Niagara CAER Group

Community Awareness – Emergency Response

Chemical Companies

Emissions Report

(NERM)

2019 Report for 2018 Emissions and Data

Niagara CAER Group Chemical Companies

2019 Emissions Report

(For 2018)

Index

Introduction

- **Issued annually by the Niagara CAER Group Chemical Companies.**
- **A commitment to being open with the public.**
- **This is the twenty sixth year of publication.**
- **Production levels have increased slightly in 2018 from 2017 about 9%**
- **Member companies strive to reduce chemical emissions and chemical waste.**
- **Results are presented as charts and tables.**

Summary of Report

- **2018 Chemical emissions have decreased by 10% from previous year.**
- **Chemical emissions Per Kg. of production have leveled out the past 3 years.**
- **Combustion emission levels per kilogram of production have increased from previous year as gas has been used to produce large volume of electricity.**
- **Waste generation has decreased from previous year.**

NIAGARA CAER
Member Companies

Chemtrade Logistics Inc.

Solvay/Cytec Canada Inc.

Durez Canada Company Ltd.

Kemira Chemicals Canada Inc.

Mancuso Chemicals Limited

Oxy Vinyls Canada Co.

Member Companies
Contact Names

Company	Contact Name and Number	
Chemtrade Logistics Inc.	Mike Rumble	437 220-1043
	Joe Iuliano	905-354-3233
CYTEC Canada Inc.	Jozef Olejarz	905 374-5851
	Christine Mariotti	905 374-5849
Durez Canada Company Ltd.	Robert Hunt	905 346-8615
	Kevin Rady	905 346-8625
Kemira Chemicals Canada Inc.	Oksana Shaw	905-688-6470
	Megan Bonaldo	905-688-6470
Mancuso Chemicals Ltd.	Tom Metcalf	905-357-3626
	Bob Montgomery	905-357-3626
Oxy Vinyls Canada Co.	Jim Segada	905-374-5601
	Jane Perz	905-374-5629

Chemicals Manufactured and Uses

- Solvay/Cytec: Phosphine, Fumigants, Mineral Extractants, Specialty Phosphine Chemicals
  Electronics Industry, Metal Recovery, Mining industry, Fumigation, Biocides
- Durez: Phenolic Resins and Compounds,
  Automotive, Brake pistons, Clutch Facings, Electrical Applications.
- Chemtrade Logistics: Distributes Sulphur, Acid and Alumina Trihydrate
  Products, and Molten Sulphur.
  Water Treatment, Pulp and paper, Automotive, mining and plastics.
- Oxy Vinyls: PVC Resins
  Construction: Pipe & fittings, House Siding, Window Frames, Floors, Wallpaper, Fencing, roof and pool membranes. Packaging, Medical Tubing, Wire and Cable, Automotive dashes, bumpers and trim.
- Kemira: Defoamers, Antifoams, sizing agent, Cleaners and specialty Chemicals.
  Water treatment and allied processes in pulp and paper production; oil & mining processes, and paint formulation.
- Mancuso: Phenolic, Furan and Alkyd Resins, Aryl Sulfonic Acids,
  Binder systems for foundries and Alkyds for Industrial Coatings.

NIAGARA CAER GROUP
2018 COMPOSITE PROFILE
For 2019 NERM Report

		2018	2017
Number of Employees		416	392
Payroll (Including Benefits)	$	44,098,720	41,498,186
Taxes	$	1,313,564	1,272,686
Utilities	$	9,766,704	10,549,153
Value of Supplies and Services	$	27,887,669	26,853036
Value of Sales	$	629,402,590	554,660,628
Percent of Products Exported	%	77	79.5
Production Levels,	kg	343,598,706	315,694,173
2019 Production Estimate,	kg	348,095,925	
Charity Support (United Way etc.)	$	57,900	56,200

Explanations

Chemical Emissions

- **Chemical emissions for 2018 decreased by10% from 2017 levels**
- **Production levels were up by 9% from 2017.**
- **2018 emission levels decreased by 10% despite 9% higher production levels.**
- **Chemical emissions continue on a downward trend since 2004**
- **Chemical emissions per 1000 kg of production decreased by 10% from previous year but remain relatively constant for the past few years.**

Chemical Wastes

- **Chemical wastes to landfill and incineration increased slightly (6%) from 2017 levels.**
- **There is more emphasis put on recycle and treatment of waste.**
- **Chemical wastes per kg of production decreased from the previous year despite higher production levels**
- **Chemical wastes are sometimes accumulated over time and sent for treatment.**
- **Plants are doing a great job in controlling waste to landfill, incineration and water.**
- **The majority of wastes are recycled/treated waste.**

