Table 2.1 Results of the Air Sampling Conducted by NYSDEC Region 9 Office in June 2005

Compound Name	Sample 1 on 6/21/05 (ppbv)	Sample 2 on 6/21/05 (ppbv)	Sample 1 on 6/23/05 (ppbv)	Sample 2 on 6/23/05 (ppbv)
Air Toxics List				
Propene	1.75	0.00	1.01	0.00
Dichlorodifluoromethane	0.45	0.55	0.47	0.41
Chloromethane	0.50	0.51	0.54	0.43
Dichlorotetrafluoroethane	0.00	0.00	0.02	0.01
Vinyl Chloride	0.00	0.00	0.00	0.00
1,3-Butadiene	0.09	0.00	0.11	0.00
Bromomethane	0.00	0.00	0.02	0.03
Chloroethane	0.00	0.00	0.00	0.00
Trichlorofluoromethane	0.20	0.23	0.22	0.22
Isopropyl alcohol[a]	0.00	0.00	0.00	0.00
1,1-Dichloroethylene	0.00	0.00	0.00	0.00
Dichloromethane	0.05	0.10	0.03	0.02
Carbon disulfide[a]	0.13	0.14	0.06	0.06
Trichlorotrifluoroethane	0.07	0.05	0.06	0.05
cis-1,2-Dichloroethylene	0.00	0.00	0.00	0.00
1,1-Dichloroethane	0.00	0.00	0.02	0.03
Methyl tert butyl ether	0.00	0.00	0.00	0.00
Vinyl acetate[a]	0.04	0.14	0.00	0.02
Methyl ethyl ketone[a]	0.27	0.55	0.00	0.00
trans-1,2-Dichloroethylene[a]	0.00	0.00	0.00	0.00
n-Hexane	0.06	0.09	0.52	0.06
Chloroform	0.02	0.03	0.00	0.03
Tetrahydrofuran[a]	0.00	0.05	0.00	0.00
1,2-Dichloroethane	0.00	0.00	0.03	0.03
1,1,1-Trichloroethane	0.02	0.03	0.04	0.04
Benzene	3.41	0.15	2.87	0.23
Carbon tetrachloride	0.09	0.10	0.10	0.10
Cyclohexane	0.00	0.04	0.07	0.03
1,2-Dichloropropane	0.00	0.00	0.00	0.00
Bromodichloromethane	0.01	0.00	0.00	0.03
Trichloroethylene	0.00	0.00	0.00	0.00
1,4-Dioxane[a]	0.00	0.00	0.00	0.00
n-Heptane	0.03	0.06	0.08	0.03
cis-1,3-Dichloropropylene	0.00	0.00	0.01	0.02
Methyl isobutyl ketone[a]	0.00	0.00	0.00	0.00

trans-1,3-Dichloropropylene	0.01	0.00	0.00	0.02
1,1,2-Trichloroethane	0.00	0.00	0.00	0.02
Toluene	0.46	0.22	0.89	0.11
Methyl n-butyl ketone[a]	0.00	0.00	0.00	0.00
Dibromochloromethane[a]	0.00	0.00	0.00	0.02
1,2-Dibromoethane	0.01	0.02	0.02	0.02
Tetrachloroethylene	0.02	0.03	0.02	0.03
Chlorobenzene	0.01	0.02	0.02	0.02
Ethylbenzene	0.04	0.05	0.07	0.03
m,p-Xylene	0.13	0.10	0.25	0.07
Tribromomethane[a]	0.00	0.00	0.00	0.00
Styrene	0.05	0.06	0.05	0.03
1,1,2,2-Tetrachloroethane	0.01	0.02	0.03	0.02
o-Xylene	0.07	0.07	0.11	0.04
p-Ethyl toluene[a]	0.02	0.04	0.04	0.03
1,3,5-Trimethylbenzene	0.02	0.03	0.04	0.02
1,2,4-Trimethylbenzene	0.05	0.06	0.10	0.04
aChlorotoluene	0.00	0.01	0.00	0.01
1,3-Dichlorobenzene	0.01	0.02	0.02	0.02
1,4-Dichlorobenzene	0.01	0.02	0.02	0.02
1,2-Dichlorobenzene	0.01	0.02	0.02	0.02
1,2,4-Trichlorobenzene	0.01	0.01	0.01	0.00
Hexachloro1,3-butadiene	0.01	0.02	0.01	0.03
Photochemical Target List				
Propene	1.65	0.00	1.33	0.00
Propane	1.18	0.00	0.95	0.34
Isobutane	0.15	0.15	3.56	0.14
1-Butene	0.06	0.23	1.03	0.00
n-Butane	0.34	0.40	8.30	0.21
t-2-Butene	0.02	0.00	0.93	0.00
c-2-Butene	0.02	0.02	0.70	0.01
isopentane	0.54	0.59	9.34	0.26
1-Pentene	0.03	0.04	0.43	0.01
Pentane	0.25	0.28	3.26	0.15
Isoprene	0.18	0.56	0.10	0.18
t-2-Pentene	0.02	0.02	0.90	0.01
c-2-Pentene	0.01	0.01	0.46	0.00
2,2-Dimethylbutane	0.02	0.03	0.30	0.00
Cyclopentane	0.02	0.01	0.23	0.00
2,3-Dimethylbutane	0.02	0.00	0.31	0.02

2-Methylpentane	0.07	0.08	1.13	0.04
3-Methylpentane	0.05	0.07	0.63	0.04
Hexene	0.01	0.02	0.06	0.00
n-Hexane	0.06	0.10	0.50	0.06
Methylcyclopentane	0.02	0.02	0.27	0.01
2,4-Dimethylpentane	0.01	0.02	0.06	0.01
Benzene	3.18	0.14	2.71	0.21
Cyclohexane	0.01	0.02	0.07	0.03
2-Methylhexane	0.01	0.00	0.12	0.00
2,3-Dimethylpentane	0.02	0.03	0.08	0.01
3-Methylhexane	0.02	0.03	0.12	0.01
2,2,4-Trimethylpentane	0.02	0.03	0.13	0.01
n-Heptane	0.03	0.05	0.08	0.03
Methylcyclohexane	0.02	0.02	0.05	0.01
2,3,4-Trimethylpentane	0.02	0.01	0.04	0.01
Toluene	0.44	0.20	0.86	0.10
2-Methylheptane	0.01	0.01	0.03	0.01
3-Methylheptane	0.00	0.02	0.02	0.01
Octane	0.01	0.01	0.02	0.01
Ethylbenzene	0.03	0.05	0.07	0.03
m,p-Xylene	0.15	0.12	0.27	0.07
Styrene	0.04	0.05	0.04	0.02
o-Xylene	0.06	0.06	0.10	0.04
Nonane	0.03	0.02	0.03	0.01
Isopropylbenzene	0.02	0.04	0.01	0.02
n-Propylbenzene	0.01	0.02	0.02	0.01
m-Ethyltoluene	0.01	0.02	0.04	0.01
p-Ethyltoluene	0.02	0.04	0.04	0.03
1,3,5-Trimethylbenzene	0.02	0.03	0.04	0.02
o-Ethyltoluene	0.01	0.02	0.03	0.01
1,2,4-Trimethylbenzene	0.04	0.06	0.09	0.04
Decane	0.02	0.02	0.04	0.01
1,2,3-Trimethylbenzene	0.01	0.02	0.02	0.01
1,3-Diethylbenzene	0.00	0.01	0.01	0.01
1,4-Diethylbenzene	0.01	0.01	0.01	0.00
undecane	0.01	0.00	0.03	0.00

