Hamilton Works

2017 Annual Toxic Substances Reduction Report

(O. Reg. 455/09)

Issued June 1, 2018

Basic Facility Information

Section 1 – Facility Information	
Owner	Stelco Inc.
Facility name	Hamilton Works
Address	386 Wilcox Street
City	Hamilton
Province	Ontario
Postal Code	L8N 3T1
Spatial Coordinates (NAD83)	UTM Zone: 17 UTM Easting: 595368 UTM Northing: 4791397
Section 2 – Owner's Mailing Address	
Same as above (Y / N)	Y
Address	
City	
Province	
Postal code	
Section 3 – Owner's Primary Contact Person	
Name	Andrew Sebestyen
Title	Manager, Environmental Department
Phone	(905) 528-2511 ext 2547
Fax	(905)777-7658
Email address	ASebestyen@uss.com
Section 4 – Additional Facility Information	
NAICS Code	331110, 324190
NPRI ID	2984
MOE ID Number (O. Reg 127/01)	5097
# of Employees	862
Licence # of Toxic Substance Reduction Planner	TSRP0066

List of Toxic Substances at the Facility

Compound	CAS No.
Acetone	67-64-1
Benzene	71-43-2
Carbon Monoxide	630-08-0
Chlorine - not chloride	7782-50-5
Chromium VI (and its compounds)	1333-82-0
Ethylene (C2H4)	74-85-1
Hydrochloric Acid	7647-01-0
Hydrogen Sulphide	7783-06-4
Lead	7439-92-1
Manganese	7439-96-5
Mercury	7439-97-6
Methanol	67-56-1
Naphthalene	91-20-3
N-Hexane	110-54-3
Nitrogen oxides (as NO2)	11104-93-1
PAH - Acenaphthylene	208-96-8
PAH - Benzo(a)anthracene	56-55-3
PAH - Benzo(a)phenanthrene (Chrysene)	218-01-9
PAH - Benzo(a)Pyrene	50-32-8
PAH - Benzo(b)fluoranthene	205-99-2
PAH - Benzo(e)pyrene	192-97-2
PAH - Benzo(g,h,i)perylene	191-24-2
PAH - Benzo(j)fluoranthene	205-82-3
PAH - Benzo(k)fluoranthene	207-08-9
PAH - Dibenzo(a,h)anthracene	53-70-3
PAH - Dibenzo(a,i)pyrene	189-55-9
PAH - Fluoranthene	206-44-0
PAH - Indeno(1,2,3-c,d)pyrene	193-39-5
PAH - Perylene	198-55-0
PAH - Phenanthrene	85-01-8
PAH - Pyrene	129-00-0
Phosphorus (total)	NA-22
PM10 - Particulate Matter <= 10 Microns	N/A - M09
PM2.5 - Particulate Matter <= 2.5 Microns	N/A - M10
Total Particulate Matter or TSP	N/A - M08
Selenium (and its compounds)	7782-49-2
Sulphur Dioxide	7446-09-5
Sulphuric Acid	7664-93-9
Total reduced sulphur (H2S + CS2)	
VOC	N/A - M16
Zinc	7440-66-6