Combustion Emissions

- **Greenhouse gases were higher than 2017 levels.**
- **The increase in 2017 was largely due to one of the plants using natural gas to produce high volume of electricity in a gas fired generator. This also produced steam for production processes.**
- **Combustion emissions are tied directly to production levels and heating requirements.**
- **Combustion levels are variable due to weather conditions.**

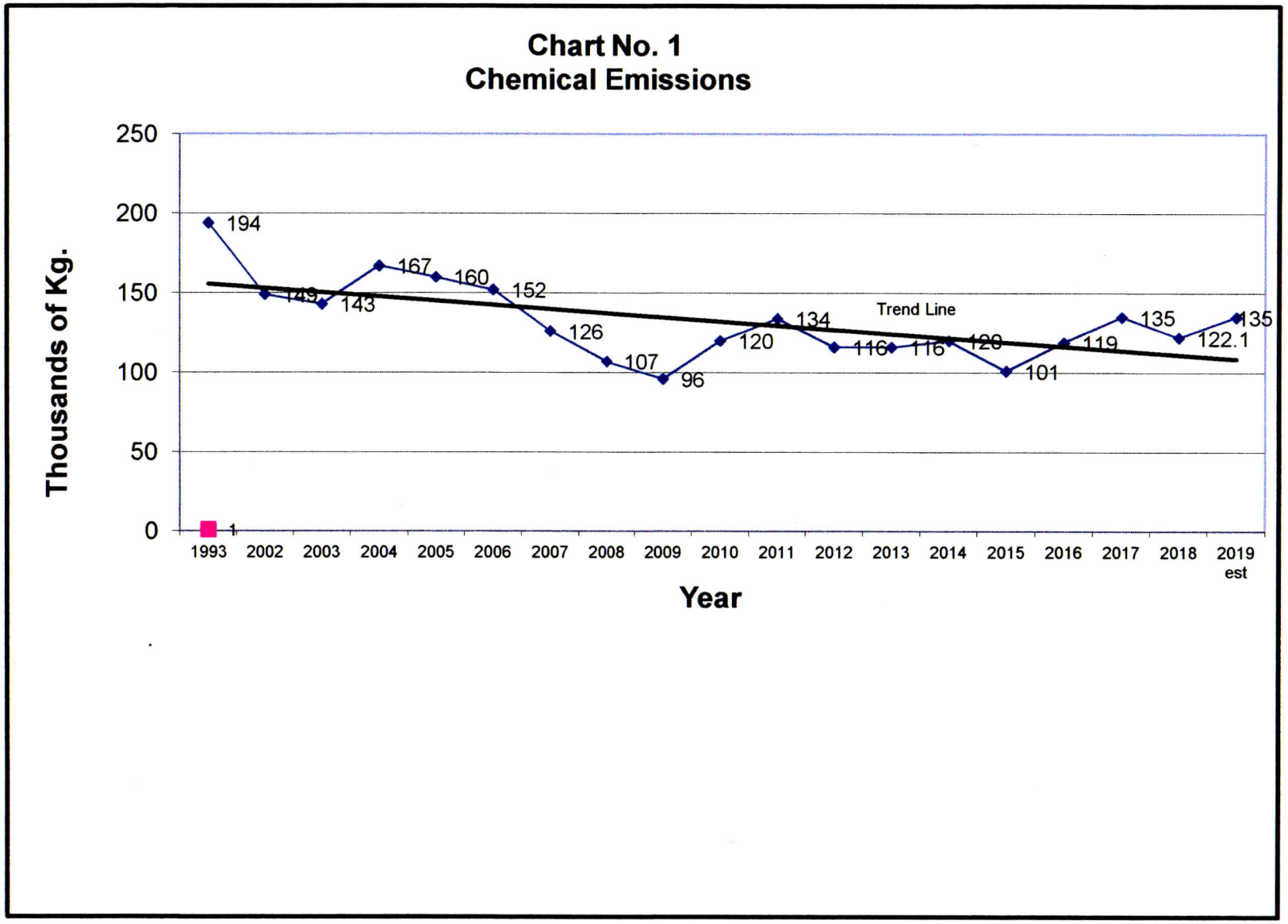


Chart No. 1
Chemical Emissions
Thousands of Kg.
250
200
150
100
50
0
194
149
143
167
160
152
126
107
96
120
134
116
116
120
101
119
135
122.1
135
Trend Line
1
1993
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019 est
Year