[a] Indicates a compound this is not in current target list. Concentrations reported are estimated.

Table 3.1 Hazardous Air Pollutants Monitored in Tonawanda Study

CHEMICAL	112 k[a]	1996 NATA[b]	1999 NATA[b]	CAS #[c]
1,1,1 Trichloroethane			X	71-55-6
1,1,2 Trichloroethane			X	79-00-5
1,1,2,2 Tetrachloroethane	X	X	X	79-34-5
1,1-Dichloroethane				75-34-3
1,1-Dichloroethylene				75-35-4
1,2 Dichlorobenzene				95-50-1
1,2 Dichloroethane	X	X	X	107-06-2
1,2 Dichloropropane	X	X	X	78-87-5
1,2,4 Trichlorobenzene			X	120-82-1
1,2,4-Trimethylbenzene				95-63-6
1,2-Dibromoethane				106-93-4
1,3 Butadiene	X	X	X	106-99-0
1,3 Dichlorobenzene				541-73-1
1,3,5-Trimethylbenzene				108-67-8
1,4 Dichlorobenzene			X	106-46-7
2-Butanone			X	78-93-3
Acetaldehyde	X	X	X	75-07-0
Acetone				67-64-1
A-chlorotoluene (Benzylchloride)			X	100-44-7
Acrolein		X	X	107-02-8
Benzaldehyde				100-52-7
Benzene	X	X	X	71-43-2
Bromodichloromethane				75-27-4
Bromomethane				74-83-9
Carbon disulfide			X	75-15-0
Carbon tetrachloride	X	X	X	56-23-5
Chlorobenzene			X	108-90-7
Chloroethane				75-00-3
Chloroform	X	X	X	67-66-3
Chloromethane				74-87-3
cis 1,3-Dichloropropene	X	X	X	542-75-6
cis1,2-Dichloroethylene				156-59-2
Crotonaldehyde				4170-30-3
Dichlorodifluoromethane				75-71-8
Dichlorotetrafluoroethane				76-14-2
Ethylbenzene				100-41-4
Formaldehyde	X	X	X	50-00-0
Hexachloro-1,3-butadiene				87-68-3
Hexanal				66-25-1
m,p-Xylene			X	1330-20-7
Methacrolein				75-83-3
Methyl tert butyl ether			X	1634-04-4
Methylene chloride (Dichloromethane)	X	X	X	75-09-2
m-Tolualdehyde				620-23-5

n-Butyraldehyde				123-72-8
o-Xylene			X	95-47-6
Propionaldehyde				123-38-6
Styrene			X	100-42-5
Tetrachloroethylene	X	X	X	127-18-4
Toluene			X	108-88-3
trans 1,3-Dichloropropene	X	X	X	542-75-6
Trichloroethylene	X	X	X	79-01-6
Trichlorofluoromethane				75-69-4
Trichlorotrifluoroethane				76-13-1
Valeraldehyde				110-62-3
Vinyl Chloride	X	X	X	75-01-4

[a] X – indicates HAP is designated as priority urban HAP in Section 112(k) of the Clean Air Act

[b] X – indicates HAP was modeled in the designated USEPA National-scale Air Toxics Assessment

[c] CAS# - Chemical Abstract Number

Table 5.1 Sample Method, Analysis Method, Frequency of Sampling and Site Locations by Parameter

Parameter	Sample Method or Instrument	Analysis Method	Frequency of Sampling	Site Locations
Volatile organic compounds	Canister	TO-15	1 in 6 days	BISP, BTRS, GIBI, SPWT
Carbonyls	Cartridge	TO-11a	1 in 6 days	BISP, BTRS, GIBI, SPWT
Fine particulate matter ($PM_{2.5}$)	Tapered Element Oscillating Microbalance (TEOM)	*None* – direct read instrumentation	Real-time (hourly average reported)	BISP, BTRS, GIBI, SPWT
Sulfur dioxide (SO_2)	Thermo Electron Model 43C	*None* – direct read instrumentation	Real-time (hourly average reported)	BTRS
Carbon monoxide (CO)	Thermo Electron Model 48C	*None* – direct read instrumentation	Real-time (hourly average reported)	BTRS
Meteorological parameters	Met One Wind Sensor	*None* – direct read instrumentation	Real-time (hourly average reported)	BISP

