

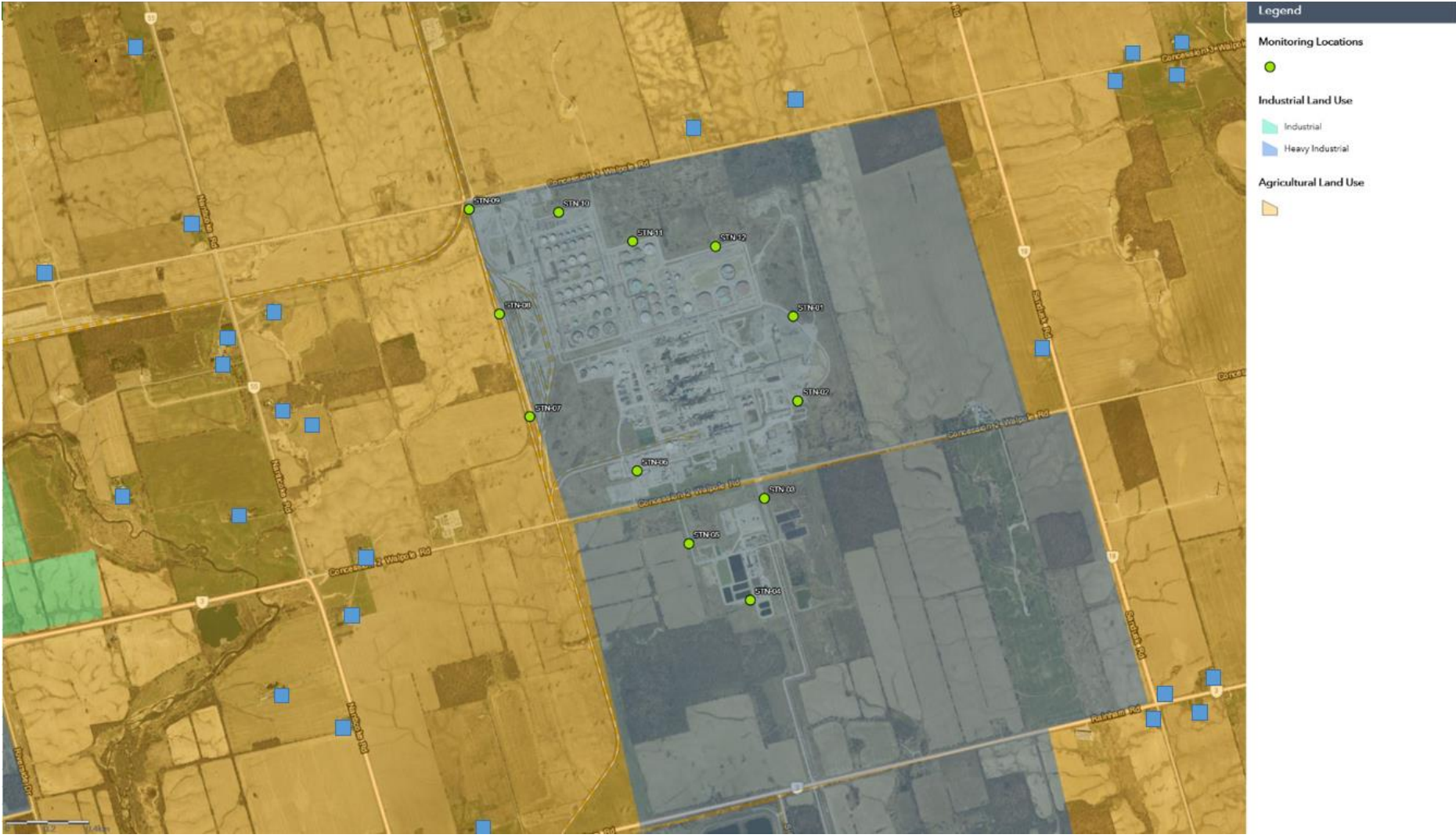


March 31, 2020

Subject: Annual Ambient Monitoring Report for Petroleum Refining – Industry Standard

As required by part X of the Petroleum Refining Industry Standard, under Ontario Regulation 419/05, Imperial's Nanticoke refinery is required to prepare and post an annual report of the fence line benzene air monitoring program.

- i. The following map shows the location of each monitoring station required by subsection 60(1), the information required by clause 60(4)(d), and other topographical information including any nearby water bodies, roadways and adjacent land uses.





ii. A. Please see the table below with the sampling results for the 2019 calendar year.

iii.

