

Niagara CAER Group Chemical Companies

**National Emissions Reduction
Masterplan (NERM)**

2008 Report for 2007 Emissions

Niagara CAER Group Chemical Companies

2008 NERM Report

Index

Page	
1	Index
2	Company Contact List
3	Introduction and Summary
4	Explanations
5	Chart No.1 – Chemical Emissions
6	Chart No.2 – Production Volumes
7	Chart No.3 – Chemical Emissions per 1000 Kg. Production
8	Chart No.4 – Chemical Wastes
9	Chart No.5 – Chemical Wastes per 1000 Kg. Production
10	Chart No.6 – Combustion Emissions
11	Chart No.7 – Combustion Emissions per 1000 Kg. Production
12	Table 1 – Chemical Emissions greater than 1000 Kg. per year
13	Table 2 – Chemical Emissions less than 1000 Kg. per year.
14	Table 3 – Chemical Emissions per 1000 Kg. Production, 1993 to 2004
15	Table 4 – Chemical Wastes
16	Table 5 – Chemical Wastes per 1000 Kg. Production, 1993 to 2004
17	Table 6 – Combustion Emissions
18	Table 7 – Combustion Emissions per 1000 Kg. Production

**Member Companies
and
Contact Names**

Company	Contact Name and Number	
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Chemtrade Logistics Inc.	Dave Smith	905-356-8763
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CYTEC Canada Inc.	Martin Lehman	905-374-5844
	Ken Milo	905-374-5812

Durez Canada, Fort Erie	Kevin Rady	905-871-3206
	Robert Hunt	905-871-3206

Kemira Chemicals Canada Inc. St. Catharines	Bruno Montpetit	905-688-6470
	Clifton Brown	905-688-6470

Lubrizol Canada Limited	Blair Schiebel	289-292-3279
	Bill Goodfellow	289-292-3268

Mancuso Chemicals	Robert Patel	905-357-3626
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Oxy Vinyls Canada Inc.	Don Davidson	905-374-5601
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PolyOne Canada Inc.	Mario Tremblay	905-353-4229
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Introduction

This report is issued by the Niagara CAER Group Chemical Companies as part of their commitment to being open to the public and to operating their businesses according to the principles of **Responsible Care**[®], an initiative of **The Canadian Chemical Producers' Association**. This is the sixteenth year of its publication.

The results are presented as graphs with accompanying explanations for reported changes. Data is presented at the end of the report in the form of tables. Persons wishing to obtain more information are asked to e-mail their questions to sajondun@iaw.on.ca, or they can contact the chemical company directly at the numbers listed in this report.

Operating the chemical plants with the absolute minimum impact on the health, safety and environmental well being of the communities in which we operate and live, continues to be our top priority. As may be seen from the graphs, we are making progress on our commitment.

Summary

Reductions in both chemical and combustion emissions to the lowest levels since the inception of this report are encouraging results in the chemical industries work to reduce its' footprint on the environment. Disposal of some oil contaminated soil was the sole contributing factor a 16.7% increase in chemical wastes.

Explanations

Chemical Emissions

Chemical emissions in 2007 were reduced by 18.7% to the lowest levels recorded by the Niagara CAER Group since the inception of this report in 1992.

Due to a slowing economy, production levels were reduced by 11.5% in 2006 and continued to decline by another 9.7% in 2007. Undoubtedly a portion of the reduction in chemical emissions may be attributed to operating at reduced production rates. However, Chart No. 3 shows chemical emissions per thousand units of production being reduced to the lowest level in seven years which is less than half of what it was in 1993, our Base Year. This indicates that emission reductions were more than could be expected due to the production reduction alone.