2017 Toxic Substance Accounting

Compound	CAS No.	Used, tonnes	Created, tonnes	Destroyed, tonnes	Released to Air, tonnes	Released to Water CitySewer, tonnes	Released to Water Outfall, tonnes	Transferred/ Recycled Offsite, tonnes	Released to Land (Disposed Offsite), tonnes	Total 'As Contained' in Product and Process, tonnes
Acetone	67-64-1	-	> 10 to 100	-	> 10 to 100	-	-	-	-	-
Benzene	71-43-2	> 1000 to 10000	> 1000 to 10000	> 1000 to 10000	> 10 to 100	-	-	> 0 to 1	-	> 1000 to 10000
Carbon Monoxide	630-08-0	> 1000 to 10000	> 100 to 1000	> 1000 to 10000	> 100 to 1000	-	-	-	-	-
Chlorine - not chloride	7782-50-5	-	> 10 to 100	> 10 to 100	> 0 to 1	-	-	-	-	-
Chromium VI (and its compounds)	1333-82-0	> 1 to 10	-	-	-	-	-	-	> 0 to 1	> 1 to 10
Ethylene (C2H4)	74-85-1	> 1 to 10	> 10 to 100	> 1 to 10	> 10 to 100	-	-	-	-	-
Hydrochloric Acid	7647-01-0	> 1 to 10	> 1 to 10	> 10 to 100	-	-	-	-	-	-
Hydrogen Sulphide	7783-06-4	> 100 to 1000	> 10 to 100	> 100 to 1000	> 10 to 100	-	-	-	-	-
Lead	7439-92-1	> 10 to 100	-	-	> 0 to 1	-	-	> 10 to 100	> 0 to 1	> 1 to 10
Manganese	7439-96-5	> 1000 to 10000	-	-	> 1 to 10	-	-	> 100 to 1000	> 0 to 1	> 1000 to 10000
Mercury	7439-97-6	> 0 to 1	-	-	> 0 to 1	-	-	> 0 to 1	> 0 to 1	> 0 to 1
Methanol	67-56-1	> 1 to 10	> 1 to 10	-	> 1 to 10	-	-	-	-	-
Naphthalene	91-20-3	> 100 to 1000	> 1000 to 10000	> 100 to 1000	> 0 to 1	-	-	> 0 to 1	> 1 to 10	> 1000 to 10000
N-Hexane	110-54-3	-	> 1 to 10	-	> 1 to 10	-	-	> 0 to 1	-	> 0 to 1
Nitrogen oxides (as NO2)	11104-93-1	-	> 1000 to 10000	-	> 1000 to 10000	-	-	-	-	-
PAH - Acenaphthylene	208-96-8	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Benzo(a)anthracene	56-55-3	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Benzo(a)phenanthrene (Chrysene)	218-01-9	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Benzo(a)Pyrene	50-32-8	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Benzo(b)fluoranthene	205-99-2	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Benzo(e)pyrene	192-97-2	> 0 to 1	> 1 to 10	> 0 to 1	> 0 to 1	-	-	-	> 0 to 1	> 1 to 10
PAH - Benzo(g,h,i)perylene	191-24-2	> 0 to 1	> 1 to 10	> 0 to 1	> 0 to 1	-	-	-	> 0 to 1	> 1 to 10
PAH - Benzo(j)fluoranthene	205-82-3	> 1 to 10	> 10 to 100	> 1 to 10	> 0 to 1	-	-	-	> 0 to 1	> 10 to 100
PAH - Benzo(k)fluoranthene	207-08-9	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Dibenzo(a,h)anthracene	53-70-3	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Dibenzo(a,i)pyrene	189-55-9	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Fluoranthene	206-44-0	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Indeno(1,2,3-c,d)pyrene	193-39-5	> 1 to 10	> 10 to 100	> 1 to 10	> 0 to 1	-	-	-	> 0 to 1	> 10 to 100
PAH - Perylene	198-55-0	> 1 to 10	> 10 to 100	> 1 to 10	> 0 to 1	-	-	-	> 0 to 1	> 10 to 100
PAH - Phenanthrene	85-01-8	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
PAH - Pyrene	129-00-0	> 10 to 100	> 100 to 1000	> 10 to 100	> 0 to 1	-	-	-	> 0 to 1	> 100 to 1000
Phosphorus (total)	NA-22	> 100 to 1000	-	> 10 to 100	> 0 to 1	> 0 to 1	> 0 to 1	-	> 0 to 1	> 100 to 1000
PM10 - Particulate Matter <= 10 Microns	N/A - M09	-	> 100 to 1000	-	> 100 to 1000	-	-	-	-	> 100 to 1000
PM2.5 - Particulate Matter <= 2.5 Microns	N/A - M10	-	> 100 to 1000	-	> 100 to 1000	-	-	-	-	> 100 to 1000
Total Particulate Matter or TSP	N/A - M08	-	> 1000 to 10000	-	> 100 to 1000	-	-	-	-	> 100 to 1000
Selenium (and its compounds)	7782-49-2	> 1 to 10	-	-	> 0 to 1	-	-	> 0 to 1	> 0 to 1	> 1 to 10
Sulphur Dioxide	7446-09-5	-	> 1000 to 10000	-	> 1000 to 10000	-	-	-	-	-
Sulphuric Acid	7664-93-9	> 100 to 1000	-	> 100 to 1000	-	-	-	-	> 10 to 100	-
Total reduced sulphur (H2S + CS2)	0	> 100 to 1000	> 10 to 100	> 100 to 1000	> 10 to 100	-	-	-	-	> 10 to 100
VOC	N/A - M16	-	> 10 to 100	-	> 10 to 100	-	-	-	-	-
Zinc	7440-66-6	> 10000 to 1000000	-	-	> 0 to 1	-	-	> 1000 to 10000	> 0 to 1	> 10000 to 1000000