Table 5.2 Study VOCs, MDL, AGC, CAS# and Priority Urban HAP Designation

Chemical	MDL[a] (ppbv)	AGC (ppbv)	CAS#	112(k)[b]
1,1,1-Trichloroethane	0.024	183	71-55-6	
1,1,2,2-Tetrachloroethane	0.03	2.0	79-34-5	X
1,1,2-Trichloroethane	0.03	0.26	79-00-5	
1,1-Dichloroethane	0.02	0.15	75-34-3	
1,1-Dichloroethylene	0.02	18	75-35-4	
1,2,4-Trichlorobenzene	0.034	NA	120-82-1	
1,2,4-Trimethylbenzene	0.05	59	95-63-6	
1,2-Dibromoethane	0.03	0.0007	106-93-4	
1,2-Dichlorobenzene	0.03	60	95-50-1	
1,2-Dichloroethane	0.03	0.01	107-06-2	X
1,2-Dichloropropane	0.03	0.87	78-87-5	X
1,3,5-Trimethylbenzene	0.05	59	108-67-8	
1,3-Butadiene	0.04	0.01	106-99-0	X
1,3-Dichlorobenzene	0.03	60	541-73-1	
1,4-Dichlorobenzene	0.04	0.015	106-46-7	
a-Chlorotoluene (Benzylchloride)	0.04	0.004	100-44-7	
Acrolein	0.03	0.008	107-02-8	X
Benzene	0.03	0.04	71-43-2	X
Bromodichloromethane	0.024	0.003	75-27-4	
Bromomethane	0.03	1.29	74-83-9	
Carbon disulfide	0.03	225	75-15-0	
Carbon tetrachloride	0.03	0.01	56-23-5	X
Chlorobenzene	0.03	24	108-90-7	
Chloroethane	0.06	3790	75-00-3	
Chloroform	0.024	0.009	67-66-3	X
Chloromethane	0.025	44	74-87-3	
cis 1,3-Dichloropropene	0.03	0.04	542-75-6	
cis1,2-Dichloroethylene	0.03	16	156-59-2	
Dichlorodifluoromethane	0.024	2427	75-71-8	
Dichlorotetrafluoroethane	0.04	2432	76-14-2	
Ethylbenzene	0.06	230	100-41-4	
Hexachloro-1,3-butadiene	0.024	0.005	87-68-3	
m,p-Xylene	0.06	23	1330-20-7	
Methyl tert butyl ether	0.03	834	1634-04-4	
Methylene chloride (dichloromethane)	0.02	0.61	75-09-2	X
o-Xylene	0.04	23	95-47-6	
Styrene	0.1	235	100-42-5	
Tetrachloroethylene	0.025	0.15	127-18-4	X
Toluene	0.035	1326	108-88-3	
trans 1,3-Dichloropropene	0.04	0.04	542-75-6	
Trichloroethylene	0.025	0.08	79-01-6	X
Trichlorofluoromethane	0.03	178	75-69-4	

Chemical	MDL[a] (ppbv)	AGC (ppbv)	CAS#	112(k)[b]
Trichlorotrifluoroethane	0.02	23488	76-13-1	
Vinyl chloride	0.05	0.04	75-01-4	X

[a] Compounds with AGC's below the MDL have received special attention to attempt to further reduce the MDL. However, the extremely small AGC values of these compounds are beyond the capabilities of the canister based GC/MS methodology.
[b] Compound is designated a priority urban HAP in Section 112(k) of the Clean Air Act.
ppbv = parts per billion volume
NA – An AGC has not been derived by NYSDEC at the time of this report.

Table 5.3 Study Carbonyls, MDL, AGC, CAS# and Priority Urban HAP Designation

Chemical	MDL (ppbv)	AGC (ppbv)	CAS#	112(k)[a]
2-Butanone (MEK)	0.009	1700	78-93-3	X
Acetaldehyde	0.004	0.25	75-07-0	X
Benzaldehyde [b]	0.004	2.1	100-52-7	
Crotonaldehyde	0.009	NA	4170-30-3	
Formaldehyde	0.007	0.05	50-00-0	X
Hexanal [b]	0.008	4.9	66-25-1	
Methacrolein	0.005	NA	75-85-3	
m-Tolualdehyde	0.003	NA	620-23-5	
n-Butyraldehyde [b]	0.007	5.1	123-72-8	
Propionaldehyde	0.004	46	123-38-6	
Valeraldehyde	0.011	120	110-62-3	

[a] Compound is designated as priority urban HAP in Section 112(k) of the Clean Air Act
[b] NYSDEC staff developed an interim AGC for this study
ppbv = parts per billion volume
NA – An AGC has not been derived by NYSDEC at the time of this report.

Table 7.1 Summary of the Suitability of the Air Toxics for Assessing Risks

	Category A Low Confidence		Category B Moderate Confidence	Category C High Confidence
	Category A1	**Category A2**		
BISP	1,2,4-trichlorobenzene	1,1,1-trichloroethane	2-Butanone	Acetaldehyde
	1,2-dibromoethane	1,1,2,2-tetrachloroethane	Hexanal	Acetone
	1,2-dichloroethane	1,1,2-trichloroethane	Propionaldehyde	acrolein
	1,3-butadiene	1,1-dichloroethane		Benzene
	1,4-dichlorobenzene	1,1-dichloroethylene		Carbon disulfide
	aChlorotoluene	1,2,4-trimethylbenzene		Carbon tetrachloride
	Benzaldehyde	1,2-dichlorobenzene		Chloromethane
	Bromodichloromethane	1,2-dichloroethylene		Dichlorodifluoromethane
	Chloroform	1,2-dichloropropane		Dichloromethane
	cis1,3-dichloropropylene	1,3,5-trimethylbenzene		Formaldehyde
	Crotonaldehyde	1,3-dichlorobenzene		Toluene
	Hexachloro1,3-butadiene	Bromomethane		Trichlorofluoromethane
	Methacrolein	Chlorobenzene		Trichlorotrifluoroethane
	Methyl tert butyl ether	Chloroethane		
	n-Butyraldehyde	Dichlorotetrafluoroethane		
	trans1,3-dichloropropylene	Ethylbenzene		
	Vinyl chloride	m,p-xylene		
		m-Tolualdehyde		
		o-xylene		
		Styrene		
		Tetrachloroethylene		
		Trichloroethylene		
		Valeraldehyde		
BTRS	1,2,4-trichlorobenzene	1,1,1-trichloroethane	1,3-butadiene	Acetaldehyde
	1,2-dibromoethane	1,1,2,2-tetrachloroethane	2-Butanone	Acetone
	1,2-dichloroethane	1,1,2-trichloroethane	Hexanal	acrolein
	1,4-dichlorobenzene	1,1-dichloroethane	m,p-xylene	Benzene