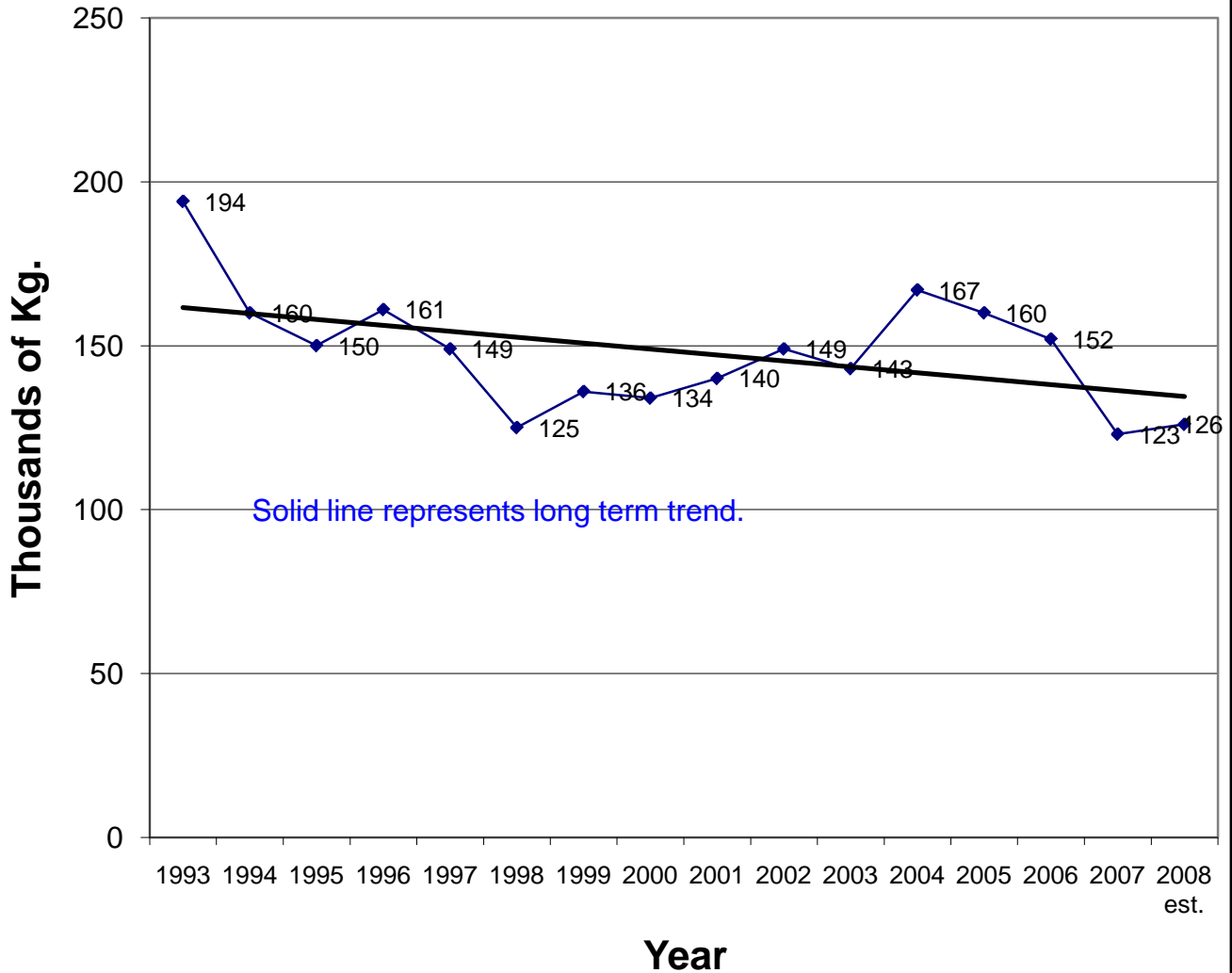
Chemical Wastes

Chemical wastes increased by 16.7% due mainly to the removal of 138,000 kilograms (94 cubic yards) of oil contaminated soil at one plant as a part of upgrading their spill containment system. Without this one waste, overall chemical wastes would have been reduced by 3.1%.

Combustion Emissions

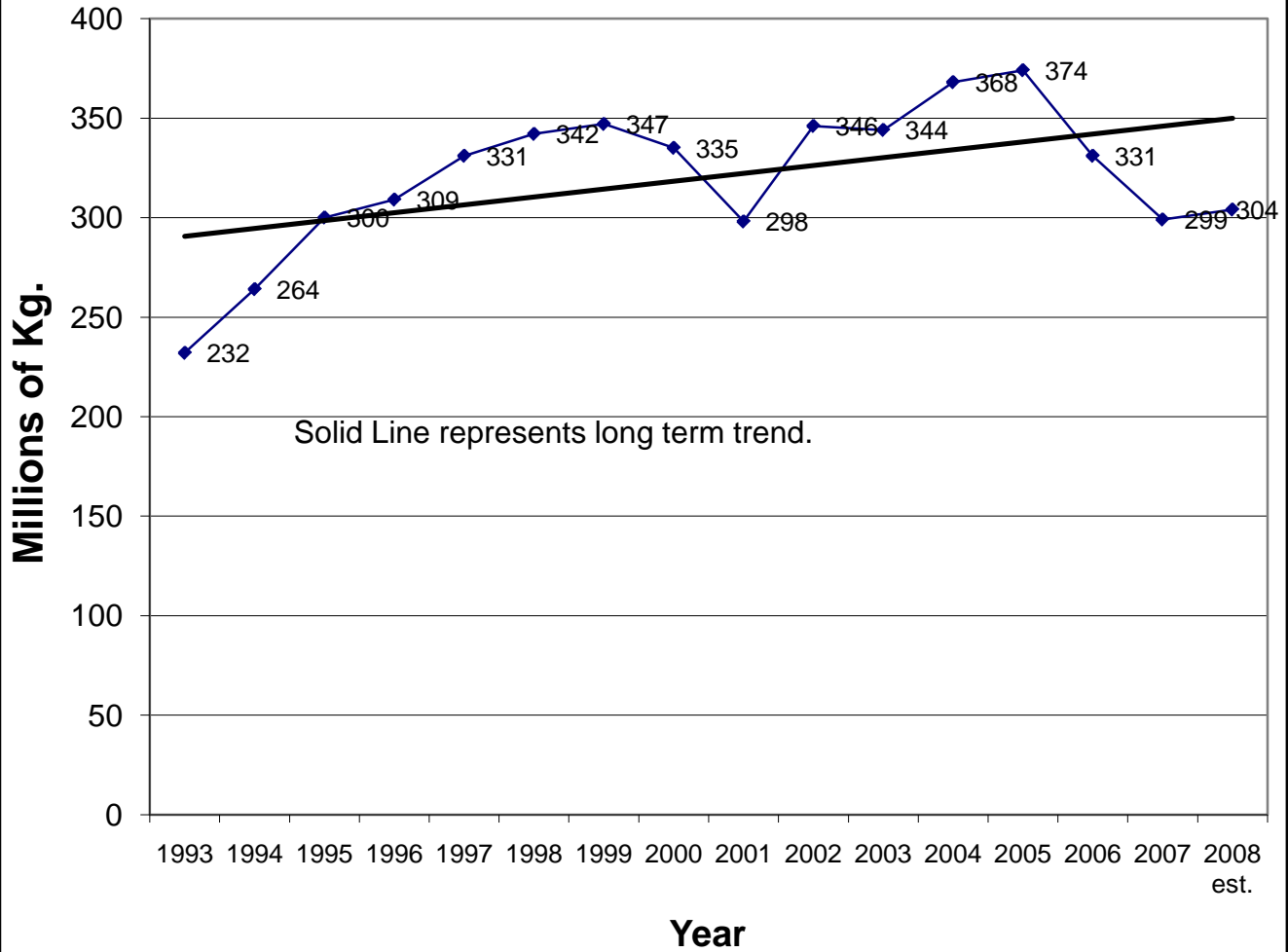
Combustion emissions were reduced to the lowest level since the Niagara CAER Group initiated this reporting process in 1992. This improvement has been due primarily to increased efficiency of steam generating equipment and improved chemical process technology. Also, reduced production levels in 2007 has also reduced the amount of stem required for chemical processing thereby contributing to the lower emissions.