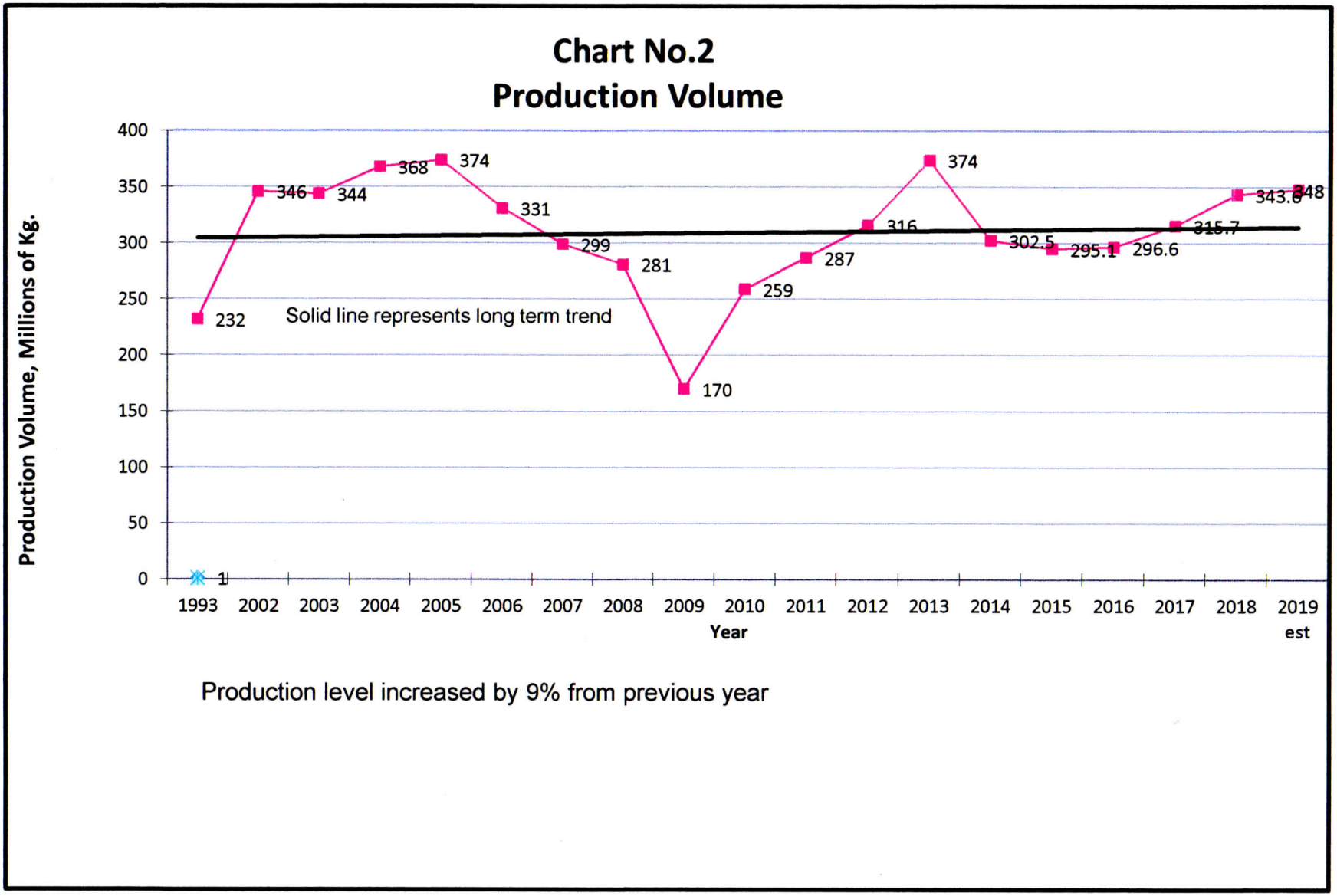
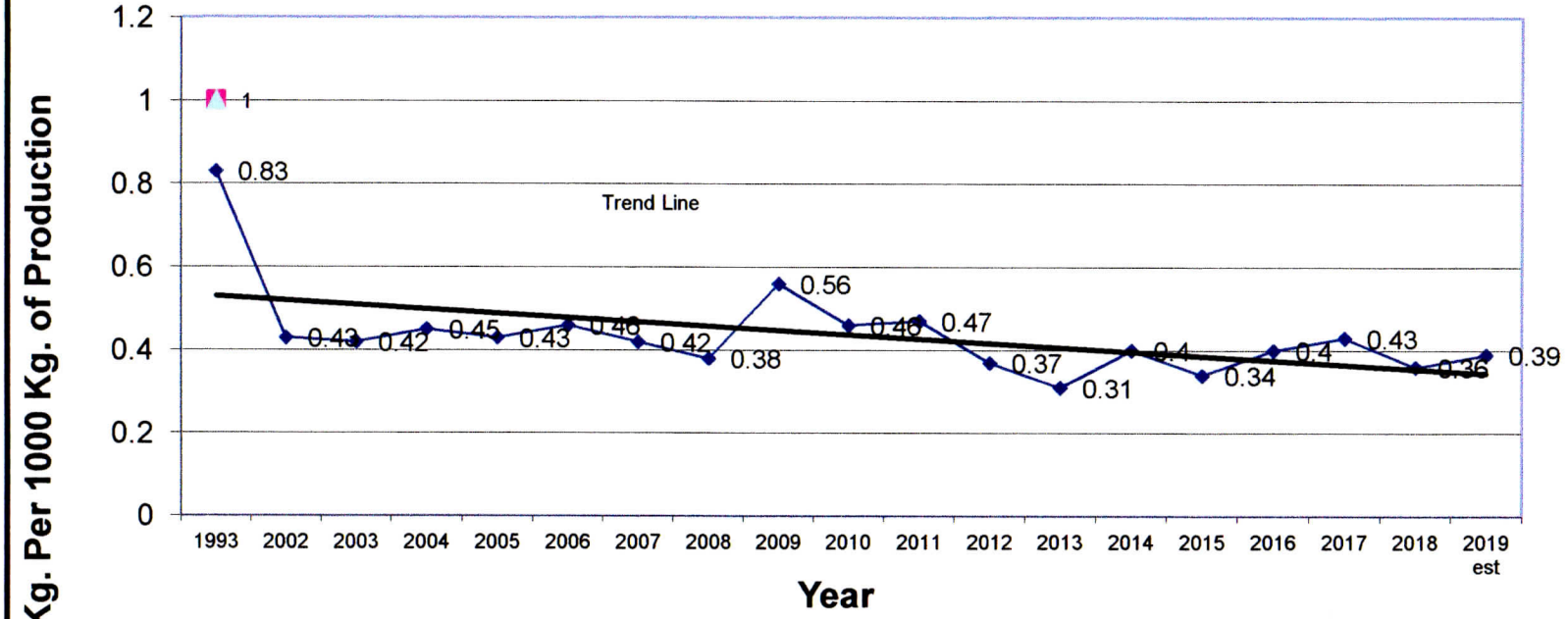


