



2025 Annual Ambient Monitoring Report for Petroleum Refining – Industry Standard

Technical Standards to Manage Air Pollution: Petroleum Refining - Industry Standard (PRIS),
Ontario Regulation (O. Reg.) 419/05

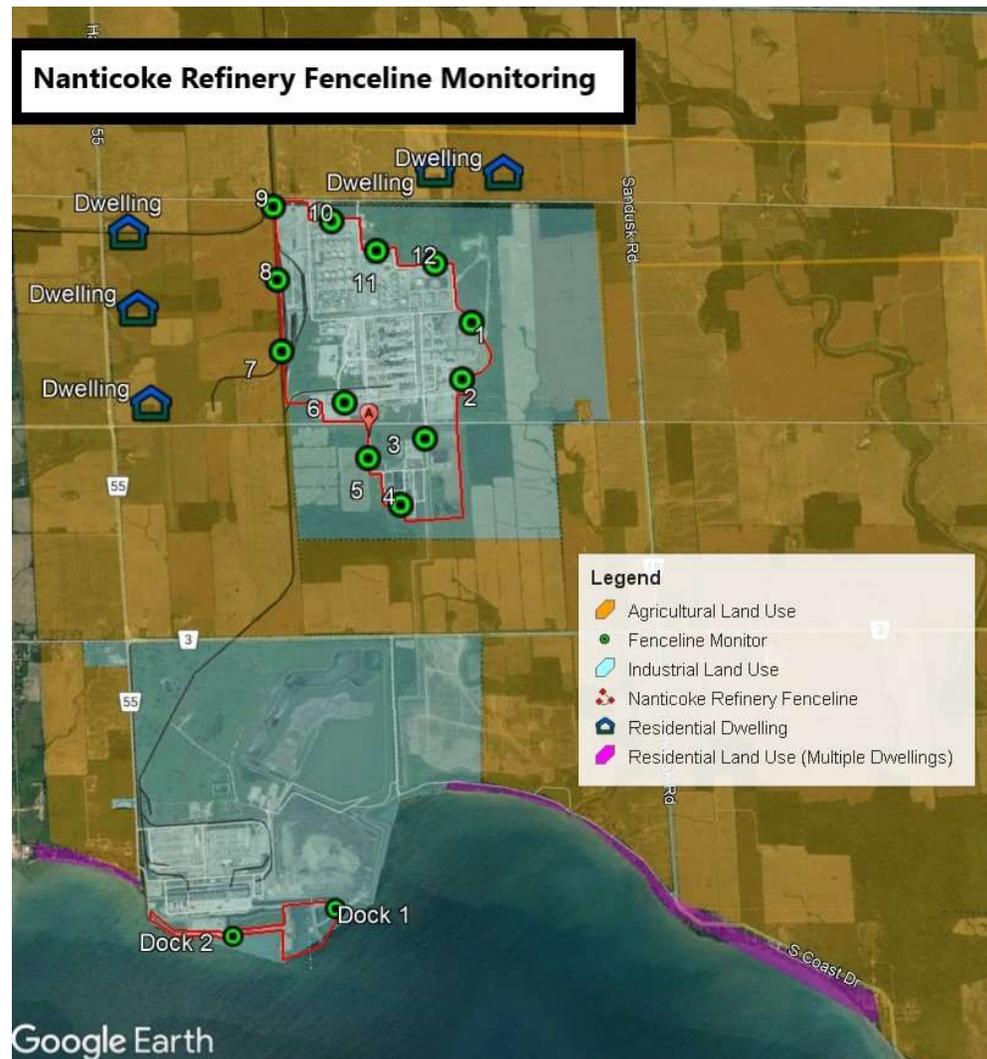
Part X – Complaints, Records and Reporting, Subsection 65(2)

Nanticoke Refinery, Imperial Oil

March 27, 2026

This report was prepared in accordance paragraph 6 of PRIS subsection 65(2).

- 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. Residential dwellings within a 1km radius of the Nanticoke Refinery's fenceline are shown on the map. There are no health care facilities, senior citizen's residences, childcare facilities or educational facilities within a 10km radius of the Nanticoke Refinery's fenceline.



ii. A) Please see Table A-1 for the information required by subsection 60(6).