Chart No. 1 Chemical Emissions



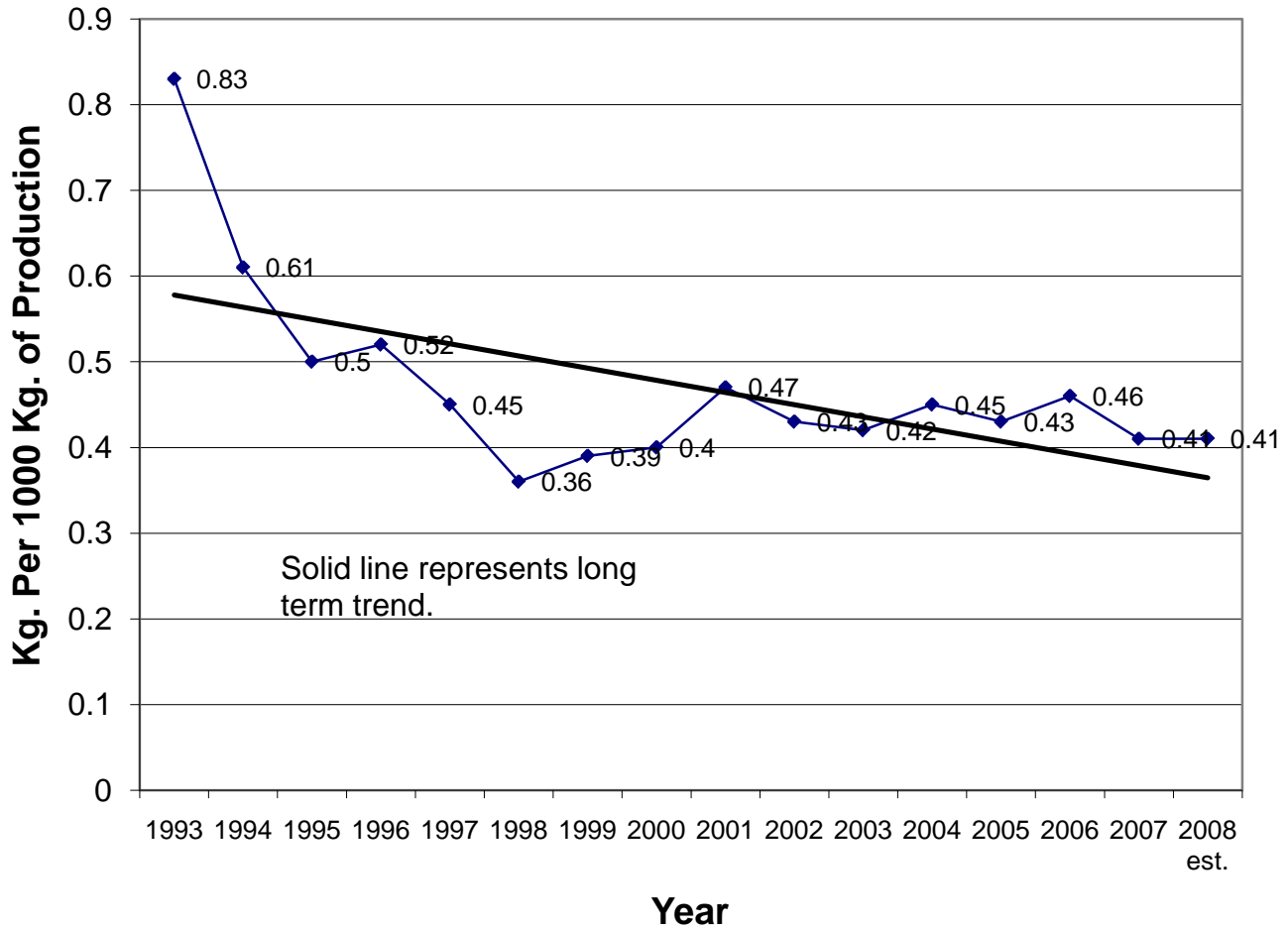
Chemical Emissions in 2007 were reduced by 18.7% compared with 2006, to the lowest levels recorded by the Niagara CAER Group since the inception of this report in 1992. While some of this reduction may be due to operating at reduced production rates, most plants continue to work to minimize emissions and the results are reflected by the improved performance shown above. The long term trend is moving in the right direction.

