



Toxic Reduction Act Public Annual Report

Rev. 07/30/20

Company Name: **Birla Carbon Canada Ltd.**
 Trade Name: **BIRLA CARBON**
 Reporting Period: **2019**

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Phone:
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NPRI ID: 2660
 2 Digit NAICS Code: 32 Manufacturing
 4 Digit NAICS Code: 3251 Basic Chemical Manufacturing
 6 Digit NAICS Code: 325189 Other Basic Inorganic Chemicals

Number of full-time employees: 95

Website: www.birlacarbon.com

Latitude: 43.2588N UTM Zone: 17 Datum: WGS84

Longitude: -79.7843E UTM X: 598954

UTM Y: 4790532

Public Contact: **Lori Small** Lori.Small@adityabirla.com

Title: Health, Safety & Environment Manager

Phone: 905-544-3776

Statement of Intent:

Birla Carbon is committed to playing a leadership role in protecting the environment.

Whenever feasible, we will eliminate, or reduce the use and discharge of the substances referenced below, in full compliance with all Federal and Provincial Regulations.

Description of Substances:

All Substances being addressed in this plan (listed below) are grouped together because they are all present in the feedstock raw materials used to manufacture carbon black or created during the manufacturing process, except for Sulphuric Acid which is used to regenerate cation bed of water demineralizer units. The water is used in the manufacturing process.

Reduction Objectives:

Our goals are to optimize the use of our feedstock raw materials by 1.58% for Phase 1 substances, and 0.79% for Phase 2 substances by the end of 2014, and to reduce the use of Sulphuric Acid by 40% in 2012. Goals achieved.

Additional reductions will be achieved through our Yield Improvement Program.

Toxic Substance Reduction Option to be Implemented:

Equipment and process modifications were identified and are being implemented to optimize and reduce the usage of feedstock raw materials and sulphur acid. The activities used to achieve these reductions are considered business confidential.

PHASE 1 SUBSTANCES							
Toxic Substances (CAS #):							
Benzo(a)anthracene (56-55-3)	USED kg	CREATED kg	DESTROYED kg	CONTAINED IN PRODUCT kg	AIR RELEASE kg	DISPOSAL kg	
2011	281986.0800	-	281943.2542	28.0490	0.0203	14.7561	
2012	277551.4200	-	277464.9058	28.6791	0.0203	57.8148	
2013	280570.3200	-	280507.3480	25.0060	0.0200	37.9460	
2013 Reduction from Options Implemented	37.3159	-	37.3075	0.0033	0.0000	0.0050	
%Change from Options Implemented	1.33%	-	1.33%	1.33%	1.33%	1.33%	
2014	296601.7200	-	296573.1990	28.3470	0.0200	0.1540	
2014 Reduction from Options Implemented	35.5922	-	35.5888	0.0034	0.0000	0.0000	
%Change from Options Implemented	1.20%	-	1.20%	1.20%	1.20%	1.20%	
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	2.53%	2.53%	2.53%	
2015	304992.1800	-	304958.9890	27.4740	0.0200	5.6970	
2015 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000	
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%	
2016	362059.8000	-	362032.4790	23.0150	0.0200	4.2860	
%Change from Options Implemented	0.54%	-	0.54%	0.54%	0.54%	0.54%	

2017	280820.1600	-	280572.5900	28.7040	0.0200	218.8460
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2018	336867.6000	-	336836.1510	26.9240	0.0200	4.5040
%Change from Options Implemented	0.27%	-	0.27%	0.27%	0.27%	0.27%
2019	311862.7800	-	311837.1200	23.3910	0.0200	2.2480
2019 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
Year-Over-Year (YOY) Change	-25004.8200	-	-24999.0310	-3.5330	0.0000	-2.2560
% Change	-7.42%	-	-7.42%	-13.12%	0.00%	-50.09%
Comment if Change +/- 10%	YOY change is production volume & feedstock composition dependent.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	3.34%	3.34%	3.34%

Chrysene (218-01-9)	USED kg	CREATED kg	DESTROYED kg	CONTAINED IN PRODUCT kg	AIR RELEASE kg	DISPOSAL kg
2011	299051.5200	-	298184.5213	841.4820	0.0061	15.5106
2012	294348.4800	-	293426.9786	860.3730	0.0061	61.1223
2013	297550.0800	-	296759.8440	750.1770	0.0060	40.0530
2013 Reduction from Options Implemented	39.5742	-	39.4691	0.0998	0.0000	0.0053
%Change from Options Implemented	1.33%	-	1.33%	1.33%	1.33%	1.33%
2014	314551.6800	-	313701.2290	850.3990	0.0060	0.0460
2014 Reduction from Options Implemented	37.7462	-	37.6441	0.1020	0.0000	0.0000
%Change from Options Implemented	1.20%	-	1.20%	1.20%	1.20%	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	2.53%	2.53%	2.53%
2015	323449.9200	-	322619.8940	824.2100	0.0060	5.8100
2015 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2016	383971.2000	-	383276.2970	690.4440	0.0060	4.4530
%Change from Options Implemented	0.54%	-	0.54%	0.54%	0.54%	0.54%
2017	297815.0400	-	296721.9650	861.1200	0.0060	231.9490
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2018	357254.4000	-	356442.0900	807.7230	0.0060	4.5810
%Change from Options Implemented	0.27%	-	0.27%	0.27%	0.27%	0.27%
2019	330736.3200	-	330032.3160	701.7400	0.0060	2.2580
2019 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
Year-Over-Year (YOY) Change	-26518.0800	-	-26409.7740	-105.9830	0.0000	-2.3230
% Change	-7.42%	-	-7.41%	-13.12%	0.00%	-50.71%
Comment if Change +/- 10%	YOY change is production volume & feedstock composition dependent.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	3.34%	3.34%	3.34%