Table A-1 2025 Benzene Sampling Information and Results for each Monitor

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	13-DOCK1	14-DOCK2
Location (Lat, Long)		(42.8360, -80.0406)	(42.8324, -80.0403)	(42.8283, -80.0423)	(42.8240, -80.0431)	(42.8264, -80.0466)	(42.8295, -80.0496)	(42.8318, -80.0558)	(42.8361, -80.0576)	(42.8406, -80.0594)	(42.8404, -80.0542)	(42.8392, -80.0499)	(42.8390, -80.0451)	(42.7988, -80.0408)	(42.7959, -80.0488)
Date of Deployment/ Date of Retrieval/ Results (ug/m ³)															
19-December-2024	2-January-2025	0.95	0.80	1.1	1.8	1.1	0.90	1.3	2.2	0.80	1.9	1.5	1.4	0.63	1.2
2-January-2025	16-January-2025	1.8	1.1	1.2	0.89	0.71	0.74	0.92	1.0	0.64	2.2	3.3	2.5	1.4	0.79
16-January-2025	30-January-2025	1.9	1.2	1.4	0.97	0.82	0.95	0.67	0.64	0.71	3.2	2.9	4.5	0.95	0.64
30-January-2025	13-February-2025	1.4	0.97	0.91	1.3	0.82	0.92	1.1	1.9	0.62	1.6	1.7	1.7	1.0	0.65
13-February-2025	27-February-2025	1.8	0.98	1.2	1.1	0.88	0.99	0.86	1.2	0.68	3.1	3.1	3.4	0.77	0.84
27-February-2025	13-March-2025	1.7	1.4	1.4	0.87	1.2	0.95	0.99	2.2	0.83	5.4	2.5	3.0	1.4	0.65
13-March-2025	27-March-2025	1.4	0.95	1.4	0.66	1.2	0.93	0.86	1.6	0.76	5.4	2.7	2.6	0.57	0.59
27-March-2025	10-April-2025	0.94	1.1	1.2	1.5	1.0	0.94	1.0	2.2	0.72	3.3	1.4	1.6	1.5	0.68
10-April-2025	24-April-2025	1.2	0.91	0.88	1.6	1.3	0.88	1.1	1.7	0.68	3.3	2.1	2.0	0.45	2.3
24-April-2025	8-May-2025	0.75	1.0	1.3	2.6	0.92	0.90	1.1	1.9	0.56	2.4	1.3	1.1	0.41	0.40
8-May-2025	22-May-2025	0.58	0.58	0.84	1.2	0.96	0.70	1.0	1.6	0.51	2.0	1.2	1.1	0.34	0.78
22-May-2025	05-June-2025	1.1	1.0	1.1	0.67	0.78	0.68	0.59	1.2	0.70	3.0	1.7	1.6	0.73	0.27
05-June-2025	19-June-2025	0.80	0.83	1.4	1.5	0.81	0.91	1.6	2.1	0.60	3.7	1.7	1.8	1.2	0.53
19-June-2025	03-July-2025	1.2	1.3	1.8	0.73	0.80	0.86	0.80	1.0	0.44	5.6	3.6	2.9	1.0	0.29
03-July-2025	17-July-2025	0.98	0.96	2.2	1.3	1.4	1.2	1.4	1.6	0.70	8.0	3.4	2.4	0.51	2.0
17-July-2025	31-July-2025	1.0	1.0	1.7	1.9	0.88	1.2	1.5	1.6	0.48	4.0	2.4	1.7	0.94	0.52
31-July-2025	14-August-2025	0.87	0.92	2.4	1.2	1.7	1.6	1.9	2.1	1.0	6.9	2.5	1.6	0.76	0.70
14-August-2025	28-August-2025	1.2	1.2	1.1	1.6	0.81	1.0	1.2	2.3	0.40	2.0	2.1	1.6	0.48	0.50
28-August-2025	11-September-2025	0.74	0.71	1.4	1.6	1.6	1.4	0.49	1.7	0.47	2.5	1.7	0.49	0.51	0.33
11-September-2025	25-September-2025	0.52	0.74	1.1	1.3	1.0	1.4	1.7	2.1	0.51	2.0	1.1	0.91	0.39	0.94
25-September-2025	09-October-2025	0.76	0.76	1.5	1.5	0.60	0.84	0.74	1.2	0.36	1.8	1.2	1.1	0.49	0.49
09-October-2025	23-October-2025	0.75	1.2	2.1	1.8	1.6	1.6	1.3	1.6	0.58	3.2	2.0	1.3	0.38	0.61
23-October-2025	06-November-2025	1.1	0.73	0.54	0.62	0.39	0.43	0.68	1.1	0.30	0.56	1.0	1.1	0.75	0.55
06-November-2025	20-November-2025	2.0	0.98	0.71	1.2	0.76	1.4	1.5	1.6	0.40	1.1	2.8	3.1	0.55	0.65
20-November-2025	04-December-2025	1.6	0.86	1.2	0.92	1.1	1.5	0.78	0.74	0.66	2.2	6.9	3.8	1.3	0.69
04-December-2025	18-December-2025	1.6	1.3	1.7	0.86	0.65	0.78	0.75	0.67	0.67	1.5	1.4	2.2	1.1	0.64

ii. B) Table B-1 provides the results of calculations required by section 62 to identify whether a statistically significant increase in the concentration of benzene occurred. As shown in Table B-1 there was a statistically significant increase in 2025 at station 10-TANKS. across stations 1-12. Results for 13-DOCKS1 & 14-DOCKS2 can be found in Table B-2