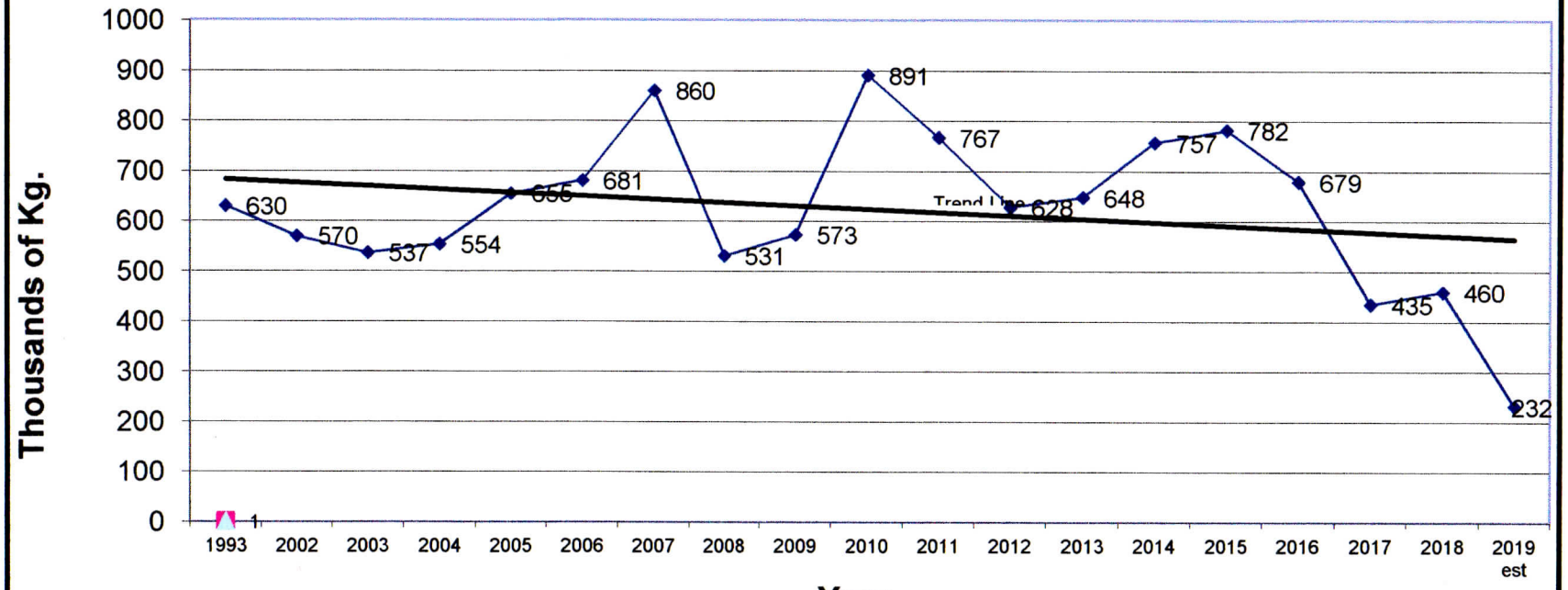
Chart No.2
Production Volume
Production Volume, Millions of Kg.
400
350
300
250
200
150
100
50
0
232
346
344
368
374
331
299
281
170
259
287
316
374
302.5
295.1
296.6
315.7
343.6
348
Solid line represents long term trend
1993
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019 est
Year
Production level increased by 9% from previous year