Benzo(a)pyrene (50-32-8)	USED kg	CREATED kg	DESTROYED kg	CONTAINED IN PRODUCT kg	AIR RELEASE kg	DISPOSAL kg
2011	73950.2400	-	71592.0979	2337.4500	1.6951	18.9970
2012	72787.2600	-	70359.5756	2389.9250	1.6951	36.0643
2013	73578.9600	-	71462.8850	2083.8250	1.6950	30.5550
2013 Reduction from Options Implemented	9.7860	-	9.5046	0.2771	0.0002	0.0041
%Change from Options Implemented	1.33%	-	1.33%	1.33%	1.33%	1.33%
2014 Reduction from Options Implemented	9.3340	-	9.0488	0.2835	0.0002	0.0015
%Change from Options Implemented	1.20%	-	1.20%	1.20%	1.20%	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	2.53%	2.53%	2.53%
2015	79983.5400	-	77665.5790	2289.4730	1.6950	26.7930
2015 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2016	94949.4000	-	93018.5380	1917.9000	1.6950	11.2670
%Change from Options Implemented	0.54%	-	0.54%	0.54%	0.54%	0.54%
2017	73644.4800	-	71177.9720	2392.0000	1.6950	72.8130
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2018	88342.8000	-	86074.9150	2243.6750	1.6950	22.5150
%Change from Options Implemented	0.27%	-	0.27%	0.27%	0.27%	0.27%

2019	81785.3400	-	79819.9760	1919.2770	1.6950	14.3920
2019 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
Year-Over-Year (YOY) Change	-6557.4600	-	-6254.9390	-324.3980	0.0000	-8.1230
% Change	-7.42%	-	-7.27%	-14.46%	0.00%	-36.08%
Comment if Change +/- 10%	YOY change is production volume & feedstock composition dependent.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	3.34%	3.34%	3.34%

Benzo(b)fluoranthene (205-99-2)	USED kg	CREATED kg	DESTROYED kg	CONTAINED IN PRODUCT kg	AIR RELEASE kg	DISPOSAL kg
2011	83972.8000	-	83836.6180	130.8970	0.0950	5.1900
2012	82652.2000	-	82499.9533	133.8358	0.0949	18.3160
2013	83551.2000	-	83422.0270	116.6940	0.0950	12.3830
%Change from Options Implemented	1.33%	-	1.33%	1.33%	1.33%	1.33%
2014	88325.2000	-	88192.1000	132.2840	0.0950	0.7210
2014 Reduction from Options Implemented	10.5990	-	10.5831	0.0159	0.0000	0.0001
%Change from Options Implemented	1.20%	-	1.20%	1.20%	1.20%	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	2.53%	2.53%	2.53%
2015	90823.8000	-	90692.4680	128.2100	0.0950	3.0270
2015 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2016	107818.0000	-	107708.6930	107.4020	0.0950	1.8100
%Change from Options Implemented	0.54%	-	0.54%	0.54%	0.54%	0.54%
2017	83625.6000	-	83425.5720	133.9520	0.0950	65.9810
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2018	100316.0000	-	100187.7960	125.6460	0.0950	2.4630
%Change from Options Implemented	0.27%	-	0.27%	0.27%	0.27%	0.27%
2019	92869.8000	-	92759.1500	109.1600	0.0950	1.3950
2019 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
Year-Over-Year (YOY) Change	-7446.2000	-	-7428.6460	-16.4860	0.0000	-1.0680
% Change	-7.42%	-	-7.41%	-13.12%	0.00%	-43.36%
Comment if Change +/- 10%	YOY change is production volume & feedstock composition dependent.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	3.34%	3.34%	3.34%

Benzo(j)fluoranthene (205-82-3)	USED kg	CREATED kg	DESTROYED kg	CONTAINED IN PRODUCT kg	AIR RELEASE kg	DISPOSAL kg
2011	59593.6000	-	59590.5200	-	-	3.0800
2013	59294.4000	-	59286.4330	-	-	7.9670
2013 Reduction from Options Implemented	7.8862	-	7.8851	-	-	0.0011
%Change from Options Implemented	1.33%	-	1.33%	-	-	1.33%
2014	62682.4000	-	62682.4000	-	-	0.0000
2014 Reduction from Options Implemented	7.5219	-	7.5219	-	-	0.0000
%Change from Options Implemented	1.20%	-	1.20%	-	-	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	-	-	2.53%
2015	64455.6000	-	64454.4600	-	-	1.1400
2015 Reduction from Options Implemented	0.0000	-	0.0000	-	-	0.0000
%Change from Options Implemented	0.00%	-	0.00%	-	-	0.00%
2016	76516.0000	-	76515.1200	-	-	0.8800
%Change from Options Implemented	0.54%	-	0.54%	-	-	0.54%
2017	59347.2000	-	59300.9890	-	-	46.2110
%Change from Options Implemented	0.00%	-	0.00%	-	-	0.00%
2018	71192.0000	-	71191.1020	-	-	0.8980
%Change from Options Implemented	0.27%	-	0.27%	-	-	0.27%
2019	65907.6000	-	65907.1600	-	-	0.4400
2019 Reduction from Options Implemented	0.0000	-	0.0000	-	-	0.0000
%Change from Options Implemented	0.00%	-	0.00%	-	-	0.00%
Year-Over-Year (YOY) Change	-5284.4000	-	-5283.9420	-	-	-0.4580
% Change	-7.42%	-	-7.42%	-	-	-51.00%