	Category A Low Confidence		Category B Moderate Confidence	Category C High Confidence
	Category A1	Category A2		
	aChlorotoluene	1,1-dichloroethylene	n-Butyraldehyde	Carbon disulfide
	Benzaldehyde	1,2,4-trimethylbenzene	o-xylene	Carbon tetrachloride
	Bromodichloromethane	1,2-dichlorobenzene	Propionaldehyde	Chloromethane
	Chloroform	1,2-dichloroethylene	1,3-butadiene	Dichlorodifluoromethane
	cis1,3-dichloropropylene	1,2-dichloropropane	2-Butanone	Dichloromethane
	Crotonaldehyde	1,3,5-trimethylbenzene	Hexanal	Formaldehyde
	Hexachloro1,3-butadiene	1,3-dichlorobenzene	m,p-xylene	Toluene
	Methacrolein	Bromomethane	n-Butyraldehyde	Trichlorofluoromethane
	Methyl tert butyl ether	Chlorobenzene	o-xylene	Trichlorotrifluoroethane
	trans1,3-dichloropropylene	Chloroethane	Propionaldehyde	
	Vinyl chloride	Dichlorotetrafluoroethane		
		Ethylbenzene		
		m-Tolualdehyde		
		Styrene		
		Tetrachloroethylene		
		Trichloroethylene		
GIBI	1,2,4-trichlorobenzene	1,1,1-trichloroethane	1,2,4-trimethylbenzene	Acetaldehyde
	1,2-dibromoethane	1,1,2,2-tetrachloroethane	1,3-butadiene	Acetone
	1,2-dichloroethane	1,1,2-trichloroethane	2-Butanone	acrolein
	1,4-dichlorobenzene	1,1-dichloroethane	Benzaldehyde	Benzene
	aChlorotoluene	1,1-dichloroethylene	Ethylbenzene	Carbon disulfide
	Bromodichloromethane	1,2-dichlorobenzene	Hexanal	Carbon tetrachloride
	Chloroform	1,2-dichloroethylene	n-Butyraldehyde	Chloromethane
	cis1,3-dichloropropylene	1,2-dichloropropane	Propionaldehyde	Dichlorodifluoromethane
	Crotonaldehyde	1,3,5-trimethylbenzene	Valeraldehyde	Dichloromethane
	Hexachloro1,3-butadiene	1,3-dichlorobenzene		Formaldehyde
	Methacrolein	Bromomethane		m,p-xylene
	Methyl tert butyl ether	Chlorobenzene		o-xylene

	Category A Low Confidence		Category B Moderate Confidence	Category C High Confidence
	Category A1	Category A2		
	trans1,3-dichloropropylene	Chloroethane		Toluene
	Vinyl chloride	Dichlorotetrafluoroethane		Trichlorofluoromethane
		m-Tolualdehyde		Trichlorotrifluoroethane
		Styrene		
		Tetrachloroethylene		
		Trichloroethylene		
SPWT	1,2,4-trichlorobenzene	1,1,1-trichloroethane	1,2,4-trimethylbenzene	Acetaldehyde
	1,2-dibromoethane	1,1,2,2-tetrachloroethane	2-Butanone	Acetone
	1,2-dichloroethane	1,1,2-trichloroethane	n-Butyraldehyde	acrolein
	1,3-butadiene	1,1-dichloroethane		Benzene
	1,4-dichlorobenzene	1,1-dichloroethylene		Carbon disulfide
	aChlorotoluene	1,2-dichlorobenzene		Carbon tetrachloride
	Benzaldehyde	1,2-dichloroethylene		Chloromethane
	Bromodichloromethane	1,2-dichloropropane		Dichlorodifluoromethane
	Chloroform	1,3,5-trimethylbenzene		Dichloromethane
	cis1,3-dichloropropylene	1,3-dichlorobenzene		Formaldehyde
	Crotonaldehyde	Bromomethane		m,p-xylene
	Hexachloro1,3-butadiene	Chlorobenzene		o-xylene
	Hexanal	Chloroethane		Propionaldehyde
	Methacrolein	Dichlorotetrafluoroethane		Toluene
	Methyl tert butyl ether	Ethylbenzene		Trichlorofluoromethane
	trans1,3-dichloropropylene	m-Tolualdehyde		Trichlorotrifluoroethane
	Vinyl chloride	Styrene		
		Tetrachloroethylene		
		Trichloroethylene		
		Valeraldehyde		

Table 7.2 Summary of Air Toxic Concentrations for Category B[a]

Category B					
Chemical	**Mean** ($\mu g/m^3$)	**25th Percentile** ($\mu g/m^3$)	**Median** ($\mu g/m^3$)	**75th Percentile** ($\mu g/m^3$)	**Coefficient of Variation**
BISP					
2-Butanone	0.39	0.19	0.34	0.55	0.73
Hexanal	0.16	0.045	0.14	0.24	0.87
Propionaldehyde	0.15	0.090	0.13	0.19	0.57
BTRS					
1,3-butadiene	0.088	0.049	0.066	0.10	0.76
2-Butanone	0.40	0.21	0.37	0.55	0.64
Hexanal	0.15	0	0.070	0.16	1.6
m,p-xylene	0.87	0.40	0.76	1.0	0.7
n-Butyraldehyde	0.081	0.032	0.056	0.10	1.0
o-xylene	0.34	0.15	0.30	0.37	0.6
Propionaldehyde	0.18	0.10	0.16	0.23	0.72
GIBI					
1,2,4-trimethylbenzene	0.33	0.17	0.29	0.43	0.62
1,3-butadiene	0.24	0.066	0.12	0.31	1.2
2-Butanone	0.37	0.24	0.33	0.46	0.63
Benzaldehyde	0.38	0.18	0.30	0.51	0.84
Ethylbenzene	0.50	0.17	0.33	0.54	1.0
Hexanal	0.35	0.033	0.12	0.57	1.3
n-Butyraldehyde	0.16	0.029	0.071	0.28	1.0
Propionaldehyde	0.21	0.093	0.18	0.29	0.78
Valeraldehyde	0.12	0.039	0.099	0.16	0.99
SPWT					
1,2,4-trimethylbenzene	0.31	0.19	0.28	0.34	0.63
2-Butanone	0.40	0.21	0.40	0.55	0.58
n-Butyraldehyde	0.063	0.032	0.053	0.094	0.74

[a] For this category of air toxics, the potential health risk will be estimated and reported in Subsection 7.2.2

