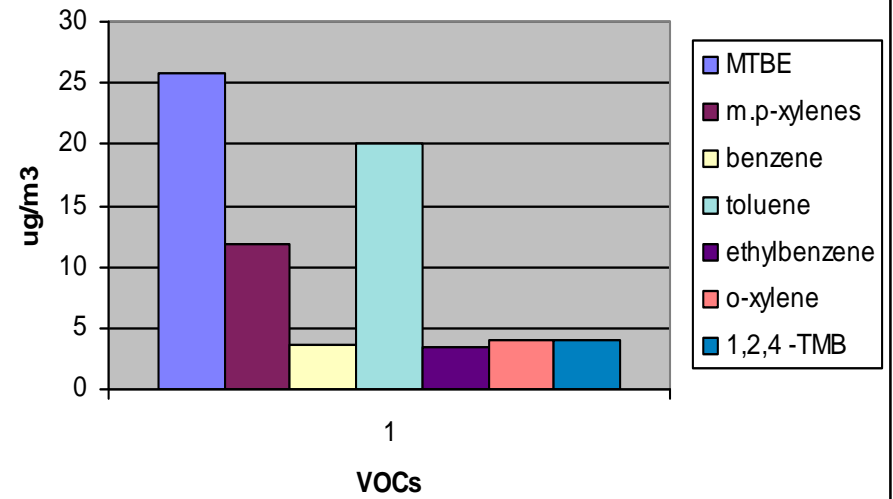
# Methyl Tert-Butyl Ether (MTBE) Annual Average