Comment if Change +/- 10%							YOY change is production volume & feedstock composition dependent.						
TOTAL % Reduction over 2011 baseline							3.34%	-	3.34%	-	-	3.34%	
Benzo(k)fluoranthene (207-08-9)							USED	CREATED	DESTROYED	CONTAINED IN	AIR	DISPOSAL	
							kg	kg	kg	PRODUCT	RELEASE	kg	
										kg	kg	kg	
2011							55530.4000	-	55499.2782	28.0494	0.0203	3.0521	
2012							54657.1000	-	54616.8133	28.6791	0.0203	11.5873	
2013							55251.6000	-	55218.9020	25.0060	0.0200	7.6720	
2013 Reduction from Options Implemented							7.3485	-	7.3441	0.0033	0.0000	0.0010	
%Change from Options Implemented							1.33%	-	1.33%	1.33%	1.33%	1.33%	
2014							58408.6000	-	58380.0790	28.3470	0.0200	0.1540	
2014 Reduction from Options Implemented							7.0090	-	7.0056	0.0034	0.0000	0.0000	
%Change from Options Implemented							1.20%	-	1.20%	1.20%	1.20%	1.20%	
2014 % Reduction over 2011 baseline (goal 1.58%)							2.53%	-	2.53%	2.53%	2.53%	2.53%	
2015							60060.9000	-	60032.0400	27.4740	0.0200	1.3660	
2015 Reduction from Options Implemented							0.0000	-	0.0000	0.0000	0.0000	0.0000	
%Change from Options Implemented							0.00%	-	0.00%	0.00%	0.00%	0.00%	
2016							71299.0000	-	71275.0230	23.0150	0.0200	0.9420	
%Change from Options Implemented							0.54%	-	0.54%	0.54%	0.54%	0.54%	
2017							55300.8000	-	55228.8300	28.7040	0.0200	43.2450	
%Change from Options Implemented							0.00%	-	0.00%	0.00%	0.00%	0.00%	
2018							66338.0000	-	66309.9620	26.9240	0.0200	1.0930	
%Change from Options Implemented							0.27%	-	0.27%	0.27%	0.27%	0.27%	
2019							61413.9000	-	61389.9120	23.3910	0.0200	0.5760	
2019 Reduction from Options Implemented							0.0000	-	0.0000	0.0000	0.0000	0.0000	
%Change from Options Implemented							0.00%	-	0.00%	0.00%	0.00%	0.00%	
Year-Over-Year (YOY) Change							-4924.1000	-	-4920.0500	-3.5330	0.0000	-0.5170	
% Change							-7.42%	-	-7.42%	-13.12%	0.00%	-47.30%	
Comment if Change +/- 10%							YOY change is production volume & feedstock composition dependent.						
TOTAL % Reduction over 2011 baseline							3.34%	-	3.34%	3.34%	3.34%	3.34%	
Fluoranthene (206-44-0)							USED	CREATED	DESTROYED	CONTAINED IN	AIR	DISPOSAL	
							kg	kg	kg	PRODUCT	RELEASE	kg	
										kg	kg	kg	
2011							1689478.5600	-	1674229.4208	15053.1780	10.9162	185.0450	
2012							1662908.9400	-	1647026.9885	15391.1170	10.9162	479.9183	
2013							1680996.2400	-	1667206.5220	13419.8330	10.9160	358.9690	
2013 Reduction from Options Implemented							223.5725	-	221.7385	1.7848	0.0015	0.0477	
%Change from Options Implemented							1.33%	-	1.33%	1.33%	1.33%	1.33%	
2014							1777046.0400	-	1761739.5300	15212.6930	10.9160	82.9010	
2014 Reduction from Options Implemented							213.2455	-	211.4087	1.8255	0.0013	0.0099	
%Change from Options Implemented							1.20%	-	1.20%	1.20%	1.20%	1.20%	
2014 % Reduction over 2011 baseline (goal 1.58%)							2.53%	-	2.53%	2.53%	2.53%	2.53%	
2015							1827316.2600	-	1812365.3890	14744.2040	10.9160	195.7500	
2015 Reduction from Options Implemented							0.0000	-	0.0000	0.0000	0.0000	0.0000	
%Change from Options Implemented							0.00%	-	0.00%	0.00%	0.00%	0.00%	
2016							2169228.6000	-	2156775.9330	12351.2760	10.9160	90.4750	
%Change from Options Implemented							0.54%	-	0.54%	0.54%	0.54%	0.54%	
2017							1682493.1200	-	1665668.0280	15404.4800	10.9160	1409.6960	
%Change from Options Implemented							0.00%	-	0.00%	0.00%	0.00%	0.00%	
2018							2018293.2000	-	2003669.7490	14449.2670	10.9160	163.2680	
%Change from Options Implemented							0.27%	-	0.27%	0.27%	0.27%	0.27%	
2019							1868480.4600	-	1855814.5610	12553.3440	10.9160	101.6390	
2019 Reduction from Options Implemented							0.0000	-	0.0000	0.0000	0.0000	0.0000	
%Change from Options Implemented							0.00%	-	0.00%	0.00%	0.00%	0.00%	
Year-Over-Year (YOY) Change							-149812.7400	-	-147855.1880	-1895.9230	0.0000	-61.6290	
% Change							-7.42%	-	-7.38%	-13.12%	0.00%	-37.75%	
Comment if Change +/- 10%							YOY change is production volume & feedstock composition dependent.						
TOTAL % Reduction over 2011 baseline							3.34%	-	3.34%	3.34%	3.34%	3.34%	

