

Ontario Ministry of the Environment, Conservation and Parks (MECP)
 Petroleum Industry Refining Standard (PRIS)
 Shell Canada Products Sarnia Manufacturing Centre
 Sarnia, Ontario Canada



2020 Property Line Benzene Monitoring Results

Sample Deployment Date		24-Dec-19	8-Jan-20	22-Jan-20	5-Feb-20	19-Feb-20	4-Mar-20	18-Mar-20	1-Apr-20	15-Apr-20	29-Apr-20	13-May-20	27-May-20	10-Jun-20
Sample Retrieval Date		8-Jan-20	22-Jan-20	5-Feb-20	19-Feb-20	4-Mar-20	18-Mar-20	1-Apr-20	15-Apr-20	29-Apr-20	13-May-20	27-May-20	10-Jun-20	24-Jun-20
UTM Coordinates	Location	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
382166mE, 4752034mN	Station #1	2.08	1.81	2.44	1.73	2.68	1.56	1.35	1.78	1.75	1.66	1.61	2.22	1.74
382511mE, 4752034mN	Station #2	1.51	1.50	1.56	1.38	2.01	1.09	1.33	1.19	1.14	1.27	1.37	1.49	1.30
383172mE, 4752033mN	Station #3	1.08	1.23	1.27	1.06	1.47	0.94	1.40	1.19	1.07	1.21	1.17	1.37	0.96
383332mE, 4751409mN	Station #4	1.07	1.17	1.15	0.90	1.50	1.00	1.52	1.26	0.96	1.25	1.20	1.21	0.87
382517mE, 4751245mN	Station #5	1.70	1.90	1.66	1.51	2.30	1.64	1.50	2.46	1.23	1.53	1.10	1.28	1.39
382125mE, 4750795mN	Station #6	1.26	1.77	1.29	1.77	2.47	1.36	1.86	2.09	1.38	1.65	1.24	1.25	1.38
381748mE, 4750810mN	Station #7	1.08	1.77	1.36	1.49	1.96	1.56	2.30	2.09	1.11	1.71	1.11	1.50	1.89
381455mE, 4750820mN	Station #8	2.47	2.85	3.87	4.51	4.77	5.16	10.00	6.64	6.61	11.70	4.29	8.65	9.49
381052mE, 4750852mN	Station #9	0.72	0.84	1.18	1.41	0.97	1.27	2.25	1.13	1.11	1.17	1.76	0.97	1.90
381112mE, 4751494mN	Station #10	1.24	1.60	1.32	1.05	0.68	1.33	1.90	1.73	1.43	0.97	1.74	1.19	1.22
381438mE, 4751966mN	Station #11	4.70	4.85	4.21	2.55	1.04	3.84	4.13	2.61	2.31	2.13	4.10	2.09	1.43
381773mE, 4752076mN	Station #12	7.66	3.81	4.53	5.28	6.25	6.20	2.32	2.55	3.43	2.86	3.99	4.32	1.92

Field QA/QC Data

Field Blank #1	Location	Station #4	Station #5	Station #6	Station #1	Station #2	Station #3	Station #4	Station #5	Station #6	Station #1	Station #2	Station #3	Station #4
	Value (ug/m3)	<0.29	<0.31	<0.31	<0.32	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.30	<0.30
Field Duplicate	Location	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1	Station #2	Station #3	Station #4
	Value (ug/m3)	1.12	1.74	1.36	1.60	4.62	1.25	2.24	2.52	3.18	1.57	1.32	1.42	0.92
	RPD (%)	4.67%	8.42%	5.43%	7.38%	3.14%	1.57%	17.89%	3.45%	7.29%	5.42%	3.65%	3.65%	5.75%
Field Blank #2	Location	Station #10	Station #11	Station #12	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #7	Station #8	Station #9	Station #10
	Value (ug/m3)	<0.29	<0.32	<0.31	<0.32	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.30	<0.30

Notes:

- 1) RPD is Relative Percent Difference (Difference / Mean expressed as a percent). Used as the default precision evaluation.
- 2) Sample Period June 10 to June 24: Results for sample at Station #7 may be biased slightly low due to instrument drift
All other QC passed for this sample and all QC parameters were acceptable for remaining samples.
- 3) Sample Period Aug. 19 to Sept. 2: Station #6 sample tube was installed in the field upside down. This sample should not be considered as a representative sample.
- 4) Data for samples collected from STN-7 & STN -11 has been omitted due to laboratory quality control criteria not meeting the method requirements.