Chart No. 2 Production Volume



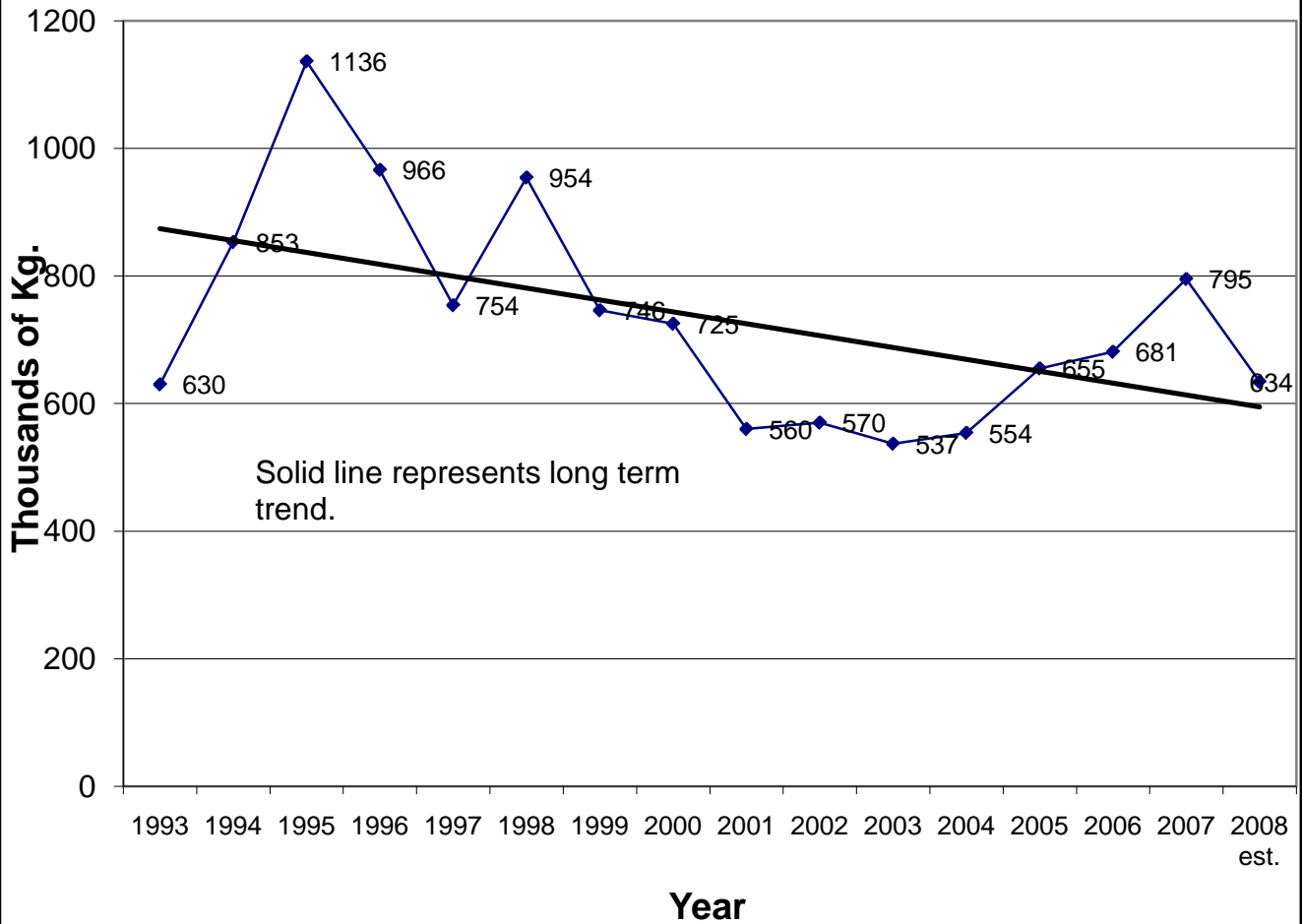
Production volumes declined by 9.7% from 2006 levels for a total decrease of 20% in the last two years. Operating chemical plants at lower capacities presents some challenges in several areas. For example, the plants still have to be heated in the winter and with less production volume to absorb the costs, some efficiencies tend to be lower.