Table 7.3 Summary of Air Toxic Concentrations for Category C

Category C					
Chemical	**Mean** ($\mu g/m^3$)	**25th Percentile** ($\mu g/m^3$)	**Median** ($\mu g/m^3$)	**75th Percentile** ($\mu g/m^3$)	**Coefficient of Variation**
BISP					
Acetaldehyde	0.90	0.67	0.78	1.0	0.42
Acrolein	0.32	0.24	0.30	0.40	0.35
Benzene	1.2	0.45	0.71	1.4	1.2
Carbon disulfide	0.77	0.090	0.14	0.54	3.0
Carbon tetrachloride	0.70	0.65	0.70	0.74	0.080
Chloromethane	1.1	0.99	1.1	1.1	0.26
Dichlorodifluoromethane	2.6	2.6	2.6	2.7	0.050
Dichloromethane	0.34	0.12	0.26	0.49	0.73
Formaldehyde	2.5	1.3	2.1	3.4	0.57
Toluene	1.3	0.60	0.92	1.6	0.77
Trichlorofluoromethane	1.0	0.72	0.79	1.4	0.35
Trichlorotrifluoroethane	0.74	0.61	0.66	0.95	0.24
BTRS					
Acetaldehyde	1.1	0.74	0.93	1.2	0.47
Acrolein	0.33	0.25	0.30	0.40	0.38
Benzene	2.0	0.91	1.2	2.0	0.98
Carbon disulfide	0.96	0.12	0.47	1.4	1.2
Carbon tetrachloride	0.69	0.65	0.67	0.74	0.077
Chloromethane	1.0	0.94	0.99	1.1	0.10
Dichlorodifluoromethane	2.6	2.5	2.6	2.7	0.053
Dichloromethane	0.36	0.11	0.22	0.45	1.1
Formaldehyde	2.3	1.2	1.7	2.3	0.97
Toluene	2.1	0.99	1.7	2.8	0.65
Trichlorofluoromethane	1.0	0.73	0.80	1.4	0.35
Trichlorotrifluoroethane	0.67	0.61	0.62	0.67	0.22
GIBI					
Acetaldehyde	1.3	0.80	1.2	1.8	0.53
Acrolein	0.43	0.29	0.39	0.56	0.45
Benzene	9.8	1.3	4.5	13	1.3
Carbon disulfide	1.1	0.18	0.32	1.2	1.5
Carbon tetrachloride	0.68	0.64	0.67	0.72	0.081
Chloromethane	1.0	0.94	1.0	1.1	0.083
Dichlorodifluoromethane	2.6	2.5	2.6	2.7	0.043
Dichloromethane	0.19	0.097	0.13	0.25	0.68
Formaldehyde	5.9	1.2	2.4	10	0.97
m,p-xylene	1.8	0.72	1.1	2.0	0.90
o-xylene	0.60	0.26	0.43	0.69	0.83

Category C					
Chemical	**Mean** ($\mu g/m^3$)	**25th Percentile** ($\mu g/m^3$)	**Median** ($\mu g/m^3$)	**75th Percentile** ($\mu g/m^3$)	**Coefficient of Variation**
Toluene	3.1	1.7	2.7	3.8	0.66
Trichlorofluoromethane	1.0	0.74	0.80	1.4	0.35
Trichlorotrifluoroethane	0.64	0.61	0.63	0.67	0.13
SPWT					
Acetaldehyde	1.0	0.77	0.94	1.2	0.40
Acrolein	0.34	0.26	0.32	0.41	0.35
Benzene	1.3	0.78	1.0	1.4	1.2
Carbon disulfide	1.9	0.22	0.92	2.8	1.3
Carbon tetrachloride	0.69	0.65	0.68	0.74	0.083
Chloromethane	1.0	0.93	0.98	1.1	0.084
Dichlorodifluoromethane	2.6	2.5	2.6	2.7	0.052
Dichloromethane	0.23	0.11	0.16	0.27	1.4
Formaldehyde	1.9	1.2	1.8	2.4	0.44
m,p-xylene	0.88	0.56	0.72	0.99	0.63
o-xylene	0.34	0.21	0.29	0.40	0.61
Propionaldehyde	0.20	0.12	0.18	0.24	0.76
Toluene	1.9	1.1	1.5	2.1	0.58
Trichlorofluoromethane	1.0	0.74	0.82	1.4	0.33
Trichlorotrifluoroethane	0.63	0.61	0.62	0.67	0.079

Table 7.4 Statistical Comparisons between BISP (upwind site) and Perimeter Monitors

	Not detected at BISP monitor	BISP monitor statistical comparisons[a]		
		BTRS	GIBI	SPWT
2-Butanone				
1,2,4-Trimethylbenzene	X			
1,3-Butadiene	X			
Acetaldehyde			Lower	
Acrolein			Lower	
Benzaldehyde	X			
Benzene		Lower	Lower	
Carbon disulfide			Lower	Lower
Carbon tetrachloride				
Chloromethane		Higher		Higher
Dichlorodifluoromethane				
Dichloromethane		Higher		Higher
Ethylbenzene	X			
Formaldehyde			Lower	
Hexanal				
m,p-Xylene	X			
n-Butyraldehyde	X			
o-Xylene	X			
Propionaldehyde				
Toluene		Lower	Lower	Lower
Trichlorofluoromethane				
Trichlorotrifluoroethane		Higher	Higher	Higher
Valeraldehyde	X			

[a] Only statistically significant differences are displayed and direction of this significance stated. Higher indicates that the geometric mean for BISP is greater than the others sites indicated. Lower indicates that the geometric mean for BISP is lower and the other sites indicated.

Table 7.5 National-scale Air Toxics Assessment Annual Average Concentrations Compared to Tonawanda Study Monitor Concentrations (Predicted-to-Observed Ratios)

Site	BISP	BTRS	GIBI	SPWT	Mean
1,3-butadiene		0.91	0.35		
Acetaldehyde	1.4	1.4	1.1	1.5	1.4
Acrolein	0.10	0.14	0.10	0.16	0.12
Benzene	0.99	0.77	0.16	1.4	0.84
Carbon disulfide	0.48	0.49	2.7	0.72	1.1
Carbon tetrachloride	0.88	0.89	0.90	0.89	0.89
Chloromethane	1.1	1.2	1.2	1.2	1.2
Dichloromethane	0.48	0.66	1.2	1.1	0.85
Ethylbenzene			0.61		
Formaldehyde	0.60	0.70	0.27	0.90	0.62
Propionaldehyde	0.69	0.84	0.68	0.80	0.75
Toluene	1.7	1.5	1.1	2.2	1.6
Xylene(m,p,o)		1.2	0.66	1.7	1.2

Table 7.6 Statistical Comparisons between Sites for Category B and C Air Toxics

Air Toxic	BISP	BTRS	GIBI	SPWT
1,2,4-Trimethylbenzene				
1,3-Butadiene		🟢	🟢	
2-Butanone				
Acetaldehyde	🟢		🟢	
Acrolein	🟢	🟣	🟢🟣🟠	🟠
Benzaldehyde				
Benzene	🟢🔵	🟣🔵	🟢🟣🟠	🟠
Carbon disulfide	🟢🟣		🟢	🟣
Carbon tetrachloride				
Chloromethane	🟢🟣		🟢	🟣
Dichlorodifluoromethane				
Dichloromethane	🟢🟣	🟠	🟠🟢	🟣
Ethylbenzene				
Formaldehyde	🟢	🟣	🟣🟢🟠	🟠
Hexanal				
m,p-Xylene		🟢	🟢🟣	🟣
n-Butyraldehyde				
o-Xylene		🟢		🟢
Propionaldehyde				
Toluene	🟠🟢🟣	🟢🔵	🟣🔵🩷	🟠🩷
Trichlorofluoromethane				
Trichlorotrifluoroethane	🟠🟢🟣	🟢	🟣	🟠
Valeraldehyde				

Table footnotes:

- Sites sharing similar symbols are significantly different at the 0.05 level.
- Cells with gray highlight indicate air toxic not detected greater than 50% above MDL.