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2019 Property Line Benzene Monitoring Results

Sample Deployment Date		27-Dec-18	9-Jan-19	23-Jan-19	6-Feb-19	20-Feb-19	6-Mar-19	20-Mar-19	3-Apr-19	17-Apr-19	1-May-19	15-May-19	29-May-19	12-Jun-19
Sample Retrieval Date		9-Jan-19	23-Jan-19	6-Feb-19	20-Feb-19	6-Mar-19	20-Mar-19	3-Apr-19	17-Apr-19	1-May-19	15-May-19	29-May-19	12-Jun-19	26-Jun-19
UTM Coordinates	Location	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
382166mE, 4752034mN	Station #1	2.14	1.07	2.90	1.28	1.24	1.34	1.61	1.27	1.03	1.01	1.44	1.52	1.38
382511mE, 4752034mN	Station #2	1.44	1.19	3.04	1.16	1.20	1.27	1.02	1.24	0.78	0.87	1.50	1.29	1.17
383172mE, 4752033mN	Station #3	1.01	0.74	1.57	1.48	0.99	0.91	1.15	1.17	0.92	1.17	1.62	1.42	1.45
383332mE, 4751409mN	Station #4	1.12	0.85	1.25	1.26	1.25	1.19	1.20	1.11	0.99	1.12	1.63	1.36	1.60
382517mE, 4751245mN	Station #5	1.77	1.39	2.32	1.94	2.19	1.91	1.26	1.46	1.07	0.96	1.44	1.36	1.18
382125mE, 4750795mN	Station #6	1.95	2.37	2.37	1.60	2.89	1.99	2.14	1.74	1.26	1.03	1.61	1.25	1.12
381748mE, 4750810mN	Station #7	2.25	2.69	1.86	1.63	2.45	1.55	2.04	2.05	1.56	1.60	1.45	1.46	1.32
381455mE, 4750820mN	Station #8	7.20	10.50	2.99	8.49	4.82	0.89	9.79	11.10	14.60	8.33	3.49	3.82	25.00
381052mE, 4750852mN	Station #9	1.00	3.41	1.59	3.20	1.79	0.61	1.69	2.38	1.01	1.39	1.75	1.16	1.15
381112mE, 4751494mN	Station #10	2.32	1.29	1.20	2.52	1.35	1.49	1.43	3.06	1.45	2.56	2.30	1.98	0.96
381438mE, 4751966mN	Station #11	1.35	1.19	1.70	1.07	0.92	1.35	1.37	1.23	2.67	1.15	2.20	1.52	1.03
381773mE, 4752076mN	Station #12	1.63	0.98	2.41	0.93	0.98	1.50	2.00	1.23	1.96	1.68	2.07	2.38	1.81

Field QA/QC Data

Field Blank #1	Location	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1	Station #2
	Value (ug/m3)	<0.34	<0.32	<0.32	<0.32	<0.32	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.30	<0.30
Field Duplicate	Location	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1	Station #2
	Value (ug/m3)	1.33	0.76	1.35	1.88	2.62	1.57	10.10	2.41	1.40	1.10	1.99	1.37	1.14
	RPD (%)	7.64%	2.70%	8.00%	3.09%	9.34%	1.29%	3.17%	1.26%	3.45%	4.35%	3.86%	9.87%	2.56%
Field Blank #2	Location	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8
	Value (ug/m3)	<0.34	<0.32	<0.32	<0.32	<0.32	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.30	<0.30

Notes:

- 1) RPD is Relative Percent Difference (Difference / Mean expressed as a percent). Used as the default precision evaluation.
- 2) Sample Period Feb 6 to Feb 20: Results for sample at Station #1 may be biased slightly low, based on one of the QC checks being slightly out of tolerance. All other QC passed.