Chart No. 3
Chemical Emissions Per 1000 Kg. Of Production



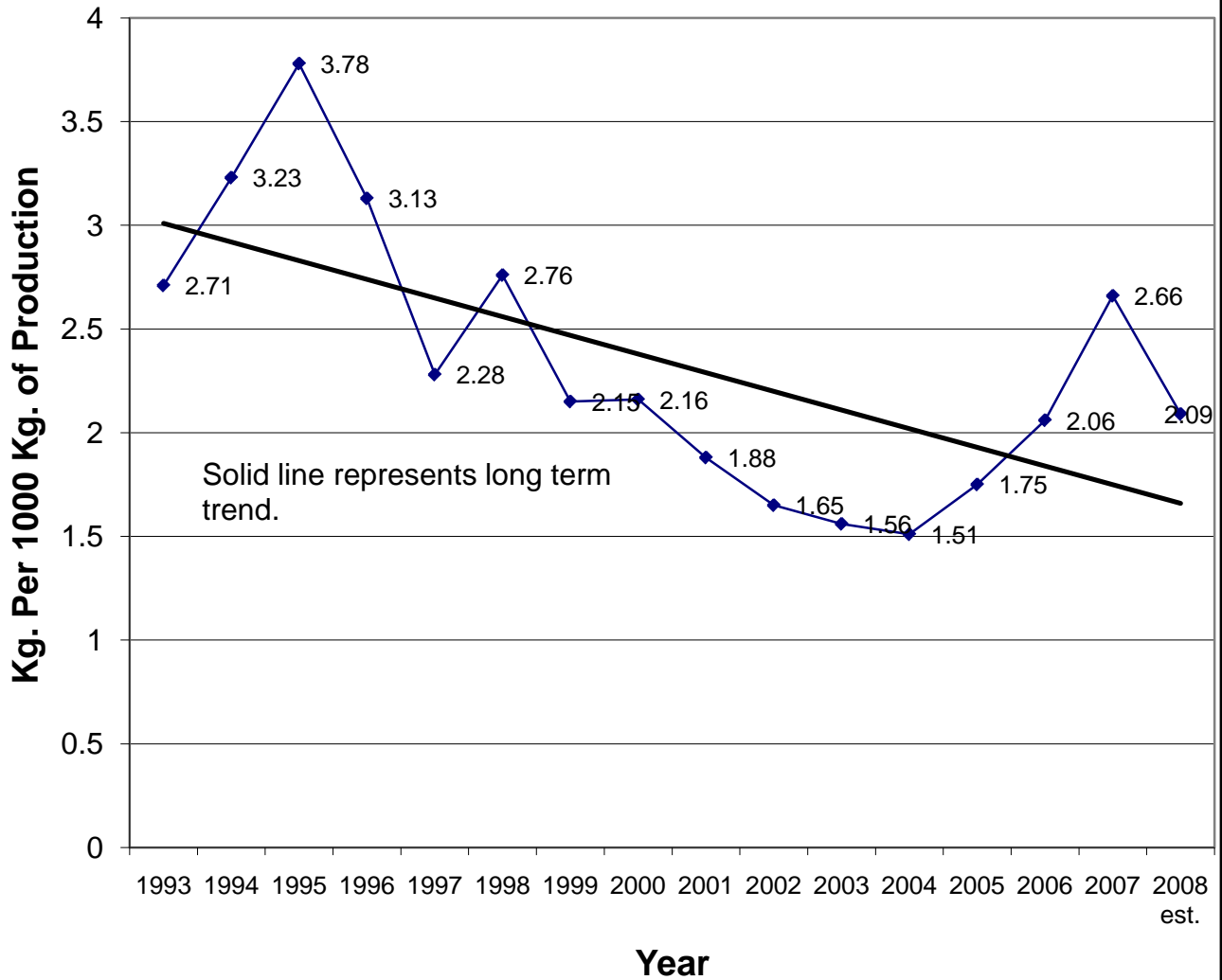
The 18.7% reduction in chemical emissions resulted in the lowest emissions per thousand units of production in the last seven years. We are expecting to match this performance in 2008. As may be seen from the chart, we are presently at less than half the level experienced in 1993, our Base Year, with the long term trend line continuing to lower levels.

Chart No. 4 Chemical Wastes



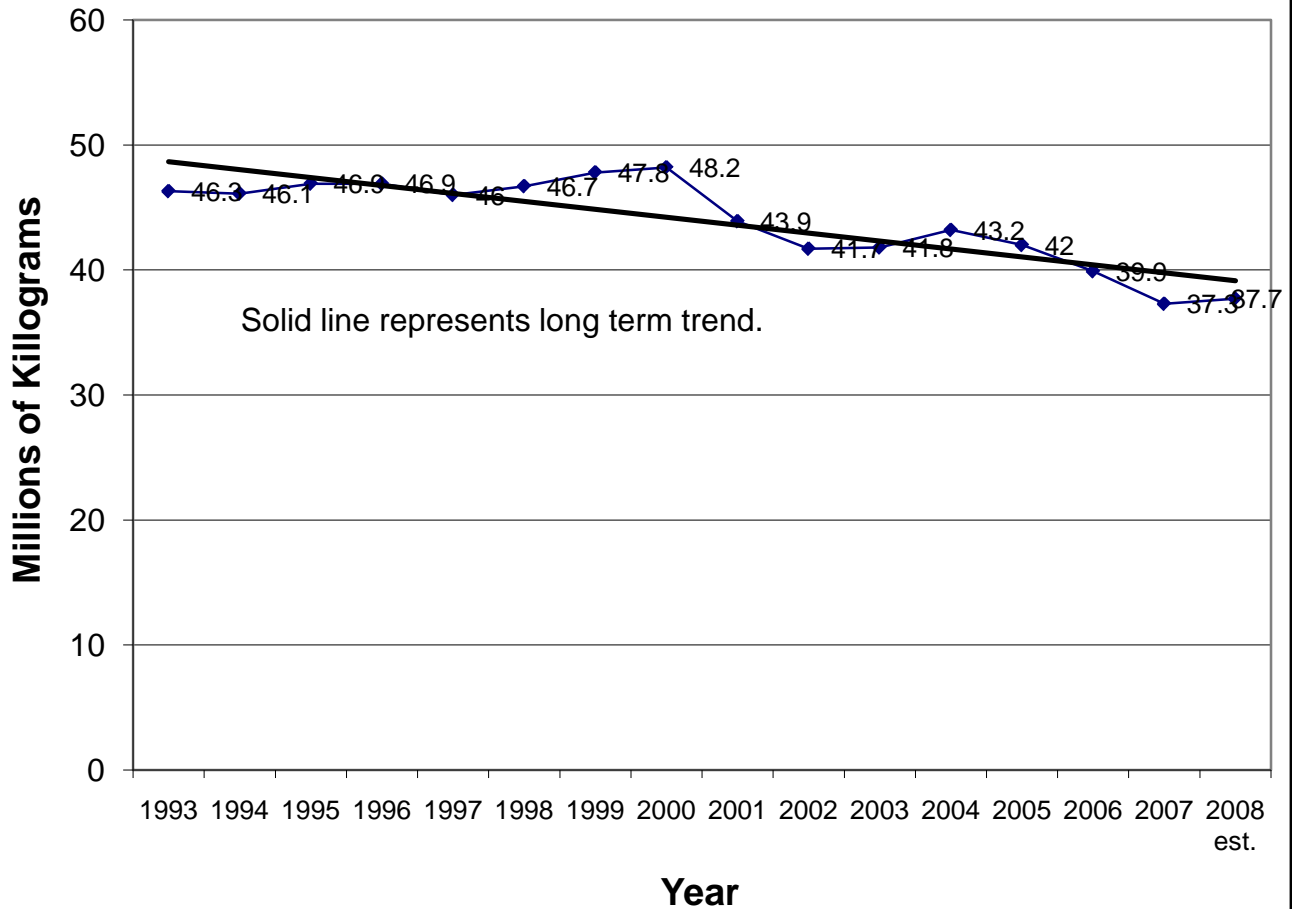
Chemical Wastes increased by 16.7% due mainly to removal of oil contaminated soil at one plant as part of upgrading their spill containment system. Without this one waste, overall chemical wastes would have been reduced by 3.1%. The long term trend line is moving in the right direction.