Phenanthrene (85-01-8)	USED kg	CREATED kg	DESTROYED kg	CONTAINED IN PRODUCT kg	AIR RELEASE kg	DISPOSAL kg
2011	2646226.7200	-	2645148.2260	934.9800	0.6780	142.8360
2012	2604610.7800	-	2603105.5580	955.9700	0.6780	548.5740
2013	2632940.8800	-	2631744.6410	833.5300	0.6780	362.0310
2013 Reduction from Options Implemented	350.1811	-	350.0220	0.1109	0.0001	0.0482
%Change from Options Implemented	1.33%	-	1.33%	1.33%	1.33%	1.33%
2014	2783383.4800	-	2782432.7650	944.8880	0.6780	5.1490
2014 Reduction from Options Implemented	334.0060	-	333.8919	0.1134	0.0001	0.0006
%Change from Options Implemented	1.20%	-	1.20%	1.20%	1.20%	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	2.53%	2.53%	2.53%
2015	2862121.6200	-	2861144.3980	915.7890	0.6780	60.7550
2015 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2016	3397658.2000	-	3396847.2160	767.1600	0.6780	43.1460
%Change from Options Implemented	0.54%	-	0.54%	0.54%	0.54%	0.54%
2017	2635285.4400	-	2632269.8150	956.8000	0.6780	2058.1470
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2018	3161248.4000	-	3160301.8340	897.4700	0.6780	48.4180
%Change from Options Implemented	0.27%	-	0.27%	0.27%	0.27%	0.27%
2019	2926597.0200	-	2925791.5550	779.7110	0.6780	25.0760
2019 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
Year-Over-Year (YOY) Change	-234651.3800	-	-234510.2790	-117.7590	0.0000	-23.3420
% Change	-7.42%	-	-7.42%	-13.12%	0.00%	-48.21%
Comment if Change +/- 10%	YOY change is production volume & feedstock composition dependent.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	3.34%	3.34%	3.34%

Pyrene (129-00-0)	USED kg	CREATED kg	DESTROYED kg	CONTAINED IN PRODUCT kg	AIR RELEASE kg	DISPOSAL kg
2011	1113587.6800	-	1097275.9003	16137.7548	11.7027	162.3222
2012	1096074.8200	-	1079190.9867	16500.0422	11.7027	372.0884
2013	1107996.7200	-	1093306.7180	14386.7280	11.7030	291.5710
2013 Reduction from Options Implemented	147.3636	-	145.4098	1.9134	0.0016	0.0388
%Change from Options Implemented	1.33%	-	1.33%	1.33%	1.33%	1.33%
2014	1171306.1200	-	1154896.7810	16308.7630	11.7030	88.8730
2014 Reduction from Options Implemented	140.5567	-	138.5876	1.9571	0.0014	0.0107
%Change from Options Implemented	1.20%	-	1.20%	1.20%	1.20%	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	2.53%	2.53%	2.53%
2015	1204440.7800	-	1188426.0440	15806.5200	11.7030	196.5130
2015 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2016	1429805.8000	-	1416466.2240	13241.1200	11.7030	86.6920
%Change from Options Implemented	0.54%	-	0.54%	0.54%	0.54%	0.54%
2017	1108983.3600	-	1091486.9770	16514.3680	11.7030	970.3120
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2018	1330319.6000	-	1314653.0410	15490.3320	11.7030	164.5240
%Change from Options Implemented	0.27%	-	0.27%	0.27%	0.27%	0.27%
2019	1231573.3800	-	1218000.0580	12457.8080	11.7030	103.8110
2019 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
Year-Over-Year (YOY) Change	-98746.2200	-	-96652.9830	-3032.5240	0.0000	-60.7130
% Change	-7.42%	-	-7.35%	-19.58%	0.00%	-36.90%
Comment if Change +/- 10%	YOY change is production volume & feedstock composition dependent.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	3.34%	3.34%	3.34%

Mercury (NA-10)	USED kg	CREATED kg	DESTROYED kg	CONTAINED IN PRODUCT kg	AIR RELEASE kg	DISPOSAL kg
2011	864.8640	-	-	43.0940	0.0339	0.3035

2012	896.2500	-	-	44.1730	0.0339	0.4194
2013	779.5020	-	-	38.2110	0.0340	0.4130
2013 Reduction from Options Implemented	0.1037	-	-	0.0051	0.0000	0.0001
%Change from Options Implemented	1.33%	-	-	1.33%	1.33%	1.33%
2014	915.9720	-	-	43.6960	0.0340	0.2570
2014 Reduction from Options Implemented	0.1099	-	-	0.0052	0.0000	0.0000
%Change from Options Implemented	1.20%	-	-	1.20%	1.20%	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	-	2.53%	2.53%	2.53%
2015	877.7100	-	-	41.9960	0.0340	0.5080
2015 Reduction from Options Implemented	0.0000	-	-	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	-	0.00%	0.00%	0.00%
2016	694.3740	-	-	33.9830	0.0340	0.2040
%Change from Options Implemented	0.54%	-	-	0.54%	0.54%	0.54%
2017	896.0280	-	-	44.2440	0.0340	0.3090
%Change from Options Implemented	0.00%	-	-	0.00%	0.00%	0.00%
2018	835.8420	-	-	40.4580	0.0340	0.4280
%Change from Options Implemented	0.27%	-	-	0.27%	0.27%	0.27%
2019	732.9840	-	-	34.8900	0.0340	0.2770
2019 Reduction from Options Implemented	0.0000	-	-	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	-	0.00%	0.00%	0.00%
Year-Over-Year (YOY) Change	-102.8580	-	-	-5.5680	0.0000	-0.1510
% Change	-12.31%	-	-	-13.76%	0.00%	-35.28%
Comment if Change +/- 10%	YOY change is production volume & feedstock composition dependent.					
TOTAL % Reduction over 2011 baseline	3.34%	-	-	3.34%	3.34%	3.34%