Comparison of Quantification (2017) to Previous Reporting Period (2016) - % Change

Compound	CAS No.	Used	Created	Destroyed	Released to Air, tonnes	Released to Water CitySewer	Released to Water Outfall	Transferred/Recycled Offsite	Released to Land (Disposed Offsite)	Total 'As Contained' in Product and Process	Reason of % Difference in 2017 and 2016 Used or Created Quantities
Acetone	67-64-1		314.48		314.48						First time reporting of qty in CO stack and pushing
Benzene	71-43-2	11.27	(3.24)	11.28	(9.94)			(89.77)		(3.21)	Increased coke production
Carbon Monoxide	630-08-0	11.28	(7.30)	11.28	(7.30)						same
Chlorine - not chloride	7782-50-5		4.86	4.86	19.85						Increased coke production and usage of baywater
Chromium VI (and its compounds)	1333-82-0	(10.02)							(8.38)	(10.02)	Reduced galvanized production
Ethylene (C2H4)	74-85-1	11.28	17.36	11.28	17.36						Increased coke production
Hydrochloric Acid	7647-01-0	(45.68)	25.20	(27.06)							Reduced usage due to best practices
Hydrogen Sulphide	7783-06-4	11.28	17.36	11.28	17.36						Increased coke production
Lead	7439-92-1	(42.76)			(3.78)			(48.08)	(27.77)	2.26	Reduced shipment of BOF oxides and slag/sinter fines
Manganese	7439-96-5	(20.18)			(3.54)			(70.65)		(4.23)	same
Mercury	7439-97-6	1.91			17.36			(32.15)	(30.08)	2.33	Increased coke production
Methanol	67-56-1	(2.30)	19.85		4.17						same
Naphthalene	91-20-3	11.59	(3.32)	11.59	12.85		(100.00)	(89.77)	(24.89)	(3.30)	same
N-Hexane	110-54-3		(19.86)		(19.90)			(89.77)		105.67	Reduced nat gas use due to availability of COG
Nitrogen oxides (as NO2)	11104-93-1		7.94		7.94						Increased coke production
PAH - Acenaphthylene	208-96-8	11.59	2.39	11.28	(19.90)		(100.00)		(26.34)	2.51	same
PAH - Benzo(a)anthracene	56-55-3	11.59	2.39	11.28	18.66		(100.00)		(26.34)	2.51	same
PAH - Benzo(a)phenanthrene (Chrysene)	218-01-9	11.59	2.39	11.28	18.39		(100.00)		(26.34)	2.51	same
PAH - Benzo(a)Pyrene	50-32-8	11.59	2.39	11.28	18.87		(100.00)		(26.34)	2.51	same
PAH - Benzo(b)fluoranthene	205-99-2	11.59	2.39	11.28	18.21		(100.00)		(25.89)	2.51	same
PAH - Benzo(e)pyrene	192-97-2	11.59	2.41	11.28	18.28		(100.00)		(26.34)	2.51	same
PAH - Benzo(g,h,i)perylene	191-24-2	11.59	2.41	11.28	18.08		(100.00)		(26.34)	2.51	same
PAH - Benzo(j)fluoranthene	205-82-3	11.59	2.40	11.28	17.93		(100.00)		(26.34)	2.51	same
PAH - Benzo(k)fluoranthene	207-08-9	11.59	2.39	11.28	17.74		(100.00)		(26.34)	2.51	same
PAH - Dibenzo(a,h)anthracene	53-70-3	11.59	2.39	11.28	19.31		(100.00)		(26.34)	2.51	same
PAH - Dibenzo(a,i)pyrene	189-55-9	11.59	2.39	11.28	34.93		(100.00)		(26.34)	2.51	same
PAH - Fluoranthene	206-44-0	11.59	2.39	11.28	18.92		(100.00)		(26.34)	2.51	same
PAH - Indeno(1,2,3-c,d)pyrene	193-39-5	11.59	2.39	11.28	17.01		(100.00)		(26.34)	2.51	same
PAH - Perylene	198-55-0	11.59	2.39	11.28	18.94		(100.00)		(26.34)	2.51	same
PAH - Phenanthrene	85-01-8	11.59	2.39	11.28	19.60		(100.00)		(26.34)	2.51	same
PAH - Pyrene	129-00-0	11.59	2.39	11.28	18.85		(100.00)		(26.34)	2.51	same
Phosphorus total	NA-22	9.98		(0.12)	(3.54)	52.86	1.41	(100.00)	(26.34)	16.65	same
PM10 - Particulate Matter <= 10 Microns	N/A - M09		10.54		7.37					13.23	same
PM2.5 - Particulate Matter <= 2.5 Microns	N/A - M10		13.87		13.68					13.99	same
Total Particulate Matter or TSP	N/A - M08		8.70		4.33					12.45	same
Selenium (and its compounds)	7782-49-2	19.84			(3.54)			(89.77)	(26.34)	9.62	same
Sulphur Dioxide	7446-09-5		13.92		13.92						same
Sulphuric Acid	7664-93-9	25.73		7.82							Idling of leaking tank and disposal of leftover
Total reduced sulphur (as H2S)		11.28	13.29	11.28	17.36					11.76	Increased coke production
VOC - see below re speciated VOC	N/A - M16		3.32		3.32						same
Zinc	7440-66-6	(14.95)			(3.54)			(46.08)	25.13	(8.18)	Reduced shipment of zinc dross and legacy piles