2018 Property Line Benzene Monitoring Results

Sample Deployment Date		10-Jan-18	24-Jan-18	7-Feb-18	21-Feb-18	7-Mar-18	21-Mar-18	4-Apr-18	18-Apr-18	2-May-18	16-May-18	30-May-18	13-Jun-18	27-Jun-18
Sample Retrieval Date		24-Jan-18	7-Feb-18	21-Feb-18	7-Mar-18	21-Mar-18	4-Apr-18	18-Apr-18	2-May-18	16-May-18	30-May-18	13-Jun-18	27-Jun-18	11-Jul-18
UTM Coordinates	Location	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
382166mE, 4752034mN	Station #1	7.68	8.25	7.96	4.53	4.78	1.40	3.85	1.94	2.52	5.59	2.39	3.62	4.72
382511mE, 4752034mN	Station #2	5.65	3.97	5.00	2.65	2.50	1.03	2.94	1.50	2.00	3.44	1.77	2.51	2.24
383172mE, 4752033mN	Station #3	3.04	1.71	3.00	2.11	1.51	1.12	1.75	1.36	2.02	2.30	1.98	1.80	1.26
383332mE, 4751409mN	Station #4	2.19	1.60	2.05	1.39	1.47	1.11	1.36	1.23	1.75	1.71	1.90	2.13	0.96
382517mE, 4751245mN	Station #5	3.00	2.82	2.97	1.79	2.79	1.68	2.80	2.27	1.70	1.92	1.70	1.97	1.39
382125mE, 4750795mN	Station #6	2.17	2.55	2.58	2.37	3.38	2.56	2.18	2.14	1.83	2.23	2.05	2.65	1.76
381748mE, 4750810mN	Station #7	3.17	2.96	2.89	2.93	3.87	2.61	2.97	2.82	2.39	2.55	2.95	3.17	2.21
381455mE, 4750820mN	Station #8	5.54	7.28	9.60	20.80	13.50	14.30	16.10	9.64	7.94	6.60	11.20	15.10	8.83
381052mE, 4750852mN	Station #9	1.14	2.22	2.85	6.47	2.81	2.32	2.65	2.25	2.51	2.05	3.13	2.67	1.57
381112mE, 4751494mN	Station #10	4.13	4.28	5.66	3.73	4.34	2.67	2.72	5.00	1.51	1.77	4.91	2.61	3.56
381438mE, 4751966mN	Station #11	21.20	11.10	11.90	4.96	2.81	5.55	9.35	8.31	3.62	6.45	9.11	6.78	6.43
381773mE, 4752076mN	Station #12	53.70	24.80	34.90	14.20	3.08	5.37	9.14	9.53	14.40	11.90	5.49	10.60	20.60

Field QA/QC Data

Field Blank #1	Location	Station #1	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1
	Value (ug/m3)	<0.31	<0.32	<0.32	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.30	See Note 2	<0.30	<0.30
Field Duplicate	Location	Station #1	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1
	Value (ug/m3)	7.67	3.76	3.02	1.39	2.72	2.42	2.94	9.43	2.52	1.74	See Note 2	10.40	4.66
	RPD (%)	0.13%	5.29%	0.67%		2.51%	5.47%	1.01%	2.18%	0.40%	1.69%	See Note 2	1.89%	1.27%
Field Blank #2	Location	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7
	Value (ug/m3)	<0.31	<0.32	<0.32	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.30	<0.30	<0.30	<0.30

Notes:

- 1) RPD is Relative Percent Difference (Difference / Mean expressed as a percent). Used as the default precision evaluation.
- 2) Sample Period May 30-June 11; Station#11: No analytical value was reported for the Station #11 routine sample nor the blank sample at Station #11, due to laboratory error. The samples were compromised during an instrument error, with no option to rerun. The duplicate and routine values have been interchanged for reporting purposes. The laboratory has also indicated the reported values at Station #10, Station#11 and Station#12 may be biased low.
- 3) Sample Period July 11-25: Station #8 was impacted by a >50% off-site wind profile for this period.
- 4) Sample Period Sept. 5 - 19: ALS was unable to report results for Stations 2 and 3 due to a power failure at the laboratory while analyzing the samples.
- 5) Sample Period Nov. 14-28: Sample tube at STN-7 was missing from shroud at end of sampling period (November 28).