Table 7.7 Summary of Risk Comparison for Category B[a]

Chemical	AGC ($\mu g/m^3$)	Inhalation Unit Risk[b] $(\mu g/m^3)^{-1}$	Toxicity Endpoint[c]	Tonawanda Mean ($\mu g/m^3$)	Tonawanda Non-cancer Risk (Hazard Quotient)	Tonawanda Cancer Risk	New York State Risk Mean (range)[d]	US Risk Mean (range)[d]
BISP								
2-Butanone	5000		Non-cancer	0.39	7.8×10^{-5}			
Hexanal	20[e]		Non-cancer	0.16	0.0080			
Propionaldehyde	110		Non-cancer	0.15	0.0014			
BTRS								
1,3-butadiene	0.033	3×10^{-5}	Cancer	0.088		2.7×10^{-6}	3.6×10^{-6} (1.8×10^{-6} to 5.3×10^{-6})	12×10^{-6} (1.6×10^{-6} to 110×10^{-6})
2-Butanone	5000		Non-cancer	0.40	8.0×10^{-5}			
Hexanal	20[e]		Non-cancer	0.15	0.0075			
m,p-xylene	100		Non-cancer	0.87	0.0087			
n-Butyraldehyde	15[e]		Non-cancer	0.081	0.0054			
o-xylene	100		Non-cancer	0.34	0.0034			
Propionaldehyde	110		Non-cancer	0.18	0.0016			
GIBI								
1,2,4-trimethylbenzene	290		Non-cancer	0.33	0.0011			
1,3-butadiene	0.033	3×10^{-5}	Cancer	0.24		7.3×10^{-6}	3.6×10^{-6} (1.8×10^{-6} to 5.3×10^{-6})	12×10^{-6} (1.6×10^{-6} to 110×10^{-6})
2-Butanone	5000		Non-cancer	0.37	7.4×10^{-5}			
Benzaldehyde	9[e]		Non-cancer	0.38	0.042			
Ethylbenzene	1000		Non-cancer	0.50	0.00050			
Hexanal	20[e]		Non-cancer	0.35	0.018			
n-Butyraldehyde	15[e]		Non-cancer	0.16	0.011			
Propionaldehyde	110		Non-cancer	0.21	0.0019			
Valeraldehyde	420		Non-cancer	0.12	0.00029			

Chemical	AGC ($\mu g/m^3$)	Inhalation Unit Risk[b] $(\mu g/m^3)^{-1}$	Toxicity Endpoint[c]	Tonawanda Mean ($\mu g/m^3$)	Tonawanda Non-cancer Risk (Hazard Quotient)	Tonawanda Cancer Risk	New York State Risk Mean (range)[d]	US Risk Mean (range)[d]
SPWT								
1,2,4-trimethylbenzene	290		Non-cancer	0.31	0.0011			
2-Butanone	5000		Non-cancer	0.40	8.0×10^{-5}			
n-Butyraldehyde	15[e]		Non-cancer	0.063	0.0042			

[a] For this category of air toxics, risk is estimated

[b] Inhalation Unit Risk (IUR) values were used in the cancer risk evaluation. AGCs are derived from IUR values as shown in the following formula, using acetaldehyde as the example:

$$AGC = \frac{1x10^{-6}}{IUR} \quad \text{Acetaldehyde: } 0.45\mu g/m^3 = \frac{1x10^{-6}}{2.2x10^{-6}(\mu g/m^3)^{-1}}$$

[c] Based on source of AGC assignment

[d] State and US results displayed when Tonawanda air toxic result is above hazard index of 1 or cancer risk greater than one in a million (1×10^{-6})

[e] Interim AGCs – see Appendix H for explanation of derivation

Table 7.8 Summary of Risk Comparison for Category C

Chemical	AGC ($\mu g/m^3$)	Inhalation Unit Risk[a] $(\mu g/m^3)^{-1}$	Toxicity Endpoint[b]	Tonawanda Mean ($\mu g/m^3$)	Tonawanda Non-cancer Risk (Hazard Quotient)	Tonawanda Cancer Risk	New York State Risk Mean (range)[c]	US Risk Mean (range)[c]
BISP								
Acetaldehyde	0.45	2.2×10^{-6}	Cancer	0.90		2.0×10^{-6}	2.4×10^{-6} ($1.3 \times 10^{-6} – 2.9 \times 10^{-6}$)	4.4×10^{-6} ($0.77 \times 10^{-6} – 14 \times 10^{-6}$)
Acrolein	0.02		Non-cancer	0.32	16		(18, 23)[d]	39 (2.2 – 120)
Benzene	0.13	7.8×10^{-6}	Cancer	1.2		9.2×10^{-6}	7.5×10^{-6} ($5.3 \times 10^{-6} – 9.6 \times 10^{-6}$)	11×10^{-6} ($2.2 \times 10^{-6} – 220 \times 10^{-6}$)
Carbon disulfide	700		Non-cancer	0.77	0.0011			
Carbon tetrachloride	0.067	1.5×10^{-5}	Cancer	0.70		10×10^{-6}	9.7×10^{-6} ($9.2 \times 10^{-6} – 11 \times 10^{-6}$)	9.7×10^{-6} ($6.4 \times 10^{-6} – 83 \times 10^{-6}$)
Chloromethane	90		Non-cancer	1.1	0.012			
Dichlorodifluoromethane	12000		Non-cancer	2.6	0.00022			
Dichloromethane	2.1	4.7×10^{-7}	Cancer	0.34		0.16×10^{-6}		
Formaldehyde	0.06	1.7×10^{-5}	Cancer	2.5		42×10^{-6}	31×10^{-6} ($16 \times 10^{-6} – 43 \times 10^{-6}$)	55×10^{-6} ($8.3 \times 10^{-6} – 260 \times 10^{-6}$)
Toluene	5000		Non-cancer	1.3	0.00026			
Trichlorofluoromethane	1000		Non-cancer	1.0	0.0010			
Trichlorotrifluoroethane	180000		Non-cancer	0.74	4.1×10^{-6}			
BTRS								
Acetaldehyde	0.45	2.2×10^{-6}	Cancer	1.1		2.4×10^{-6}	2.4×10^{-6} ($1.3 \times 10^{-6} – 2.9 \times 10^{-6}$)	4.4×10^{-6} ($0.77 \times 10^{-6} – 14 \times 10^{-6}$)
Acrolein	0.020		Non-cancer	0.33	17		(18, 23)[d]	39 (2.2 – 120)
Benzene	0.13	7.8×10^{-6}	Cancer	1.9		15×10^{-6}	7.5×10^{-6} ($5.3 \times 10^{-6} – 9.6 \times 10^{-6}$)	11×10^{-6} ($2.2 \times 10^{-6} – 220 \times 10^{-6}$)
Carbon disulfide	700		Non-cancer	0.96	0.0014			
Carbon tetrachloride	0.067	1.5×10^{-5}	Cancer	0.69		10×10^{-6}	9.7×10^{-6} ($9.2 \times 10^{-6} – 11 \times 10^{-6}$)	9.7×10^{-6} ($6.4 \times 10^{-6} – 83 \times 10^{-6}$)