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



Chemical emissions per kg of production have decreased by 10% from previous year, but have remained reletively constant for the past few years.

Chart No. 4
Chemical Wastes



Chemical Wastes are accumulated over time and periodically shipped out for treatment. As a result, depending on the shipping dates, there can be big swings in "apparent" generation of wastes. Chemical waste has decreased from previous years but is up slightly from previous year (2017).

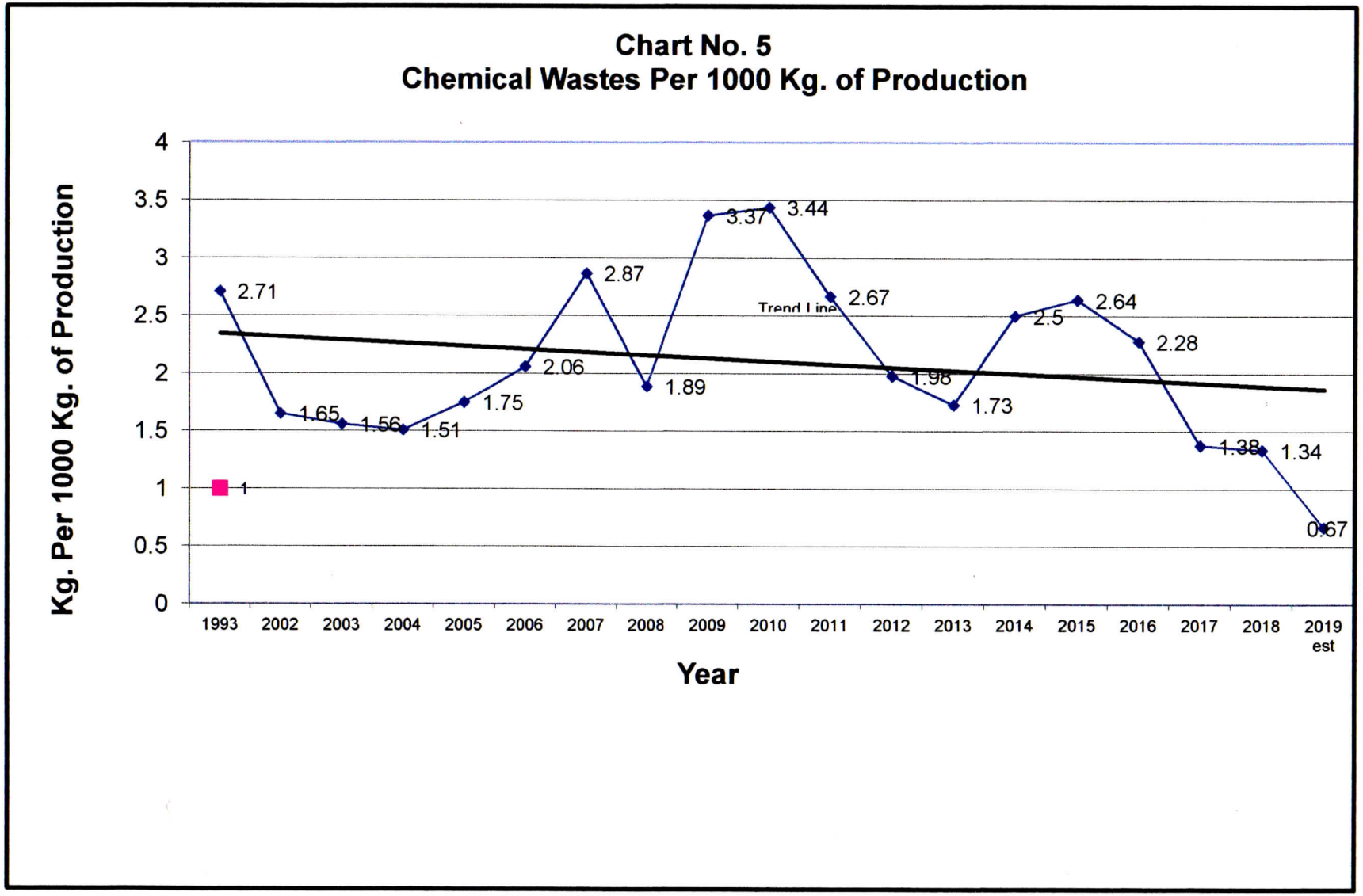
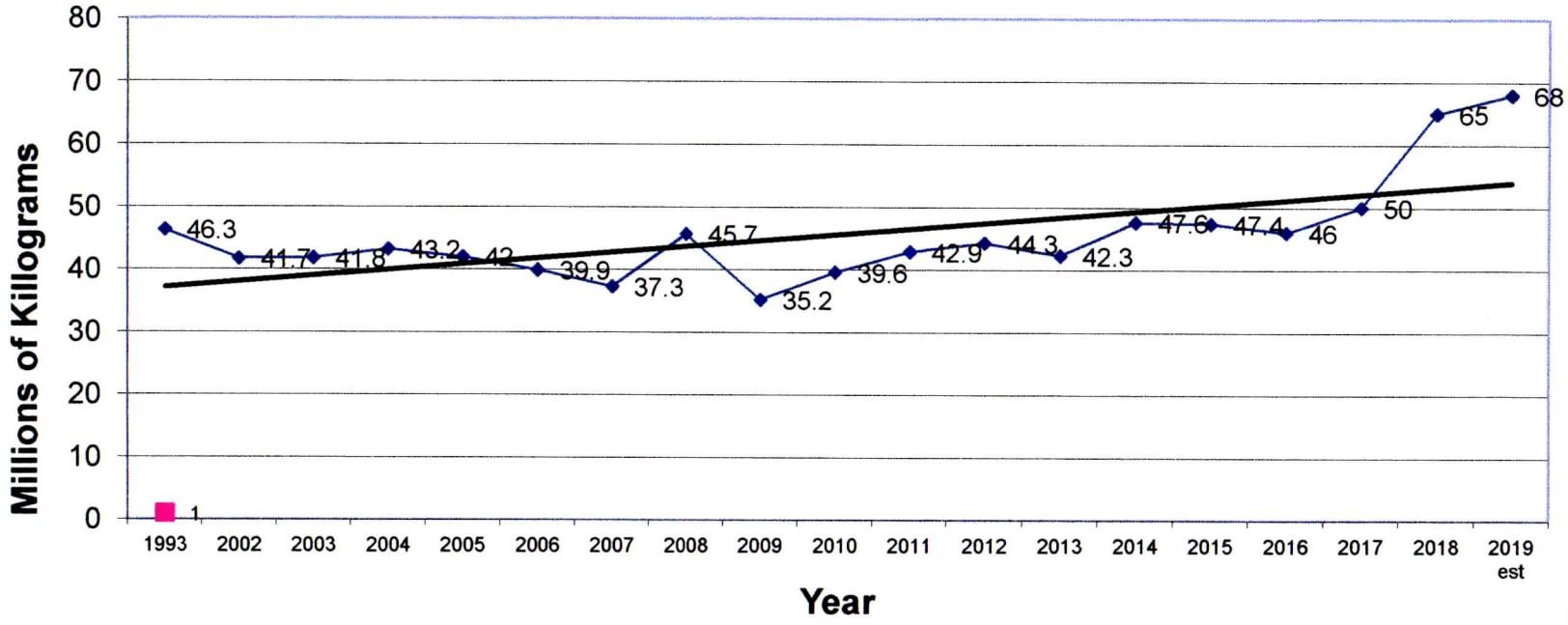