Station ID		1-FLARE	2-SPHERE	3-WWTP	4-WWTP	5-WWTP	6-FIREHALL	7-RAIL	8-RAIL	9-TERMINAL	10-TANKS	11-TANKS	12-TANKS
Location (Lat, Long)													
Date of Deployment/ Date of Retrieval/ Results (ug/m3)													
10 Jan '19	24 Jan '19	1.2	1.2	1.6	1.6	1.2	1.5	1.7	1.6	0.71	1.1	1.4	1.4
24 Jan '19	07 Feb '19	2.6	1.4	2.2	1.3	1.6	1.5	1.6	1.5	0.89	1.9	2.8	2.8
07 Feb '19	21 Feb '19	2.6	1.1	1.4	1.3	1.4	1.3	1.8	1.7	0.88	1.4	2.2	2.0
21 Feb '19	07 Mar '19	2.5	1.5	1.4	1.7	1.2	1.4	2.7	1.7	0.75	1.1	2.3	2.0
07 Mar '19	21 Mar '19	2.2	1.3	2.1	1.0	1.8	1.5	1.4	1.5	0.92	2.3	2.4	2.8
21 Mar '19	04 Apr '19	1.7	1.4	1.9	1.6	1.4	1.8	2.6	1.8	0.82	2.9	2.1	2.5
04 Apr '19	18 Apr '19	1.0	0.86	1.3	1.1	1.3	1.1	1.6	2.0	0.62	1.8	1.5	1.7
18 Apr '19	02 May '19	1.1	0.98	1.2	1.2	1.2	1.1	1.6	2.0	0.68	1.5	1.4	1.4
02 May '19	16 May '19	1.1	0.93	2.2	2.1	0.76	1.1	1.7	1.7	0.6	1.6	1.6	1.8
16 May '19	30 May '19	1.0	1.1	1.9	1.9	2.1	1.3	2.8	1.9	0.77	2.2	2.1	2.3
30 May '19	13 Jun '19	1.2	1.0	2.1	1.2	2.0	1.2	1.4	1.8	0.78	2.2	2.7	2.1
13 Jun '19	27 Jun '19	1.2	1.1	2.8	1.5	2.0	1.5	1.7	1.2	0.52	2.1	2.4	2.8
27 Jun '19	11 Jul '19	1.2	1.4	3.8	2.0	1.8	1.9	2.8	2.1	0.61	3.8	2.6	3.0
11 Jul '19	25 Jul '19	0.7	0.8	1.9	0.88	0.97	0.82	1.9	1.7	0.65	3.3	2.6	2.9
25 Jul '19	09 Aug '19	1.3	0.94	2.2	1.4	0.74	1.4	1.9	1.3	0.41	3.2	3.1	3.8
09 Aug '19	22 Aug '19	1.1	1.1	2.4	1.1	1.2	1.0	1.7	1.9	0.89	2.5	2.6	2.8
22 Aug '19	05 Sep '19	0.93	0.84	1.4	1.7	1.0	0.91	1.2	1.4	0.47	1.6	1.6	1.4
05 Sep '19	19 Sep '19	0.64	0.52	0.85	1.1	0.61	1.1	2.3	2.4	0.51	1.0	1.2	1.0
19 Sep '19	03 Oct '19	1.2	1.1	1.7	0.93	1.5	2.0	2.6	2.0	0.61	2.1	2.5	3.2
03 Oct '19	17 Oct '19	0.84	0.64	0.81	0.60	0.47	0.75	1.2	1.6	0.42	0.87	1.4	1.2
17 Oct '19	31 Oct '19	0.76	1.1	2.6	1.6	1.9	0.96	1.2	1.4	0.62	1.0	1.4	1.4
31 Oct '19	14 Nov '19	1.4	0.86	0.98	0.66	0.57	0.64	0.86	0.82	0.49	1.3	1.5	1.9
14 Nov '19	28 Nov '19	3.4	3.4	1.2	1.0	0.86	0.97	1.2	1.6	0.55	1.3	1.5	1.7
28 Nov '19	12 Dec '19	2.4	2.1	1.3	1.2	0.85	0.91	1.1	1.1	0.53	1.1	1.4	1.6
12 Dec '19	27 Dec '19	2.7	2.0	1.3	1.5	0.97	1.3	2.4	1.8	0.69	1.8	1.4	1.8
27 Dec '19*	09 Jan '20	4.6	2.2	1.1	0.75	0.78	1.2	1.6	1.3	0.63	1.7	2.1	1.8

iv. \*: Sample collected on Friday December 27<sup>th</sup> instead of Thursday December 26<sup>th</sup> due to holiday.

B. As per Section 60(1) of the standard, a 3-year baseline has not yet been established, therefore there are no statistically significant increases in benzene concentrations to report.

C. Please see the table below for a summary showing the annual average benzene concentration results from the time that the monitor was first required by subsection 60(1).

Year/Results (ug/m3)	1-FLARE	2-SPHERE	3-WWTP	4-WWTP	5-WWTP	6-FIREHALL	7-RAIL	8-RAIL	9-TERMINAL	10-TANKS	11-TANKS	12-TANKS
2018	1.5	1.1	2.0	1.9	1.3	1.3	2.0	1.7	0.8	1.6	2.0	2.0
2019	1.6	1.3	1.8	1.3	1.2	1.2	1.8	1.7	0.7	1.9	2.0	2.1

v. As per Section 60(1) of the standard, a 3-year baseline has not yet been established, therefore there are no statistically significant increases in benzene concentrations to report.