Chemical	AGC ($\mu g/m^3$)	Inhalation Unit Risk[a] $(\mu g/m^3)^{-1}$	Toxicity Endpoint[b]	Tonawanda Mean ($\mu g/m^3$)	Tonawanda Non-cancer Risk (Hazard Quotient)	Tonawanda Cancer Risk	New York State Risk Mean (range)[c]	US Risk Mean (range)[c]
Chloromethane	90		Non-cancer	1.0	0.011			
Dichlorodifluoromethane	12000		Non-cancer	2.6	0.00022			
Dichloromethane	2.1	4.7×10^{-7}	Cancer	0.36		0.17×10^{-6}		
Formaldehyde	0.06	1.7×10^{-5}	Cancer	2.3		38×10^{-6}	31×10^{-6} ($16 \times 10^{-6} – 43 \times 10^{-6}$)	55×10^{-6} ($8.3 \times 10^{-6} – 260 \times 10^{-6}$)
Toluene	5000		Non-cancer	2.1	0.00042			
Trichlorofluoromethane	1000		Non-cancer	1.0	0.0010			
Trichlorotrifluoroethane	180000		Non-cancer	0.67	3.7×10^{-6}			
GIBI								
Acetaldehyde	0.45	2.2×10^{-6}	Cancer	1.3		2.89×10^{-6}	2.4×10^{-6} ($1.3 \times 10^{-6} – 2.9 \times 10^{-6}$)	4.4×10^{-6} ($0.77 \times 10^{-6} – 14 \times 10^{-6}$)
Acrolein	0.020		Non-cancer	0.43	22		(18, 23)[d]	39 (2.2 – 120)
Benzene	0.13	7.8×10^{-6}	Cancer	9.8		75×10^{-6}	7.5×10^{-6} ($5.3 \times 10^{-6} – 9.6 \times 10^{-6}$)	11×10^{-6} ($2.2 \times 10^{-6} – 220 \times 10^{-6}$)
Carbon disulfide	700		Non-cancer	1.1	0.0016			
Carbon tetrachloride	0.067	1.5×10^{-5}	Cancer	0.68		10×10^{-6}	9.7×10^{-6} ($9.2 \times 10^{-6} – 11 \times 10^{-6}$)	9.7×10^{-6} ($6.4 \times 10^{-6} – 83 \times 10^{-6}$)
Chloromethane	90		Non-cancer	1.0	0.011			
Dichlorodifluoromethane	12000		Non-cancer	2.6	0.00022			
Dichloromethane	2.1	4.7×10^{-7}	Cancer	0.19		0.091×10^{-6}		
Formaldehyde	0.06	1.7×10^{-5}	Cancer	5.9		98×10^{-6}	31×10^{-6} ($16 \times 10^{-6} – 43 \times 10^{-6}$)	55×10^{-6} ($8.3 \times 10^{-6} – 260 \times 10^{-6}$)
m,p-xylene	100		Non-cancer	1.8	0.018			
o-xylene	100		Non-cancer	0.60	0.0060			
Toluene	5000		Non-cancer	3.1	0.00062			
Trichlorofluoromethane	1000		Non-cancer	1.0	0.0010			
Trichlorotrifluoroethane	180000		Non-cancer	0.64	3.6×10^{-6}			

Chemical	AGC ($\mu g/m^3$)	Inhalation Unit Risk[a] $(\mu g/m^3)^{-1}$	Toxicity Endpoint[b]	Tonawanda Mean ($\mu g/m^3$)	Tonawanda Non-cancer Risk (Hazard Quotient)	Tonawanda Cancer Risk	New York State Risk Mean (range)[c]	US Risk Mean (range)[c]
SPWT								
Acetaldehyde	0.45	2.2×10^{-6}	Cancer	1.0		2.20×10^{-6}	2.4×10^{-6} ($1.3 \times 10^{-6} – 2.9 \times 10^{-6}$)	4.4×10^{-6} ($0.77 \times 10^{-6} – 14 \times 10^{-6}$)
Acrolein	0.020		Non-cancer	0.34	17		(18, 23)[d]	39 (2.2 – 120)
Benzene	0.13	7.8×10^{-6}	Cancer	1.3		9.9×10^{-6}	7.5×10^{-6} ($5.3 \times 10^{-6} – 9.6 \times 10^{-6}$)	11×10^{-6} ($2.2 \times 10^{-6} – 220 \times 10^{-6}$)
Carbon disulfide	700		Non-cancer	1.9	0.0027			
Carbon tetrachloride	0.067	1.5×10^{-5}	Cancer	0.69		10×10^{-6}	9.7×10^{-6} ($9.2 \times 10^{-6} – 11 \times 10^{-6}$)	9.7×10^{-6} ($6.4 \times 10^{-6} – 83 \times 10^{-6}$)
Chloromethane	90		Non-cancer	1.0	0.011			
Dichlorodifluoromethane	12000		Non-cancer	2.6	0.00022			
Dichloromethane	2.1	4.7×10^{-7}	Cancer	0.23		0.110×10^{-6}		
Formaldehyde	0.06	1.7×10^{-5}	Cancer	1.9		32×10^{-6}	31×10^{-6} ($16 \times 10^{-6} – 43 \times 10^{-6}$)	55×10^{-6} ($8.3 \times 10^{-6} – 260 \times 10^{-6}$)
m,p-xylene	100		Non-cancer	0.88	0.0088			
o-xylene	100		Non-cancer	0.34	0.0034			
Propionaldehyde	110		Non-cancer	0.20	0.0018			
Toluene	5000		Non-cancer	1.9	0.00038			
Trichlorofluoromethane	1000		Non-cancer	1.00	0.0010			
Trichlorotrifluoroethane	180000		Non-cancer	0.63	3.5×10^{-6}			

[a] Inhalation Unit Risk (IUR) values were used in the cancer risk evaluation. AGCs are derived from IUR values as shown in the following formula, using acetaldehyde as the example: $AGC = \frac{1x10^{-6}}{IUR}$ Acetaldehyde: $0.45\mu g/m^3 = \frac{1x10^{-6}}{2.2x10^{-6}(\mu g/m^3)^{-1}}$

[b] Based on source of AGC assignment

[c] State and US results displayed when Tonawanda air toxic result is above hazard index of 1 or cancer risk greater than one in a million (1×10^{-6})

[d] Acrolein is monitored at two sites in the State's network of toxics monitors.