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2018 Property Line Benzene Monitoring Results

Sample Deployment Date		11-Jul-18	25-Jul-18	8-Aug-18	22-Aug-18	5-Sep-18	19-Sep-18	3-Oct-18	17-Oct-18	31-Oct-18	14-Nov-18	28-Nov-18	12-Dec-18
Sample Retrieval Date		25-Jul-18	8-Aug-18	22-Aug-18	5-Sep-18	19-Sep-18	3-Oct-18	17-Oct-18	31-Oct-18	14-Nov-18	28-Nov-18	12-Dec-18	27-Dec-18
UTM Coordinates	Location	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
382166mE, 4752034mN	Station #1	2.34	1.36	1.30	2.70	1.25	1.07	1.19	1.49	0.96	0.91	1.29	1.50
382511mE, 4752034mN	Station #2	1.73	1.03	1.09	1.76	See Note 4	0.99	1.01	1.32	0.94	0.86	1.12	1.74
383172mE, 4752033mN	Station #3	1.22	0.85	1.03	1.26	See Note 4	0.86	0.89	0.94	0.91	0.79	0.93	1.31
383332mE, 4751409mN	Station #4	1.21	0.91	1.17	1.00	1.12	0.86	0.91	1.19	0.93	0.79	0.99	1.44
382517mE, 4751245mN	Station #5	1.78	1.31	1.72	1.76	1.37	1.26	1.20	1.53	1.80	1.24	1.75	2.56
382125mE, 4750795mN	Station #6	1.51	1.13	1.40	1.25	1.92	1.62	1.44	1.94	1.81	1.89	2.38	2.87
381748mE, 4750810mN	Station #7	1.23	1.13	1.42	0.91	1.63	1.59	1.23	2.34	1.95	See Note 5	2.28	2.29
381455mE, 4750820mN	Station #8	10.00	3.77	9.47	3.74	31.00	7.98	2.55	6.81	7.84	5.49	2.89	6.18
381052mE, 4750852mN	Station #9	1.64	1.03	2.03	1.34	4.69	2.38	1.05	1.90	1.39	1.04	0.98	1.86
381112mE, 4751494mN	Station #10	2.43	1.21	1.51	1.77	1.21	1.56	1.23	0.91	1.29	1.47	1.26	2.07
381438mE, 4751966mN	Station #11	3.15	1.17	1.08	5.62	0.91	1.08	1.30	0.92	0.91	0.94	0.91	1.53
381773mE, 4752076mN	Station #12	3.54	1.50	1.13	7.19	1.05	1.22	1.55	1.27	1.00	0.90	1.00	1.50

Field QA/QC Data

<u>Field Blank #1</u>	Location	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1
	Value (ug/m3)	<0.30	<0.30	<0.30	<0.30	<0.30	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.29
<u>Field Duplicate</u>	Location	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1
	Value (ug/m3)	1.74	0.91	0.98	1.61	1.67	1.48	2.76	1.98	1.23	0.90	1.04	1.56
	RPD (%)	0.58%	7.06%	16.24%	8.52%	13.02%	6.92%	8.24%	4.21%	4.65%	4.26%	4.00%	10.34%
<u>Field Blank #2</u>	Location	Station #8	Station #9	Station #10	Station #11	Station #12	Station #1	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7
	Value (ug/m3)	<0.30	<0.30	<0.30	<0.30	<0.30	<0.31	<0.33	<0.31	<0.31	<0.31	<0.31	<0.29