Comparison of Quantification (2017) to Previous Reporting Period (2016) - Quantity Change

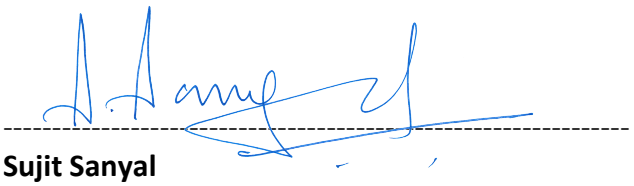
Compound	CAS No.	Used, tonnes	Created, tonnes	Destroyed, tonnes	Released to Air, tonnes	Released to Water CitySewer, tonnes	Released to Water Outfall, tonnes	Transferred/Recycled Offsite, tonnes	Released to Land (Disposed Offsite), tonnes	Total 'As Contained' in Product and Process	In (Total), tonnes	Out (Total), tonnes
Acetone	67-64-1	-	14.63	-	14.63	-	-	-	-	-	14.63	14.63
Benzene	71-43-2	275.50	(113.94)	275.55	(1.33)	-	-	(0.00)	-	(112.61)	161.56	161.61
Carbon Monoxide	630-08-0	762.01	(11.95)	762.01	(11.95)	-	-	-	-	-	750.06	750.06
Chlorine - not chloride	7782-50-5	-	0.61	0.61	0.00	-	-	-	-	-	0.61	0.61
Chromium VI (and its compounds)	1333-82-0	(0.23)	-	-	-	-	-	-	(0.00)	(0.23)	(0.23)	(0.23)
Ethylene (C2H4)	74-85-1	0.23	1.52	0.23	1.52	-	-	-	-	-	1.75	1.75
Hydrochloric Acid	7647-01-0	(6.18)	1.21	(4.96)	-	-	-	-	-	-	(4.96)	(4.96)
Hydrogen Sulphide	7783-06-4	11.83	1.73	11.83	1.73	-	-	-	-	-	13.56	13.56
Lead	7439-92-1	(23.78)	-	-	(0.00)	-	-	(24.09)	(0.00)	0.11	(23.78)	(23.99)
Manganese	7439-96-5	(872.66)	-	-	(0.14)	-	-	(733.57)	0.01	(138.96)	(872.66)	(872.66)
Mercury	7439-97-6	0.00	-	-	0.00	-	-	(0.00)	(0.00)	0.00	0.00	0.00
Methanol	67-56-1	(0.09)	0.32	-	0.23	-	-	-	-	-	0.23	0.23
Naphthalene	91-20-3	29.25	(75.85)	29.25	0.10	-	(0.00)	(0.00)	(0.70)	(75.25)	(46.61)	(46.61)
N-Hexane	110-54-3	-	(0.44)	-	(0.44)	-	-	(0.00)	-	0.00	(0.44)	(0.44)
Nitrogen oxides (as NO2)	11104-93-1	-	76.97	-	76.97	-	-	-	-	-	76.97	76.97
PAH - Acenaphthylene	208-96-8	7.59	12.01	7.11	(0.00)	-	(0.00)	-	(0.19)	12.68	19.60	19.60
PAH - Benzo(a)anthracene	56-55-3	2.46	3.90	2.31	0.00	-	(0.00)	-	(0.06)	4.11	6.36	6.36
PAH - Benzo(a)phenanthrene (Chrysene)	218-01-9	3.78	5.98	3.54	0.00	-	(0.00)	-	(0.10)	6.31	9.75	9.75
PAH - Benzo(a)Pyrene	50-32-8	2.37	3.74	2.22	0.00	-	(0.00)	-	(0.06)	3.95	6.11	6.11