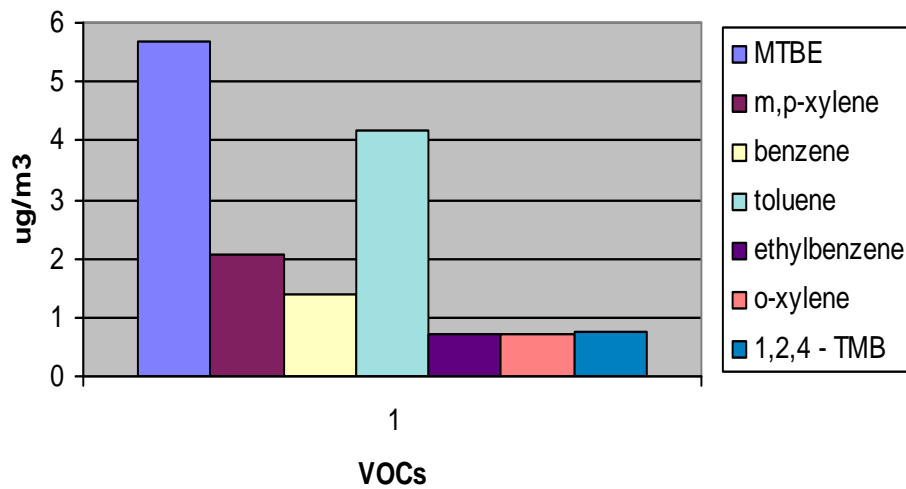
Freshkills West 2000



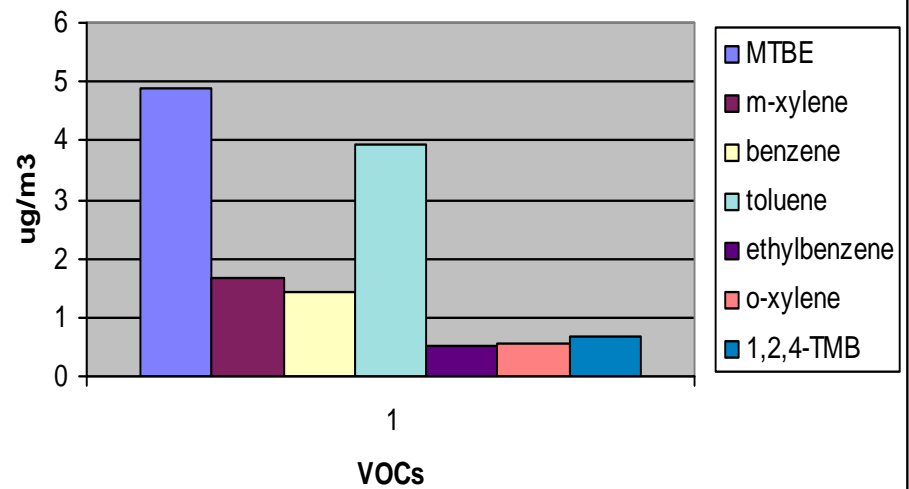
Freshkills West 2001



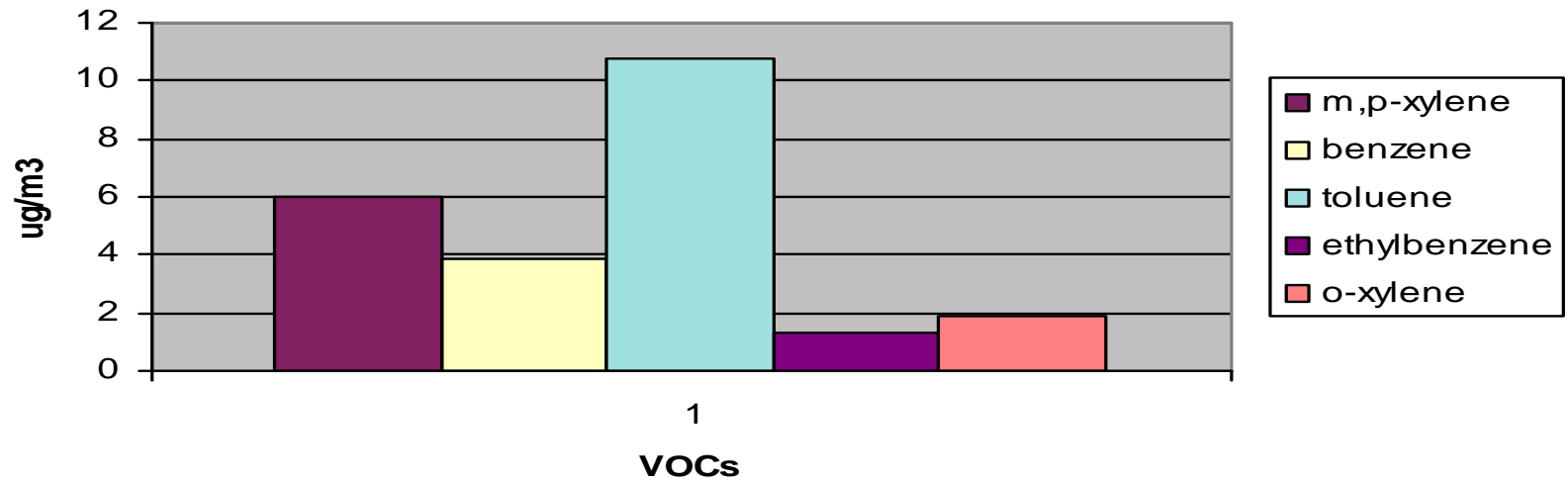
Freshkills West 2002



FreshKills West 2003



### Travis P.S.26 (1987-88)



### FreshKills West 2003

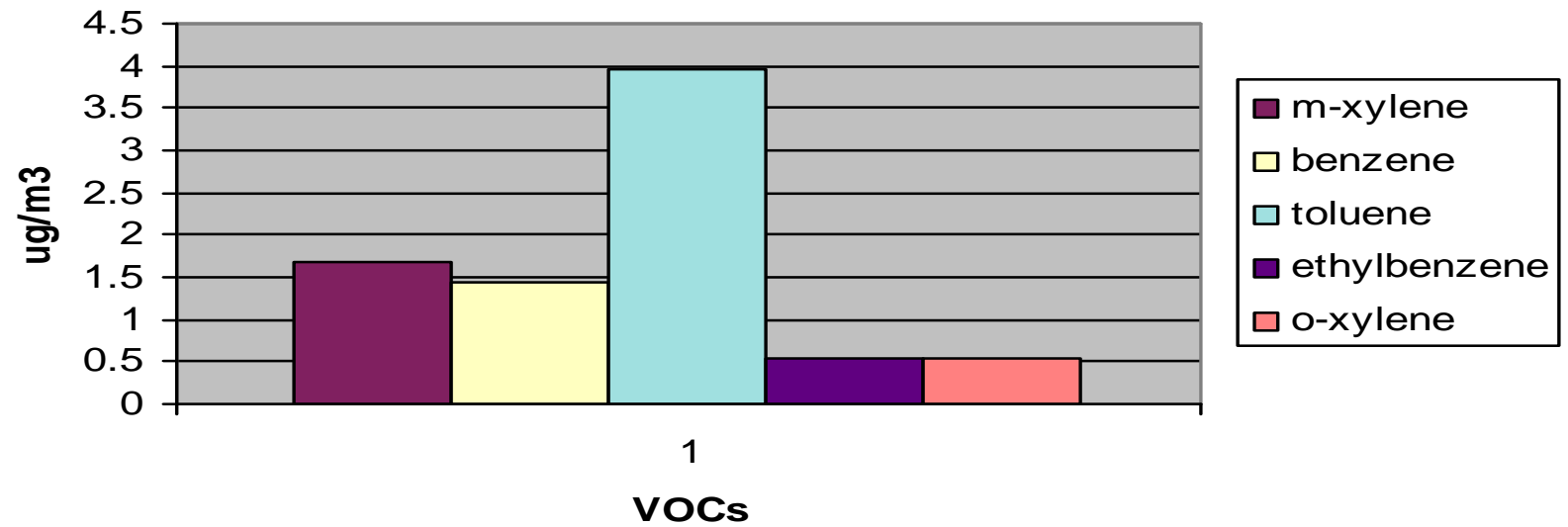


Table 1. Ambient Lead Monitoring Data and Pollution Control Events at RSR Corp. Wallkill

Year	Event	Monitor #	1/4 Pb Max.* (ug/m <sup>3</sup> )	24-hr. Max. ** (ug/m <sup>3</sup> ) (date)
1987	Pb NAAQS Violation	3566-02 Wallkill	1.61 (2 <sup>nd</sup> Qtr) 2.46 (3 <sup>rd</sup> Qtr) 1.44 (4 <sup>th</sup> Qtr)	6.10 (4/27) 5.43 (6/2) 13.69 (9/12)
1988	New bags installed (3/21/88) New bags/rebuilt cells, 5 <sup>th</sup> cell added (6/11/88)	3566-02 Wallkill	1.12 (1 <sup>st</sup> Qtr) 1.18 (2 <sup>nd</sup> Qtr) 0.93 (4 <sup>th</sup> Qtr)	3.49 (1/10) 4.38 (10/18) 5.29 (11/5)