Anthracene (120-12-7)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2011	585.7178	-	585.6365	0.0280	-	0.0532
2012	578.3832	-	577.9990	0.0287	-	0.3555
2013	583.5725	-	583.3237	0.0250	-	0.2238
2013 Reduction from Options Implemented	0.0776	-	0.0776	0.0000	-	0.0000
%Change from Options Implemented	1.33%	-	1.33%	1.33%	-	1.33%
2014	618.7993	-	618.7708	0.0283	-	0.0002
2014 Reduction from Options Implemented	0.0743	-	0.0743	0.0000	-	0.0000
%Change from Options Implemented	1.20%	-	1.20%	1.20%	-	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	2.53%	-	2.53%
2015	641.6441	-	641.6093	0.0275	-	0.0073
2015 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	-	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	-	0.00%
2016	759.2677	-	759.2445	0.0230	-	0.0001
%Change from Options Implemented	0.54%	-	0.54%	0.54%	-	0.54%
2017	588.9872	-	587.5475	0.0287	-	1.4109
%Change from Options Implemented	0.00%	-	0.00%	0.00%	-	0.00%
2018	703.4464	-	703.4053	0.0269	-	0.0142
%Change from Options Implemented	0.27%	-	0.27%	0.27%	-	0.27%
2019	651.2314	-	651.2078	0.0234	-	0.0166
2019 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	-	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	-	0.00%
Year-Over-Year (YOY) Change	-52.2150	-	-52.1975	-0.0035	-	0.0024
% Change	-7.42%	-	-7.42%	-13.12%	-	16.84%
Comment if Change +/- 10%	YOY change is production volume & feedstock composition dependent.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	3.34%	-	3.34%

Naphthalene (91-20-3)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2011	793.6920	-	792.3002	1.2809	0.0009	0.1100
2012	783.7530	-	781.7498	1.3097	0.0009	0.6927
2013	790.7850	-	789.2021	1.1419	0.0009	0.4400
2013 Reduction from Options Implemented	0.1052	-	0.1050	0.0002	0.0000	0.0001

%Change from Options Implemented	1.33%	-	1.33%	1.33%	1.33%	1.33%
2014	838.5200	-	837.2175	1.2945	0.0009	0.0071
2014 Reduction from Options Implemented	0.1006	-	0.1005	0.0002	0.0000	0.0000
%Change from Options Implemented	1.20%	-	1.20%	1.20%	1.20%	1.20%
2014 % Reduction over 2011 baseline (goal 1.58%)	2.53%	-	2.53%	2.53%	2.53%	2.53%
2015	869.4763	-	868.1935	1.2546	0.0009	0.0273
2015 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2016	1028.8652	-	1027.8077	1.0510	0.0009	0.0056
%Change from Options Implemented	0.54%	-	0.54%	0.54%	0.54%	0.54%
2017	798.1223	-	794.0969	1.3108	0.0009	2.7137
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
2018	953.2232	-	951.9543	1.2295	0.0009	0.0385
%Change from Options Implemented	0.27%	-	0.27%	0.27%	0.27%	0.27%
2019	882.4679	-	881.3912	1.0682	0.0009	0.0759
2019 Reduction from Options Implemented	0.0000	-	0.0000	0.0000	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	0.00%	0.00%	0.00%
Year-Over-Year (YOY) Change	-70.7553	-	-70.5631	-0.1613	0.0000	0.0374
% Change	-7.42%	-	-7.41%	-13.12%	0.00%	97.18%
Comment if Change +/- 10% YOY change is production volume & feedstock composition dependent.						
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	3.34%	3.34%	3.34%

Sulphuric Acid (7664-93-9)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2011	24.6989	-	24.6989	-	-	-
2012	10.8066	-	10.8066	-	-	-
2012 % reduction over 2011 baseline (goal 40%)	56.25%	-	56.25%	-	-	-
2013	10.4200	-	10.4200	-	-	-
2014	20.0200	-	20.0200	-	-	-
2015	24.0700	-	24.0700	-	-	-
2016	8.7400	-	8.7400	-	-	-
2017	14.6400	-	14.6400	-	-	-
2018	14.5600	-	14.5600	-	-	-
2019	19.5600	-	19.5600	-	-	-
Year-Over-Year (YOY) Change	5.0000	-	5.0000	-	-	-
% Change	34.34%	-	34.34%	-	-	-
Comment if Change +/- 10% Production volume/grade mix dependent.						