PAH - Benzo(b)fluoranthene	205-99-2	2.33	3.68	2.18	0.00	-	(0.00)	-	(0.06)	3.88	6.00	6.00
PAH - Benzo(e)pyrene	192-97-2	0.09	0.15	0.09	0.00	-	(0.00)	-	(0.00)	0.16	0.25	0.25
PAH - Benzo(g,h,i)perylene	191-24-2	0.06	0.10	0.06	0.00	-	(0.00)	-	(0.00)	0.11	0.17	0.17
PAH - Benzo(j)fluoranthene	205-82-3	0.16	0.25	0.15	0.00	-	(0.00)	-	(0.00)	0.26	0.41	0.41
PAH - Benzo(k)fluoranthene	207-08-9	1.49	2.36	1.40	0.00	-	(0.00)	-	(0.04)	2.49	3.85	3.85
PAH - Dibenzo(a,h)anthracene	53-70-3	2.64	4.17	2.47	0.00	-	(0.00)	-	(0.07)	4.41	6.81	6.81
PAH - Dibenzo(a,i)pyrene	189-55-9	2.37	3.74	2.22	0.00	-	(0.00)	-	(0.06)	3.95	6.11	6.11
PAH - Fluoranthene	206-44-0	4.97	7.87	4.66	0.01	-	(0.00)	-	(0.13)	8.30	12.84	12.84
PAH - Indeno(1,2,3-c,d)pyrene	193-39-5	0.89	1.41	0.84	0.00	-	(0.00)	-	(0.02)	1.49	2.31	2.31
PAH - Perylene	198-55-0	0.63	1.00	0.59	0.00	-	(0.00)	-	(0.02)	1.05	1.63	1.63
PAH - Phenanthrene	85-01-8	7.75	12.28	7.26	0.02	-	(0.00)	-	(0.20)	12.94	20.03	20.03
PAH - Pyrene	129-00-0	4.16	6.58	3.90	0.01	-	(0.00)	-	(0.10)	6.95	10.75	10.75
Phosphorus (total)	NA-22	14.62	-	(0.07)	(0.01)	0.03	0.00	(0.01)	(0.02)	14.70	14.62	14.62
PM10 - Particulate Matter <= 10 Microns	N/A - M09	-	50.00	-	16.06	-	-	-	-	33.93	50.00	50.00
PM2.5 - Particulate Matter <= 2.5 Microns	N/A - M10	-	43.96	-	16.79	-	-	-	-	27.17	43.96	43.96
Total Particulate Matter or TSP	N/A - M08	-	110.68	-	25.44	-	-	-	-	85.24	110.68	110.68
Selenium (and its compounds)	7782-49-2	0.29	-	-	(0.00)	-	-	(0.02)	(0.00)	0.13	0.29	0.11
Sulphur Dioxide	7446-09-5	-	227.73	-	227.73	-	-	-	-	-	227.73	227.73
Sulphuric Acid	7664-93-9	30.44	-	9.25	-	-	-	-	21.19	-	30.44	30.44
Total reduced sulphur (H2S + CS2)	0	16.96	4.86	16.96	1.73	-	-	-	-	3.12	21.82	21.82
VOC	N/A - M16	-	3.11	-	3.11	-	-	-	-	-	3.11	3.11
Zinc	7440-66-6	(2,309.10)	-	-	(0.00)	-	-	(1,271.33)	0.01	(1,037.92)	(2,309.10)	(2,309.25)