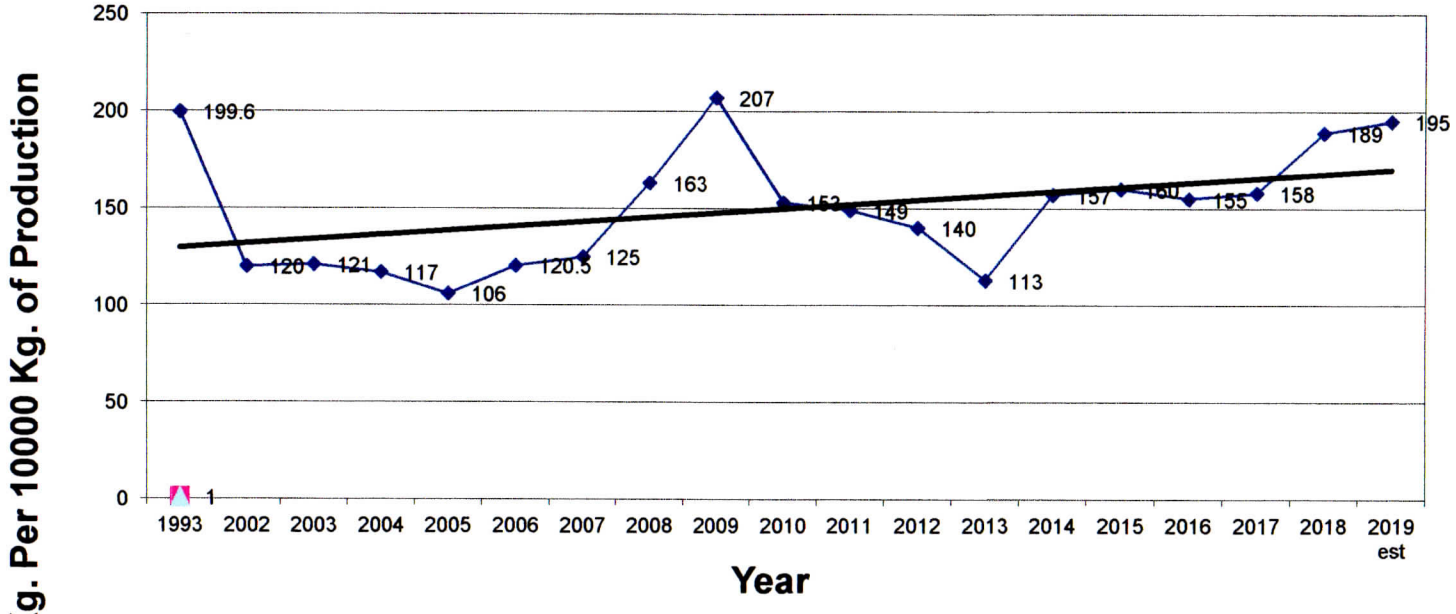
Chart No. 5
Chemical Wastes Per 1000 Kg. of Production
Kg. Per 1000 Kg. of Production
4
3.5
3
2.5
2
1.5
1
0.5
0
2.71
1.65
1.56
1.51
1.75
2.06
2.87
1.89
3.37
3.44
2.67
1.98
1.73
2.5
2.64
2.28
1.38
1.34
0.67
Trend Line
1993
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019 est
Year

Chart No. 6
Combustion Emissions



Combustion emissions increase as production increases as fuel for process steam and heating requirements increase. There was a large increase in combustion emissions due to gas consumed to produce a large volume of electricity by a gas fired generator.

Chart No. 7
Combustion Emissions per 10000 Kg. of Production



Combustion emissions per kg of production increased due to gas used in the generation of electrical power.