Chart No. 5
Chemical Wastes Per 1000 Kg. of Production



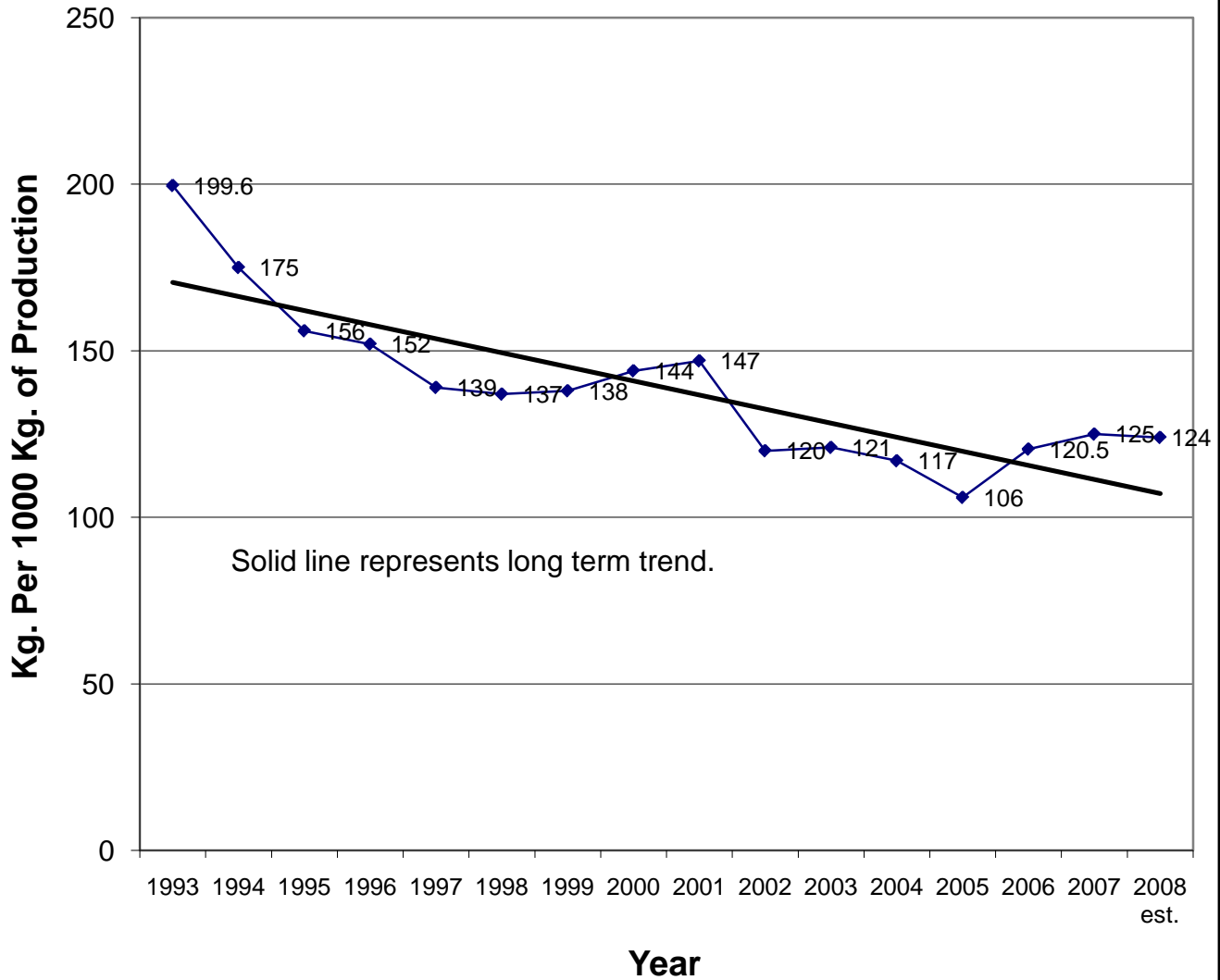
As the result of increased wastes due to the disposal of contaminated soil, and reduced production levels, chemical wastes per thousand units of production increased to the highest levels in nine years. With 2008 wastes expected to return to normal levels, the long term trend line continues to move in the right direction.

Chart No. 6 Combustion Emissions



Combustion Emissions were reduced by 6% compared with 2006 to the lowest level since the Niagara CAER Group initiated this reporting process in 1992. This low level of combustion emissions is primarily due to improved efficiency of steam generating equipment and improved chemical process technology. However, reduced production levels in 2007 has also reduced the amount of steam required for chemical processing thereby contributing to the lower emissions.