PHASE 2 SUBSTANCES

Toxic Substances (CAS #):

Carbon Disulphide (75-15-0)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2012	500.3974	-	495.3935	-	5.0040	-
2013	441.0299	-	436.6196	-	4.4103	-
2013 Reduction from Options Implemented	0.0587	-	0.0581	-	0.0006	-
%Change from Options Implemented	1.33%	-	1.33%	-	1.33%	-
2014	559.1000	-	553.5090	-	5.5910	-
2014 Reduction from Options Implemented	0.0671	-	0.0664	-	0.0007	-
%Change from Options Implemented	1.20%	-	1.20%	-	1.20%	-
2014 % Reduction over 2011 baseline (goal 0.79%)	2.53%	-	2.53%	-	2.53%	-
2015	530.6849	-	525.3780	-	5.3068	-
2015 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
2016	417.7563	-	413.5787	-	4.1756	-
%Change from Options Implemented	0.54%	-	0.54%	-	0.54%	-
2017	373.8486	-	370.1101	-	3.7385	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
2018	542.7505	-	537.3230	-	5.4275	-
%Change from Options Implemented	0.27%	-	0.27%	-	0.27%	-

2019	440.8922	-	436.4834	-	4.4089	-
2019 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
Year-Over-Year (YOY) Change	-101.8583	-	-100.8396	-	-1.0186	-
% Change	-18.77%	-	-18.77%	-	-18.77%	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	-	3.34%	-

Carbonyl Sulphide (463-58-1)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2012	69.3442	-	68.6508	-	0.6934	-
2013	61.1172	-	60.5060	-	0.6112	-
2013 Reduction from Options Implemented	0.0081	-	0.0080	-	0.0001	-
%Change from Options Implemented	1.33%	-	1.33%	-	1.33%	-
2014	77.4791	-	76.7043	-	0.7748	-
2014 Reduction from Options Implemented	0.0093	-	0.0092	-	0.0001	-
%Change from Options Implemented	1.20%	-	1.20%	-	1.20%	-
2014 % Reduction over 2011 baseline (goal 0.79%)	2.53%	-	2.53%	-	2.53%	-
2015	73.5414	-	72.8060	-	0.7354	-
2015 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
2016	57.8919	-	57.3130	-	0.5789	-
%Change from Options Implemented	0.54%	-	0.54%	-	0.54%	-
2017	51.8073	-	51.2892	-	0.5181	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
2018	75.2134	-	74.4613	-	0.7531	-
%Change from Options Implemented	0.27%	-	0.27%	-	0.27%	-
2019	61.0981	-	60.4871	-	0.6110	-
2019 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
Year-Over-Year (YOY) Change	-14.1153	-	-13.9742	-	-0.1422	-
% Change	-18.77%	-	-18.77%	-	-18.87%	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	-	3.34%	-

Hydrogen Sulphide (7783-06-4)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2012	2867.9100	-	2856.4384	-	11.4716	-
2013	2500.5900	-	2490.5876	-	10.0024	-
2013 Reduction from Options Implemented	0.3326	-	0.3312	-	0.0013	-
%Change from Options Implemented	1.33%	-	1.33%	-	1.33%	-
2014	2834.6633	-	2823.3247	-	11.3387	-
2014 Reduction from Options Implemented	0.3402	-	0.3388	-	0.0014	-
%Change from Options Implemented	1.20%	-	1.20%	-	1.20%	-
2014 % Reduction over 2011 baseline (goal 0.79%)	2.53%	-	2.53%	-	2.53%	-
2015	2747.3673	-	2736.3778	-	10.9895	-
2015 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
2016	2301.4800	-	2292.2741	-	9.2059	-
%Change from Options Implemented	0.54%	-	0.54%	-	0.54%	-
2017	2870.4000	-	2859.9184	-	11.4816	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
2018	2692.4100	-	2681.6404	-	10.7696	-
%Change from Options Implemented	0.27%	-	0.27%	-	0.27%	-
2019	2339.1324	-	2329.7759	-	9.3565	-
2019 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-
Year-Over-Year (YOY) Change	353.2776	-	351.8645	-	1.4131	-
% Change	13.12%	-	13.12%	-	13.12%	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.					

TOTAL % Reduction over 2011 baseline		3.34%	-	3.34%	-	3.34%	-
Total Reduced Sulphur (TRS) (NA-M14)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes	
2012	3437.6517	-	3420.4826	-	17.1691	-	-
2013	3002.7371	-	2987.7133	-	15.0238	-	-
2013 Reduction from Options Implemented	0.3994	-	0.3974	-	0.0020	-	-
%Change from Options Implemented	1.33%	-	1.33%	-	1.33%	-	-
2014	3471.2424	-	3453.5380	-	17.7044	-	-
2014 Reduction from Options Implemented	0.4165	-	0.4144	-	0.0021	-	-
%Change from Options Implemented	1.20%	-	1.20%	-	1.20%	-	-
2014 % Reduction over 2011 baseline (goal 0.79%)	2.53%	-	2.53%	-	2.53%	-	-
2015	3351.5935	-	3334.5618	-	17.0317	-	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-	-
2016	2777.1282	-	2763.1658	-	13.9624	-	-
%Change from Options Implemented	0.54%	-	0.54%	-	0.54%	-	-
2017	3296.0559	-	3280.3177	-	15.7382	-	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-	-
2018	3310.3740	-	3293.4247	-	16.9493	-	-
%Change from Options Implemented	0.27%	-	0.27%	-	0.27%	-	-
2019	2841.1229	-	2826.7464	-	14.3764	-	-
2019 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	-	-
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	-	-
Year-Over-Year (YOY) Change	469.2511	-	466.6783	-	2.5728	-	-
% Change	14.18%	-	14.17%	-	15.18%	-	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.						
TOTAL % Reduction over 2011 baseline		3.34%	-	3.34%	-	3.34%	-

Criteria Air Contaminants

Toxic Substances (CAS #):