Table 7.9 Annual Inhalation Cancer Risk at the Study's Four Monitoring Sites

(Risk expressed as excess inhalation cancer cases per million individuals exposed in a lifetime)

Grand Island Blvd Monitoring Site

Compound	Concentration µg/m^3	Category	AGC µg/m^3	Risk 1x 10^6
Acetaldehyde	1.3	C	0.45	2.9
Benzene	9.8	C	0.13	75.4
BSO	0.875	Modeled	0.0016	547
1,3-Butadiene	0.24	B	0.033	7.4
Carbon tetrachloride	0.68	C	0.067	10.1
Dichloromethane	0.19	C	2.1	0.09
Formaldehyde	5.9	C	0.06	98.3
Naphthalene	0.128	Modeled	0.0294	4.4
Total				**745**

Compound	Concentration µg/m^3	Category	AGC µg/m^3	Risk 1x 10^6
Acetaldehyde	1.3	C	0.45	2.9
Benzene	9.8	C	0.13	75.4
BSO	0.244	Monitored[1]	0.0016	152.5
1,3-Butadiene	0.24	B	0.033	7.4
Carbon tetrachloride	0.68	C	0.067	10.1
Dichloromethane	0.19	C	2.1	0.09
Formaldehyde	5.9	C	0.06	98.3
Naphthalene	0.679	Monitored	0.0294	23
Total				**370**

Brookside Terrace Site

Compound	Concentration µg/m^3	Category	AGC ug/ µg/m^{3}m^3	Risk 1x 10^6
Acetaldehyde	1.1	C	0.45	2.4
Benzene	2.0	C	0.13	15.4
BSO	0.157	Modeled	0.0016	98.1
1,3-Butadiene	0.088	B	0.033	2.7
Carbon tetrachloride	0.69	C	0.067	10.3
Dichloromethane	0.36	C	2.1	0.17
Formaldehyde	2.3	C	0.06	38.3
Naphthalene	0.041	Modeled	0.0294	1.4
Total				**169**

[1] Monitored data reflects the results and extrapolation from the PAH monitor in operation from July, 2008 to May 2009, see section 7.3 for details.

Sheridan Park Water Tower Site

Compound	Concentration µg/m^3	Category	AGC µg/m^3	Risk 1x 10^6
Acetaldehyde	1.0	C	0.45	2.2
Benzene	1.3	C	0.13	10.0
BSO	0.104	Modeled	0.0016	65.0
1,3-Butadiene		A		
Carbon tetrachloride	0.69	C	0.067	10.3
Dichloromethane	0.23	C	2.1	0.11
Formaldehyde	1.9	C	0.06	31.7
Naphthalene	0.063	Modeled	0.0294	2.1
Total				**121**

Beaver Island State Park Site

Compound	Concentration µg/m^3	Category	AGC µg/m^3	Risk
Acetaldehyde	0.9	C	0.45	2.0
Benzene	1.2	C	0.13	9.2
BSO	0.041	Modeled	0.0016	25.6
1,3-Butadiene		A		
Carbon tetrachloride	0.7	C	0.067	10.4
Dichloromethane	0.34	C	2.1	0.16
Formaldehyde	2.5	C	0.06	41.7
Naphthalene	0.012	Modeled	0.0294	0.82
Total				**90**

Note: 1.) The Category column represents the suitability of the air toxic for assessing risks based upon the decision tree described in subsection 7.1.1
2.) The “M” in the Category column represents modeled concentration data only.
3.) The AGC represents the air concentration that corresponds to a one-in-one-million inhalation excess cancer risk
4.) The Risk, expressed as the excess inhalation cancer cases per million individuals exposed is calculated by multiplying the chemical specific inhalation unit risk estimate.

Table 7.10 Hazard Index Analysis

Kaufman Avenue,

Top five Hazard Quotient (HQ) Compounds Attributing to the Hazard Index (HI) from Stationary Sources Only

	Acrolein	Sulfuric Acid	Hydrochloric Acid	Naphthalene	Ammonia	Total HI
HQ	0.48	0.42	0.05	0.04-0.23*	0.04	**1.03-1.22**
Facility	3M	FMC Corp.	FMC Corp.	Tonawanda Coke	Tonawanda Coke	

*see text section 7.4.2

Ken-Ton Occupational School and Neighborhood South

Top five Hazard Quotient (HQ) Compounds Attributing to the Hazard Index (HI) from Stationary Sources Only

	Acrolein	Ammonia	Sulfuric acid	Acetaldehyde	Aniline	Total HI
HQ	0.28	0.03	0.02	0.015	0.012	**0.48**
Facility	3M	Tonawanda Coke	3M	3M	Valley Retread	

Tonawanda School District

Top five Hazard Quotient (HQ) Compounds Attributing to the Hazard Index (HI) from Stationary Sources Only

	Acrolein	Chloroform	Ammonia	Hydrogen Sulfide	Toluene Diisocyanate	Total HI
HQ	0.12	0.08	0.03	0.03	0.02	**0.28**
Facility	Sewage Treatment Plant	Sewage Treatment Plant	Tonawanda Coke	Sewage Treatment Plant	Keller Technology	

Esminger Playfield Neighborhood

Top five Hazard Quotient (HQ) Compounds Attributing to the Hazard Index (HI) from Stationary Sources Only

	Acrolein	Hydrochloric Acid	Ammonia	Toluene Diisocyanate	Chloroform	Total HI
HQ	0.09	0.07	0.02	0.002	0.023	**0.21**
Facility	3M	ASPCA	Tonawanda Coke	Keller Technology	Niagara Landfill	