Chart No. 7
Combustion Emissions per 1000 Kg. of Production



Reduced production levels tend to offset improvements in process technology in some areas. During cold months, plants still have to be heated despite running at lower rates. Combustion emissions per thousand units of production tends to be higher than when the plants are operating at higher rates. However, the long term trend is moving in the right direction and we are expecting continued good results in this area.

Chemical Emissions to Air and Water
Category: Greater than 1000 Kilograms (kg.) Per Year
Year 2007 Emissions and Comparisons with 2006 results

Table 1

Chem. No.	Plant No.	Chemical Name	Amount Released in 2007 Kilograms		Total 2007 kg.	Total 2006 kg.	% Change From 2006	Estimate 2008 kg.
			Waterway	Air				
A4	4	Nitrogenous Material	842		842	850	-1	900
A5	1,4,5	Ammonia	1,487	26,229	27,716	34,055	-18.6	27,900
A6	4,7,9	Methanol		453	453	3,981	-88.6	530
A10	4	Iso Octane		4,750	4,750	3,105	+53	3,000
A13	4	Vinyl Chloride	1	714	715	1,275	-43.9	1,200
A17	9	Toluene		134	134	2,896	-95.4	150
A19	2,5,7	Kerosene Type Solvents		2,858	2,858	4,341	-34.2	3,626
A20	5	Ethyl Alcohol		52,822	52,822	52,066	+1.5	50,000
A21	1,4	Nitrate Ion	29,870		29,870	44,775	-33.3	35,600
B62	4	Oil and Grease*	1,095		1,095	912	+20	1,100
Emissions less than 1000 kg. per year – See Table 2			421	1,167	1,588	2,888	-45	1,662
Total Emissions			33,716	89,127	122,843	151,144	-18.7	125,668

Identification of Companies: (1) Cytec (2) Lubrizol (4) Oxy Vinyls (5) Durez (6) Chemtrade Logistics (7) Kemira Chemicals (8) PolyOne (9) Mancuso Chemicals Number (3) was CYRO, now shut down. The numbering system has been maintained to allow comparison with previous years.

* Tests show Oil and Grease to be below minimum detection levels, and they are probably zero. The amount reported is for the minimum detection level.

Chemical Emissions to Air and Water
Category: Less than 1000 Kilograms (kg.) Per Year
Year 2007 Emissions and Comparisons with 2006 results

Table 2

Chem. No.	Plant No.	Chemical Name	Amount Released in 2007 Kilograms		Total 2007 kg.	Total 2006 kg.	% Change From 2006	Estimate 2008 kg.
			Waterway or Sewer	Air				
B4	7	Isopropanol		81	81	54	+50	130
B5	4,5	Phenol	14	589	603	685	-12	590
B7	5	Formaldehyde		56	56	62	-9.6	55
B9	1	Hydrochloric Acid		1	1	284	-99	1
B13	9	Xylene		136	136	131	-81.4	150
B33	9	Ethyl benzene		11	11	128	-91.4	15
B81	7	Acetic Acid		117	117	32	+265	200
B67	4	Phosphorus Salts	307		307	340	-9.7	250
B77	4	Aluminium Ion	100		100	136	-26.5	110
B80	9	Furfuryl Alcohol		0	0	172	-100	0
12 Chemicals with emissions of less than 100Kg.*				177	177	264	-33	162
Total Emissions in this category			421	1168	1589	2288	-45	1663

Identification of Companies: (1) Cytec (2) Lubrizol (4) Oxy Vinyls (5) Durez (6) Chemtrade Logistics (7) Kemira Chemicals (8) PolyOne (9) Mancuso Chemicals

* Includes: Zinc; 2,6 Di-t-butyl-4-methylphenol, Gasoline, Calcium Hydroxide, Ferric Oxide, Carbon Black, Cyanide, HCFC, Sulfur Dioxide, Naphthalene; 1,2,4-trimethylbenzene

Chemical Emissions Per 1000 Kg. of Production, 1993 to 2007

Kg. of Emissions Per 1000 Kg. of Production

Table 3

	1993 Base Year*	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 Estimate
Production Volume MM Kg.	232	264	300	309	331	342	347	335	298	346	344	368	374	331 (-11.5%)	299 (-9.7%)	304
% Change from Base Year*		+ 13.8	+ 29.5	+ 33	+42.8	+47.4	+ 49.6	+ 44.4	+ 28.6	+49.3	+48	+58.6	+61.3	+42.6	+29	+31
Chemical Emissions M Kg.	194	160	150	161	149	125	136	134	140	149	143	167	160	152 (-5%)	123 (-19%)	126
% Change from Base Year*		- 18	- 22	- 17	- 23	- 36	- 30	- 31	- 28	-24	-26	-13.8	-17.5	-21.6	-36	-35
Chemical Emissions per 1000 Units of Production Kg. per 1000 Kg. of Production	0.83	0.61	0.50	0.52	0.45	0.36	0.39	0.40	0.47	0.43	0.42	0.45	0.43	0.46 (+7%)	0.41 (-10.9%)	0.41
% Change from Base Year*		- 27	- 40	-37	- 46	- 57	- 53	- 52	- 43	-48	-49.4	-45.8	-48.5	-44.6	-49.6	-49.6

*Base Year – 1993 is the year against which plant performance is being compared.