Progress of Toxic Substances Reduction Plans

				2017 Reduction, tonnes			2016 Reduction, tonnes			Plan Timeline	Additional	Plan	Reduction Steps
Compound	**CAS No.**	**Objectives Per Current Version of the Plan**	**Targets, Tonnes**	**Use**	**Creation**	**Discharges**	**Use**	**Creation**	**Discharges**	**Met?**	**Plan?**	**Amendment**	**Taken vs. Plan**
Acetone	67-64-1	to reduce creation to the extent that circumstances permit.	none										
Benzene	71-43-2	to reduce creation to the extent that circumstances permit.	none										
Carbon Monoxide	630-08-0	to reduce creation to the extent that circumstances permit.	24.8		34.3	34.3		24.3	24.3	yes	none	none	same
Chlorine - not chloride	7782-50-5	to reduce creation to the extent that circumstances permit.	16.2		41.5			5.7		yes	none	none	same
Chromium VI (and its compounds)	1333-82-0	to reduce usage to the extent that circumstances permit.	none										
Ethylene (C2H4)	74-85-1	to reduce creation to the extent that circumstances permit.	none										
Hydrochloric Acid	7647-01-0	to reduce usage to the extent that circumstances permit.	25	20.7	7.2		24.9	3.9		yes	none	none	same
Hydrogen Sulphide	7783-06-4	to reduce creation to the extent that circumstances permit.	none										
Lead	7439-92-1	to reduce usage to the extent that circumstances permit.	none										
Manganese	7439-96-5	to reduce usage to the extent that circumstances permit.	none										
Mercury	7439-97-6	to reduce usage to the extent that circumstances permit.	0.00118	0.000186			0.001182			yes	none	none	same
Methanol	67-56-1	to reduce usage to the extent that circumstances permit.	1.15	0			0			no	none	none	same
Naphthalene	91-20-3	to reduce creation to the extent that circumstances permit.	0.0028		0.0019			0.001597		yes	none	none	same
N-Hexane	110-54-3	to reduce creation to the extent that circumstances permit.	0.52		0.733	0.733		0.520	0.520	yes	none	none	same
Nitrogen oxides (as NO2)	11104-93-1	to reduce creation to the extent that circumstances permit.	32.45		44.91	44.91		31.84	31.84	yes	none	none	same
PAH - Acenaphthylene	208-96-8	to reduce creation to the extent that circumstances permit.	0.7165		0.4799			0.4102		yes	none	Updated targets	same
PAH - Benzo(a)anthracene	56-55-3	to reduce creation to the extent that circumstances permit.	0.2324		0.1556			0.1330		yes	none	Updated targets	same
PAH - Benzo(a)phenanthrene (Chrysene)	218-01-9	to reduce creation to the extent that circumstances permit.	0.3565		0.2387			0.2041		yes	none	Updated targets	same
PAH - Benzo(a)Pyrene	50-32-8	to reduce creation to the extent that circumstances permit.	0.2232		0.1495			0.1278		yes	none	Updated targets	same
PAH - Benzo(b)fluoranthene	205-99-2	to reduce creation to the extent that circumstances permit.	0.2194		0.1470			0.1256		yes	none	Updated targets	same
PAH - Benzo(e)pyrene	192-97-2	to reduce creation to the extent that circumstances permit.	0.0089		0.0060			0.0051		yes	none	Updated targets	same
PAH - Benzo(g,h,i)perylene	191-24-2	to reduce creation to the extent that circumstances permit.	0.0060		0.0040			0.0035		yes	none	Updated targets	same