Sulphur Dioxide (7446-09-5)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes	
2012	-	3906.4000	-	-	3906.4000	-	-
2013	-	3517.9000	-	-	3517.9000	-	-
2013 Reduction from Options Implemented	-	-388.5000	-	-	-388.5000	-	-
%Change from Options Implemented	-	1.33%	-	-	1.33%	-	-
2014	-	4739.3000	-	-	4739.3000	-	-
2014 Reduction from Options Implemented	-	0.5687	-	-	0.5687	-	-
%Change from Options Implemented	-	1.20%	-	-	1.20%	-	-
2014 % Reduction over 2011 baseline (goal 0.79%)	-	2.53%	-	-	2.53%	-	-
2015	-	4461.3000	-	-	4461.3000	-	-
2015 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-	-
2016	-	4071.0000	-	-	4071.0000	-	-
%Change from Options Implemented	-	0.54%	-	-	0.54%	-	-
2017	-	2701.0000	-	-	2701.0000	-	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-	-
2018	-	4518.2000	-	-	4518.2000	-	-
%Change from Options Implemented	-	0.27%	-	-	0.27%	-	-
2019	-	3713.6000	-	-	3713.6000	-	-
2018 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-	-
Year-Over-Year (YOY) Change	-	804.6000	-	-	804.6000	-	-
% Change	-	17.81%	-	-	17.81%	-	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.						
TOTAL % Reduction over 2011 baseline		-	3.34%	-	-	3.34%	-

Carbon Monoxide (630-08-0)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes	
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2012	-	1753.4020	-	-	1753.4020	-
2013	-	1753.4020	-	-	1753.4020	-
2013 Reduction from Options Implemented	-	0.2332	-	-	0.2332	-
%Change from Options Implemented	-	1.33%	-	-	1.33%	-
2014	-	1753.4020	-	-	1753.4020	-
2014 Reduction from Options Implemented	-	0.2104	-	-	0.2104	-
%Change from Options Implemented	-	1.20%	-	-	1.20%	-
2014 % Reduction over 2011 baseline (goal 0.79%)	-	2.53%	-	-	2.53%	-
2015	-	1753.4020	-	-	1753.4020	-
2015 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-
2016	-	1753.4020	-	-	1753.4020	-
%Change from Options Implemented	-	0.54%	-	-	0.54%	-
2017	-	1753.4020	-	-	1753.4020	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-
2018	-	1753.4020	-	-	1753.4020	-
%Change from Options Implemented	-	0.27%	-	-	0.27%	-
2019	-	1753.4020	-	-	1753.4020	-
2019 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-
Year-Over-Year (YOY) Change	-	0.0000	-	-	0.0000	-
% Change	-	0.00%	-	-	0.00%	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition. Reported value based on last stack testing result.					
TOTAL % Reduction over 2011 baseline	-	3.34%	-	-	3.34%	-

Nitrogen Oxides (NO2) (11104-93-1)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2012	-	895.6220	-	-	895.6220	-
2013	-	895.6220	-	-	895.6220	-
2013 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	1.33%	-	-	1.33%	-
2014	-	895.6220	-	-	895.6220	-
2014 Reduction from Options Implemented	-	0.1075	-	-	0.1075	-
%Change from Options Implemented	-	1.20%	-	-	1.20%	-
2014 % Reduction over 2011 baseline (goal 0.79%)	-	2.53%	-	-	2.53%	-
2015	-	895.6220	-	-	895.6620	-
2015 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.0000	-	-	0.0000	-
2016	-	895.6220	-	-	895.6620	-
%Change from Options Implemented	-	0.54%	-	-	0.54%	-
2017	-	895.6220	-	-	895.6220	-
%Change from Options Implemented	-	0.0000	-	-	0.0000	-
2018	-	895.6220	-	-	895.6220	-
%Change from Options Implemented	-	0.27%	-	-	0.27%	-
2019	-	895.6220	-	-	895.6220	-
2019 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-
Year-Over-Year (YOY) Change	-	0.0000	-	-	0.0000	-
% Change	-	0.00%	-	-	0.00%	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition. Reported value based on last stack testing result.					
TOTAL % Reduction over 2011 baseline	-	3.34%	-	-	3.34%	-

Volatile Organic Compounds ((NA-M16)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2012	3468.1930	-	3463.1640	-	5.0290	1.5850
2013	3505.9160	-	3501.4810	-	4.4350	1.1410
2013 Reduction from Options Implemented	0.4663	-	0.4657	-	0.0006	0.0002

%Change from Options Implemented	1.33%	-	1.33%	-	1.33%	1.33%
2014	3706.2390	-	3700.6230	-	5.6160	0.1910
2014 Reduction from Options Implemented	0.4447	-	0.4441	-	0.0007	0.0000
%Change from Options Implemented	1.20%	-	1.20%	-	1.20%	1.20%
2014 % Reduction over 2011 baseline (goal 0.79%)	2.53%	-	2.53%	-	2.53%	2.53%
2015	3811.0840	-	3805.7520	-	5.3320	0.4960
2015 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	0.0000
%Change from Options Implemented	0.0000	-	0.0000	-	0.0000	0.0000
2016	4524.1820	-	4519.9800	-	4.2030	0.2430
%Change from Options Implemented	0.54%	-	0.54%	-	0.54%	0.54%
2017	8090.0810	-	8085.7980	-	4.2830	9.2420
%Change from Options Implemented	0.0000	-	0.0000	-	0.0000	0.0000
2018	9804.8060	-	9798.6000	-	6.2060	0.4650
%Change from Options Implemented	0.27%	-	0.27%	-	0.27%	0.27%
2019	9006.9160	-	9001.8700	-	5.0460	0.2600
2019 Reduction from Options Implemented	0.0000	-	0.0000	-	0.0000	0.0000
%Change from Options Implemented	0.00%	-	0.00%	-	0.00%	0.00%
Year-Over-Year (YOY) Change	797.8900	-	796.7300	-	1.1600	0.2050
% Change	8.14%	-	8.13%	-	18.69%	44.09%
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.					
TOTAL % Reduction over 2011 baseline	3.34%	-	3.34%	-	3.34%	-