Table B-1 Results of Section 62 Calculations

			1-FLARE	2-SPHERE	3-WWTP	4-WWTP	5-WWTP	6-FIREHALL	7-RAIL	8-RAIL	9-TERMINAL	10-TANKS	11-TANKS	12-TANKS
2018-2020	61(2)3.	X	0.28	0.06	0.46	0.32	0.09	0.14	0.46	0.43	-0.44	0.52	0.63	0.64
	61(2)4.	S^2	0.22	0.13	0.24	0.20	0.14	0.10	0.12	0.08	0.12	0.20	0.09	0.14
2025	62(3)3.	X	0.10	0.05	0.24	0.18	-0.06	-0.02	0.01	0.39	-0.54	0.99	0.72	0.59
	62(3)4.	S^2	0.14	0.27	0.12	0.13	0.11	0.09	0.12	0.14	0.08	0.34	0.20	0.25
	62(3)5.	T	-2.06	-0.08	-2.58	-1.57	-1.96	-2.25	-5.78	-0.56	-1.40	3.75	0.93	-0.44
	62(3)6.	V	52.42	33.15	61.24	51.65	47.96	44.65	43.15	34.61	51.68	35.38	32.39	34.52
	62(3)7.	T	3.46	.	.	3.46	3.46	3.46	3.46	.	3.46	.	.	.
	62(3)8.	Statistically Significant Increase?	No	No	No	No	No	No	No	No	No	No	Yes	No

ii) C) Table B-2 presents the results of the calculation required under Section 61 and establishes the three-year benzene measurement baseline. The statistical analysis required under subsection 62(3) could not be completed, as the monitoring stations have not been in operation for a minimum of four full calendar years

Table B-2: Results of Section 61 calculation for Station 13 & 14

			13-DOCKS1	14-DOCKS2
2023-2025	61(2)3.	X	-0.12	-0.38
	61(2)4.	S²	0.28	0.23

ii. D) Table C-1 provides a summary of the annual average benzene concentration results from the time that the monitor was first required by subsection 60(1).

Table C-1 Annual Average Benzene Concentration Results at each Station

Year/Results (ug/m ³)	1-FLARE	2-SPHERE	3-WWTP	4-WWTP	5-WWTP	6-FIREHALL	7-RAIL	8-RAIL	9-TERMINAL	10-TANKS	11-TANKS	12-TANKS	13-DOCK1 (Note 1)	14-DOCK2 (Note 1)
2018	1.4	1.1	2.0	1.9	1.3	1.3	2.0	1.7	0.8	1.6	2.0	2.0	-	-
2019	1.5	1.2	1.8	1.3	1.3	1.2	1.8	1.7	0.7	1.9	2.0	2.1	-	-
2020	1.5	1.1	1.6	1.4	1.0	1.1	1.3	1.5	0.6	2.1	1.9	1.9	-	-
2021	1.1	0.8	1.2	1.3	0.9	1.0	1.2	2.1	0.6	3.5	1.9	1.5	-	-
2022	1.2	1.0	1.7	1.9	1.4	1.2	1.4	2.4	0.6	3.4	2.0	2.0	1.5	1.0
2023	1.9	1.1	1.4	1.5	1.1	1.1	1.2	1.4	0.6	2.7	2.0	2.4	1.2	0.7
2024	1.5	0.9	1.3	1.6	1.3	1.1	1.3	1.8	0.6	2.6	2.0	1.6	1.1	0.9
2025	1.2	1.4	1.3	1.3	1.0	1.0	1.1	1.6	0.6	3.1	2.3	2.0	0.8	0.7

Note 1: Annual averages for the two dock stations are only available starting from 2022 as they only began to be sampled on November 24, 2022 as per the amended PRIS Fence Line Benzene Monitoring Plan dated November 15, 2022.

iii. As per table B-1, there was a statistically significant increase in the concentration of benzene at monitor 10-Tanks. A notification regarding the statistically significant increase was made to the local provincial officer on March 27th, 2026, as required by Section 63 (1). A written report will be provided to the local provincial officer by September 27th, 2026, as required under Section 63 (2).