1989	Consent order signed (9/26/89)	3566-02 Wallkill	1.02 (1 <sup>st</sup> Qtr) 1.36 (2 <sup>nd</sup> Qtr) 0.52 (3 <sup>rd</sup> Qtr)	4.16 (6/21) 3.56 (7/3) 6.06 (7/21)
1990	Two additional monitors sited (Feb./March)  New refinery baghouse installation complete on all process emission points (11/28/90)	3566-02 Wallkill  3566-09 Wallkill  3566-10 Wallkill	0.05 (1 <sup>st</sup> Qtr) 0.27 (2 <sup>nd</sup> Qtr) 0.09 (3 <sup>rd</sup> Qtr)  0.41 (1 <sup>st</sup> Qtr) 0.24 (2 <sup>nd</sup> Qtr) 0.14 (4 <sup>th</sup> Qtr)  0.04 (1 <sup>st</sup> Qtr) 0.04 (2 <sup>nd</sup> Qtr) 0.05 (3 <sup>rd</sup> Qtr)	0.36 (4/7) 0.49 (4/13) 1.61 (5/31)  2.61 (1/1) 0.62 (2/18) 1.38 (4/13)  0.19 (4/3) 0.16 (5/31) 0.09 (8/23)

Table 1. Ambient Lead Monitoring Data and Pollution Control Events at RSR Corp. Wallkill  
(continued)