PM Total Particulate Matter (NA-M08)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2012	-	104.1480	-	-	104.1480	-
2013	-	90.8089	-	-	90.8089	-
2013 Reduction from Options Implemented	-	1.2078	-	-	1.2078	-
%Change from Options Implemented	-	1.33%	-	-	1.33%	-
2014	-	102.9403	-	-	102.9403	-
2014 Reduction from Options Implemented	-	1.2353	-	-	0.0124	-
%Change from Options Implemented	-	1.20%	-	-	1.20%	-
2014 % Reduction over 2011 baseline (goal 0.79%)	-	2.53%	-	-	2.53%	-
2015	-	99.7702	-	-	99.7702	-
2015 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.0000	-	-	0.0000	-
2016	-	83.5440	-	-	83.5440	-
%Change from Options Implemented	-	0.54%	-	-	0.54%	-
2017	-	104.1960	-	-	104.1960	-
%Change from Options Implemented	-	0.0000	-	-	0.0000	-
2018	-	97.7340	-	-	97.7340	-
%Change from Options Implemented	-	0.27%	-	-	0.27%	-
2019	-	84.9110	-	-	84.9110	-
2019 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-
Year-Over-Year (YOY) Change	-	12.8230	-	-	12.8230	-
% Change	-	13.1203	-	-	13.1203	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.					
TOTAL % Reduction over 2011 baseline	-	3.34%	-	-	3.34%	-

PM10 Particulate Matter (NA-M09)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2012	-	93.7332	-	-	93.7332	-
2013	-	81.7280	-	-	81.7280	-
2013 Reduction from Options Implemented	-	-12.0052	-	-	-12.0052	-
%Change from Options Implemented	-	1.33%	-	-	1.33%	-
2014	-	92.6463	-	-	92.6463	-
2014 Reduction from Options Implemented	-	0.0111	-	-	0.0111	-
%Change from Options Implemented	-	1.20%	-	-	1.20%	-
2014 % Reduction over 2011 baseline (goal 0.79%)	-	2.53%	-	-	2.53%	-
2015	-	89.7932	-	-	89.7932	-

2015 Reduction from Options Implemented		0.0000			0.0000	
%Change from Options Implemented	-	0.0000	-	-	0.0000	-
2016	-	75.1890	-	-	75.1890	-
%Change from Options Implemented	-	0.54%	-	-	0.54%	-
2017	-	93.7760	-	-	93.7760	-
%Change from Options Implemented	-	0.0000	-	-	0.0000	-
2018	-	87.9610	-	-	87.9610	-
%Change from Options Implemented	-	0.27%	-	-	0.27%	-
2019	-	76.4190	-	-	76.4190	-
2019 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-
Year-Over-Year (YOY) Change	-	11.5420	-	-	11.5420	-
% Change	-	13.1217	-	-	13.1217	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.					
TOTAL % Reduction over 2011 baseline	-	3.34%	-	-	3.34%	-

PM2.5 Particulate Matter (NA-M10)	USED tonnes	CREATED tonnes	DESTROYED tonnes	CONTAINED IN PRODUCT tonnes	AIR RELEASE tonnes	DISPOSAL tonnes
2014	-	82.3523	-	-	82.3523	-
2014 Reduction from Options Implemented	-	0.9882	-	-	0.0988	-
%Change from Options Implemented	-	1.20%	-	-	1.20%	-
2014 % Reduction over 2011 baseline (goal 0.79%)	-	2.53%	-	-	2.53%	-
2015	-	79.8162	-	-	79.8162	-
2015 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.0000	-	-	0.0000	-
2016	-	66.8350	-	-	66.8350	-
%Change from Options Implemented	-	0.54%	-	-	0.54%	-
2017	-	83.3560	-	-	83.3560	-
%Change from Options Implemented	-	0.0000	-	-	0.0000	-
2018	-	78.1880	-	-	78.1880	-
%Change from Options Implemented	-	0.27%	-	-	0.27%	-
2019	-	67.9280	-	-	67.9280	-
2019 Reduction from Options Implemented	-	0.0000	-	-	0.0000	-
%Change from Options Implemented	-	0.00%	-	-	0.00%	-
Year-Over-Year (YOY) Change	-	10.2600	-	-	10.2600	-
% Change	-	13.12%	-	-	13.12%	-
Comment if Change +/- 10%	Year-Over-Year change is production volume dependent. Change due to feedstock composition.					
TOTAL % Reduction over 2011 baseline	-	3.34%	-	-	3.34%	-

No amendments were made to the plan in the previous year.

There has been no change in the method or combination of methods used to track and quantify the substances during the previous calendar year.

There has been no significant process change at the facility during the previous calendar year.

Signed:

Lori Small

Lori Small, Planner License # TSRP0153

Title:

Health, Safety & Environment Manager

Company:

Birla Carbon Canada Ltd.