Chemical Wastes

Year 2007 Transfers and Comparisons with 2006 results

Table 4

Chem. No. T__	Plant No.	Chemical Name	Amount Transferred in 2007 Kilograms		Total 2007 kg.	Total 2006 kg.	% Change From 2006	Estimate 2008 kg.
			Landfill	Recycled/Treated				
T1	1	Tributyl-Phosphine Sulfide	73,255		73,255	10,005	+632	50,000
T3	5	Phenol	2,420		2,420	3,549	-31.8	2,400
T4	1,2,4,7,8	Solvents; Waste & Lube Oils		232,370	232,370	223,480	+4.0	218,205
T8	2	Zinc		290	290	332	-12.7	300
T16	7	Surfactants		21,000	21,000	128,000	-83.6	75,000
T18	4	Vinyl Resins & Compounds	165,372	0	165,372	199,824	-17.2	150,000
T22	1	Phosphorus Salts		2,049	2,049	1,526	+34.2	1,850
T27	7	Waste Corrosives – Obsolete Prod.		3,400	3,400	7,531	-54.9	5,000
T30	1,4	Hazardous Organic Wastes	780	144,885	145,665	97,975	+48.7	112,000
T15	5	Formaldehyde	90	6,840	6,930	7,765	-10.8	6,900
T24	6	Sodium Hydroxide		750	750	1,016	-26.2	1,000
T37	4	Ammonia ** (One time transfer)		5,350	5,350	0	+100	0
T34	2	Paint		460	460	0	+100	0
T36	2	Amyl Alcohol		170	170	0	+100	0
T35	2	Alkylated Phenol		200	200	0	+100	0
T38	8	Antimony	119	0	119	49	+143	100
T32	2	Contaminated Soil (oil)	138,243	0	138,243	0	+100	15,000
2 Chemicals with wastes of 100 Kg. or less per year *				81	81	87	-6.9	169
Total Chemical Wastes			380,279	417,845	798,124	681,139	+17.2	636,924 (-20% vs. 2007) (-6.5% vs. 2006)

Identification of Companies: (1) Cytec (2) Lubrizol (4) Oxy Vinyls (5) Durez (6) Chemtrade Logistics (7) Kemira Chemicals (8) PolyOne (9) Mancuso Chemical

* Includes: Mercury and Batteries

** Removal of Ammonia from plant site is a one time only event.

Chemical Wastes per 1000 Units of Production, 1993 to 2007

Kg. of Wastes per 1000 Kg. of Production

Table 5

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 Estimate
Production Volume MM Kg	232	264	300	309	331	342	347	335	298	346	344	368	374	331 (-11.6%)	299 (-9.7%)	304
% Change from Base Year		+ 13.8	+ 29.5	+ 33	+42.8	+47.4	+ 49.6	+44.4	+28.6	+49.3	+48.4	+58.6	+61.3	+42.6	+29	+31
Chemical Wastes M Kg	630	853	1,136	966	754	954	746	725	560	570	537	514	655	681 (+4%)	798 (+17%)	634
% Change from Base Year		+ 35.4	+ 80.4	+ 53.5	+ 19.8	+ 51.4	+ 18.4	+15.1	-11.1	-9.4	-14.7	-12	+4	+8.1	+26	+0.6
Chemical Wastes per Production Unit Volume Kg. per 1000 Kg. of Production	2.71	3.23	3.78	3.13	2.28	2.76	2.15	2.16	1.88	1.65	1.56	1.51	1.75	2.06 (+17%)	2.67 (+30%)	2.09
% Change from Base Year		+ 19.3	+ 39.5	+ 15.5	- 15.9	+ 1.8	- 21.0	-20.3	-30.6	-39.2	-42.4	-44.3	-35.4	-24	-1.5	-23

**Combustion Emissions - Burning Fuel For Steam Generation
And Drying
2007 Emissions and a comparison with 2006**

Table 6

Combustion Product Component	Amount Released		
	2007	2006	2008 Estimate
Carbon Dioxide MM kg	37.25	39.7	37.62
Nitrogen Dioxide M kg	33.14	35.4	36.64
Carbon Monoxide M kg	25.65	28	28.14
Sulfur Oxides M kg	1.92	6.2	2.09
Methane M kg	1.03	1.04	1.16
Volatile Organic Carbon M kg	2.13	2.2	2.61
Totals Millions of kg	37.32 (-6% vs 2006)	39.77	37.69 (+1% vs 2007)

Combustion Emissions Per 1000 Kilograms of Production, 1993 to 2007

Table 7

	1993 Base Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 Estimate
Production Volumes Millions of Kg.	232	264	300	309	331	342	347	335	298	346	344	368	374	331 (-11.6%)	299 (-9.7%)	304
% Change from Base Year		+ 13.8	+ 29.5	+ 33	+ 42.8	+ 47.4	+ 49.6	+ 44.4	+28.6	+49.3	+48.4	+56.6	+61.3	+42.6	+29	+31
Combustion Emissions Millions of Kg.	56.3	57.4	60.4	60.4	59	58.5	60.9	62.3	55.8	53.1	53.1	54.8	42	39.8 (-5.2%)	37.3 (-6%)	37.7
% Change from Base Year		+ 1.9	+ 7.3	+ 7.3	+ 4.8	+ 3.9	+ 8.2	+ 10.7	- 1.0	-5.7	-5.7	-2.7	-25	-13.8	-34	-33
Combustion Emissions Kg. Per 1000 Kg. Of Production	243	217	201	196	178	172	176	186	186	153	154	149	112	121 (+8%)	125 (+3.3%)	124
% Change from Base Year		- 10.7	- 17.3	- 19.3	- 26.7	- 29	- 27.6	- 23.5	- 23.5	-37	-36.6	-38.7	-54	-50	-48.5	-49