Chemical Emissions to Air and Water

Year 2018 Emissions and Comparisons with 2017 Results

Table 1

Plant No.	Chemical Name	Amount Released in 2018 Kilograms		Total 2018 kg.	Total 2017 kg.	% Change From 2017	Estimate 2019 kg.
		Waterway	Air				
2	Nitrogenous Material	861		861	655	+24	905
1,2,3	Ammonia	1085	11075	12160	10,897	+12	12,500
2,3,5,6	Methanol		169	169	140	+20	180
2	Iso Octane		2287	2287	7,515	-70	2,400
2	Vinyl Chloride	1	507	508	354	+43	530
3	White Mineral Oil**		709	709	531	+33	825
3,5	Ethyl Alcohol		62,439	62,439	59,536	+5	63,260
1,2	Nitrate Ion	23,535		23,535	25,254	-7	23,800
1,5	Isopropanol		72	72	45	+60	145
2,3,6	Phenol		17,459	17,459	28,534	-39	28,000
1,3,6	Formaldehyde		15	15	20	-25	15
5	Sodium Metasilicate**		0	0	102	-100	0
2	Oil and Grease	1,117		1,117	965	+15	1,175
2	Phosphorus Salts	116		116	124	-6	120
2	Aluminum Ion	145		145	130	+12	150
5	Sodium Gluconate**			0	132	-100	0
4	Sulphur Dioxide		178	178	0	+100	
	Emissions less than 100 kg./yr.*	5	312	317	373	-15	320
	Total Emissions, kg.	26,865	95,222	122,087	135,306	-10	134,476

Identification of Companies: (1) Solvay/Cytec (2) Oxy Vinyls (3) Durez (4) Chemtrade Logistics (5) Kemira Chemicals (6) Mancuso Chemicals

***Includes: zinc; HCFC; cyanide; calcium hydroxide; ferric oxide; carbon black; naphthalene; 1,2,4-trimethyl benzene; furfuryl alcohol; ethyl benzene; gasoline, Toluene, Xylene**

**** New Chemicals added to the list in 2017**

Chemical Wastes

Year 2018 Data and Comparisons with 2017 and 2019 Estimates

Table 2

Plant No.	Chemical Name	Amount Transferred in 2018 Kilograms			Total 2018 Kg	Total 2017 Kg	% Change From 2017	Estimate 2019 kg.
		Landfill	Incinerated	Recycled/ Treated	Does not include recycled.	Does not include recycled		Does not include recycle mat's
1	Tributyl-Phosphine Sulfide					0		
3,6	Phenol	1,792	231	155,559	2,023	59,537	-96	2,000
1,2,5,6	Liquid Industrial Waste (Oils,etc)		9,625	295,842	9,625	28,291	-66	35,000
2	Vinyl Resins	125,056		554,740	125,056	47,236	+164	125,000
1	Phosphorus Salts					0		
1,2,4,5	Waste Misc. Haz. Prod. & Rinses	98,403	225,055	13,498	323,458	295,856	+9	55,000
3	Formaldehyde	100	11	10,981	111	4,180	-98	120
4	Sodium Hydroxide			2,540	0	0		2,500
6	Polymer Resin Solutions ***			10,000		0		12,000
Chemicals with wastes of 100 Kg. or less per year **								
Total Chemical Wastes		225,351	234,922	1,043,160	460,273	435,100	+6	231,620

Identification of Companies: (1) Solvay/Cytec (2) Oxy Vinyls (3) Durez (4) Chemtrade Logistics (5) Kemira Chemicals (6) Mancuso Chemical

** Includes: Mercury and Batteries.

*** Not reported in previous years.

Combustion Emissions

Burning Fuel For Steam Generation And Drying

Emissions for 2018 and 2017 and Estimates for 2019

Table 3

Combustion Product Component		Amount Released		
		2018	2017	2019 Estimate
Carbon Dioxide	1000 Metric tonnes	65.3	49.87	68.3
Nitrogen Dioxide	Metric tonnes	63.28	44.75	17.4
Carbon Monoxide	Metric tonnes	10.3	29.40	10.2
Sulfur Oxides	Metric tonnes	0.099	0.746	0.090
Methane	Metric tonnes	0.345	1.140	0.327
Volatile Organic Carbon	Metric tonnes	0.849	2.96	0.838
Totals	1000 Metric tonnes	65.4	49.95	68.4

Non Plant CAER Members

Fire Departments From

Fort Erie, Niagara Falls, Thorold, St Catharines

Niagara Region Police

CN Police

Niagara Region EMS

Niagara Health System

Niagara College

Associate CAER Members

First Response Environmental

Terrapure Emergency Response Services

Quantum Murray Emergency Response and Training

GHD Incident Response Services

Spartan Response

Niagara CAER Group

Community Awareness – Emergency Response

For more information visit the web site at
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