PAH - Benzo(j)fluoranthene	205-82-3	to reduce creation to the extent that circumstances permit.	0.0150		0.0100			0.0086		yes	none	Updated targets	same
PAH - Benzo(k)fluoranthene	207-08-9	to reduce creation to the extent that circumstances permit.	0.1408		0.0943			0.0806		yes	none	Updated targets	same
PAH - Dibenzo(a,h)anthracene	53-70-3	to reduce creation to the extent that circumstances permit.	0.2491		0.1668			0.1426		yes	none	Updated targets	same
PAH - Dibenzo(a,i)pyrene	189-55-9	to reduce creation to the extent that circumstances permit.	0.2232		0.1495			0.1278		yes	none	Updated targets	same
PAH - Fluoranthene	206-44-0	to reduce creation to the extent that circumstances permit.	0.4689		0.3141			0.2685		yes	none	Updated targets	same
PAH - Indeno(1,2,3-c,d)pyrene	193-39-5	to reduce creation to the extent that circumstances permit.	0.0844		0.0565			0.0483		yes	none	Updated targets	same
PAH - Perylene	198-55-0	to reduce creation to the extent that circumstances permit.	0.0596		0.0399			0.0341		yes	none	Updated targets	same
PAH - Phenanthrene	85-01-8	to reduce creation to the extent that circumstances permit.	0.7314		0.4899			0.4188		yes	none	Updated targets	same
PAH - Pyrene	129-00-0	to reduce creation to the extent that circumstances permit.	0.0844		0.2630			0.2248		yes	none	Updated targets	same
Phosphorus total	NA-22	to reduce usage to the extent that circumstances permit.	1.75	0.435			0.692		0.692	yes	none	none	same
PM10 - Particulate Matter <= 10 Microns	N/A - M09	to reduce creation to the extent that circumstances permit.	121.04		50.17	50.17		52.21	52.21	yes	none	none	same
PM2.5 - Particulate Matter <= 2.5 Microns	N/A - M10	to reduce creation to the extent that circumstances permit.	121.04		5.84	5.84		6.09	6.09	yes	none	none	same
Total Particulate Matter or TSP	N/A - M08	to reduce creation to the extent that circumstances permit.	121.04		216.08	216.08		225.32	225.32	yes	none	none	same
Selenium (and its compounds)	7782-49-2	to reduce usage to the extent that circumstances permit.	none										
Sulphur Dioxide	7446-09-5	to reduce creation to the extent that circumstances permit.	0.19		0.25	0.25		0.17	0.17	yes	none	none	same
Sulphuric Acid	7664-93-9	to reduce usage to the extent that circumstances permit.	3.6	0			0			no	none	none	same
Total reduced sulphur (as H2S)	NA-M14	to reduce creation to the extent that circumstances permit.	none										
VOC - see below re speciated VOC	N/A - M16	to reduce creation to the extent that circumstances permit.	none										
Zinc	7440-66-6	to reduce usage to the extent that circumstances permit.	20.2	16.9			17.7			yes	none	Updated targets	same

Certification

As of *June 1, 2018*, I, *Sujit Sanyal*, certify that I have read the records created for the purposes of section 11.2 of Ontario Regulation 455/09(General) made under the Toxics Reductions Act, (2009) in respect of the use and creation of the toxic substances referred to above and am familiar with their contents and to my knowledge they are factually accurate.



Sujit Sanyal
Chief Operating Officer
Stelco Inc.