1991	Some fugitive sources enclosed, baghouses installed (6/6/91)	3566-02 Wallkill	0.17 (1 <sup>st</sup> Qtr)	1.52 (4/24)
			0.23 (2 <sup>nd</sup> Qtr)	1.10 (9/9)
			0.28 (3 <sup>rd</sup> Qtr)	1.29 (9/15)
	General Ventilation emissions (workplace locations) from refinery ducted into baghouses (11/ 91)	3566-09 Wallkill	1.03 (1 <sup>st</sup> Qtr)	4.27 (2/11)
			0.55 (2 <sup>nd</sup> Qtr)	3.17 (3/19)
			0.59 (4 <sup>th</sup> Qtr)	3.21 (5/12)
		3566-10 Wallkill	0.07 (1 <sup>st</sup> Qtr)	0.38 (2/23)
			0.07 (2 <sup>nd</sup> Qtr)	0.29 (4/12)
			0.07 (4 <sup>th</sup> Qtr)	0.36 (4/24)
1992	Raw feed pile storage buildings totally enclosed (6/92)	3566-02 Wallkill	0.22 (1 <sup>st</sup> Qtr)	1.12 (2/6)
			0.20 (2 <sup>nd</sup> Qtr)	0.79 (2/12)
			0.22 (3 <sup>rd</sup> Qtr)	0.86 (7/23)
	Refinery building placed under negative pressure, open door alarms installed (8/92)	3566-09 Wallkill	0.93 (1 <sup>st</sup> Qtr)	2.95 (1/25)
			0.45 (2 <sup>nd</sup> Qtr)	4.18 (2/12)
			0.26 (4 <sup>th</sup> Qtr)	4.82 (4/6)
		3566-10 Wallkill	0.06 (1 <sup>st</sup> Qtr)	0.14 (1/13)
			0.04 (2 <sup>nd</sup> Qtr)	0.19 (2/12)
			0.05 (4 <sup>th</sup> Qtr)	0.20 (12/8)

Table 1. Ambient Lead Monitoring Data and Pollution Control Events at RSR Corp. Wallkill  
(continued)

1993		3566-02 Wallkill	0.05( 1 <sup>st</sup> Qtr) 0.27 (2 <sup>nd</sup> Qtr) 0.09 (3 <sup>rd</sup> Qtr)	0.36 (4/7) 0.49 (4/13) 1.61 (5/31)
		3566-09 Wallkill	0.41 (1 <sup>st</sup> Qtr) 0.24 (2 <sup>nd</sup> Qtr) 0.14 (3 <sup>rd</sup> Qtr)	2.61 (1/01) 0.62 (2/18) 1.38 (4/13)
		3566-10 Wallkill	0.04 (1 <sup>st</sup> Qtr) 0.05 (2 <sup>nd</sup> Qtr) 0.04 (3 <sup>rd</sup> Qtr)	0.19 (4/3) 0.16 (5/31) 0.09 (8/23)
1994	BACT Determination for facility accepted by NYSDEC per order of consent (9/94)	3566-02 Wallkill	0.06 (1 <sup>st</sup> Qtr) 0.05 (3 <sup>rd</sup> Qtr) 0.05 (4 <sup>th</sup> Qtr)	0.15 (3/21) 0.11 (4/26) 0.10 (8/24)
		3566-09 Wallkill	0.10 (1 <sup>st</sup> Qtr) 0.11 (2 <sup>nd</sup> Qtr) 0.07 (4 <sup>th</sup> Qtr)	0.27 (1/02) 0.33 (4/20) 0.23 (5/2)
		3566-10 Wallkill	0.04 (2 <sup>nd</sup> Qtr) 0.04 (3 <sup>rd</sup> Qtr) 0.04 (4 <sup>th</sup> Qtr)	0.09 (3/27) 0.09 (8/6) 0.12 (12/22)

\* - Three highest quarterly averages

\*\* - Three highest 24 hour values recorded per year







# DRAFT

## Summary Statistics for Seven Regulatory Time Periods - Perchloroethylene Drycleaners (NYSDOH)

<b>Time Period</b>	<b>Number of Facilities</b>	<b>Number of Samples</b>	<b>Range (ug/m3)</b>	<b>Geometric Mean (ug/m3)</b>
Pre-NESHAP	30	52	1.5 - 752,380	609.7
NESHAP	64	705	0.7 - 170,000	507.2
Part 232 (Phase 1) 5/15/97 - 11/14/97	37	142	5.0 - 11,500	150.5
Part 232 (Phase 2) 11/15/97 - 5/14/99	54	407	1.0 - 20,000	155.4
Part 232 (Phase 3) 5/15/99 - 12/24/99	36	181	5.0 - 11,000	251.6
Part 232 (Phase 4) 12/25/99 - 12/31/00	30	115	5.0 - 6,600	235.6
Part 232 (Phase 5) 1/1/01 - 8/5/03	57	556	1.8 - 7,000	98.1

# Conclusions

- There is a need for long term ambient air monitoring to evaluate trends over time.
- There is a need to provide checks on dispersion models with actual measurements. (source/receptor relationships)
- There is a need for special studies involving ambient and indoor monitoring.
- There is a need to evaluate overall regulatory effectiveness of your air toxics program from an exposure point of view.
- There is a need to use this information to inform the public and to assure protection of public health.