ANALYTICAL REPORT

February 05, 2019

Marathon Petroleum Co., MI

Sample Delivery Group:	L1066672
Samples Received:	02/05/2019
Project Number:	C85ES0041
Description:	February 2019 Polar Vortex
Report To:	Ms. Kay Bedenis 1001 S. Oakwood Ave Detroit, MI 48217

Entire Report Reviewed By:

Craig Cothron
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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UPWIND-WEST PLANT ENT L1066672-01 Air

Collected by: Kay Bedenis
Collected date/time: 02/02/19 18:13
Received date/time: 02/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1232577	2	02/05/19 11:40	02/05/19 11:40	AMC

DOWNWIND-RIVERSIDE AND FERNEY L1066672-02 Air

Collected by: Kay Bedenis
Collected date/time: 02/02/19 17:40
Received date/time: 02/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1232577	2	02/05/19 12:21	02/05/19 12:21	AMC

DOWNWIND 2 WOODMERE AND AXIS L1066672-03 Air

Collected by: Kay Bedenis
Collected date/time: 02/02/19 17:57
Received date/time: 02/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1232577	2	02/05/19 13:03	02/05/19 13:03	AMC

ORMOND & HEIDT ST L1066672-04 Air

Collected by: Kay Bedenis
Collected date/time: 02/02/19 20:12
Received date/time: 02/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1232577	2	02/05/19 13:44	02/05/19 13:44	AMC

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	13.5	32.2		2	WG1232577
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1232577
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1232577
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1232577
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1232577
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1232577
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1232577
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1232577
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1232577
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1232577
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1232577
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1232577
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1232577
Chloromethane	74-87-3	50.50	0.400	0.826	0.712	1.47		2	WG1232577
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1232577
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1232577
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1232577
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1232577
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1232577
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1232577
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1232577
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1232577
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1232577
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1232577
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1232577
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1232577
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1232577
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1232577
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1232577
1,4-Dioxane	123-91-1	88.10	0.400	1.44	1.34	4.84		2	WG1232577
Ethanol	64-17-5	46.10	1.26	2.38	29.4	55.4		2	WG1232577
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG1232577
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1232577
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG1232577
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1232577
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1232577
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1232577
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1232577
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1232577
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1232577
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1232577
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1232577
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1232577
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	3.65	10.8		2	WG1232577
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1232577
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1232577
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1232577
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1232577
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1232577
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1232577
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1232577
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1232577
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1232577
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	1.31	3.86		2	WG1232577
Toluene	108-88-3	92.10	0.400	1.51	0.598	2.25		2	WG1232577
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1232577

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1232577
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1232577
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1232577
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1232577
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1232577
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1232577
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1232577
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1232577
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1232577
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG1232577
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG1232577
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.3*				WG1232577

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	35.2	83.7		2	WG1232577
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1232577
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1232577
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1232577
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1232577
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1232577
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1232577
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1232577
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1232577
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1232577
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1232577
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1232577
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1232577
Chloromethane	74-87-3	50.50	0.400	0.826	0.719	1.49		2	WG1232577
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1232577
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1232577
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1232577
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1232577
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1232577
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1232577
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1232577
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1232577
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1232577
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1232577
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1232577
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1232577
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1232577
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1232577
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1232577
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1232577
Ethanol	64-17-5	46.10	1.26	2.38	7.76	14.6		2	WG1232577
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG1232577
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1232577
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG1232577
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1232577
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1232577
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1232577
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1232577
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1232577
n-Hexane	110-54-3	86.20	0.400	1.41	0.444	1.57		2	WG1232577
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1232577
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1232577
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1232577
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	3.66	10.8		2	WG1232577
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1232577
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1232577
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1232577
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1232577
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1232577
Propene	115-07-1	42.10	0.800	1.38	2.01	3.46		2	WG1232577
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1232577
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1232577
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1232577
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG1232577
Toluene	108-88-3	92.10	0.400	1.51	0.460	1.73		2	WG1232577
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1232577

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1232577
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1232577
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1232577
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1232577
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1232577
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1232577
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1232577
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1232577
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1232577
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG1232577
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG1232577
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.6*				WG1232577

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	8.39	19.9		2	WG1232577
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1232577
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1232577
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1232577
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1232577
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1232577
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1232577
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1232577
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1232577
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1232577
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1232577
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1232577
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1232577
Chloromethane	74-87-3	50.50	0.400	0.826	1.33	2.76		2	WG1232577
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1232577
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1232577
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1232577
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1232577
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1232577
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1232577
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1232577
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1232577
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1232577
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1232577
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1232577
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1232577
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1232577
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1232577
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1232577
1,4-Dioxane	123-91-1	88.10	0.400	1.44	2.00	7.22		2	WG1232577
Ethanol	64-17-5	46.10	1.26	2.38	19.5	36.8		2	WG1232577
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG1232577
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1232577
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG1232577
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1232577
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1232577
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1232577
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1232577
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1232577
n-Hexane	110-54-3	86.20	0.400	1.41	0.521	1.84		2	WG1232577
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1232577
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1232577
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1232577
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1232577
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1232577
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1232577
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1232577
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1232577
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1232577
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG1232577
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1232577
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1232577
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1232577
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	1.85	5.45		2	WG1232577
Toluene	108-88-3	92.10	0.400	1.51	0.526	1.98		2	WG1232577
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1232577

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1232577
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1232577
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1232577
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1232577
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1232577
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1232577
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1232577
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1232577
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1232577
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG1232577
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG1232577
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*100*				WG1232577

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	5.07	12.0		2	WG1232577
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG1232577
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG1232577
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG1232577
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG1232577
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG1232577
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG1232577
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG1232577
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG1232577
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1232577
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG1232577
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG1232577
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG1232577
Chloromethane	74-87-3	50.50	0.400	0.826	0.595	1.23		2	WG1232577
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG1232577
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG1232577
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG1232577
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG1232577
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG1232577
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG1232577
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG1232577
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG1232577
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG1232577
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1232577
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1232577
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1232577
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG1232577
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG1232577
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG1232577
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG1232577
Ethanol	64-17-5	46.10	1.26	2.38	3.54	6.67		2	WG1232577
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG1232577
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG1232577
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG1232577
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	ND	ND		2	WG1232577
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG1232577
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG1232577
Heptane	142-82-5	100	0.400	1.64	ND	ND		2	WG1232577
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG1232577
n-Hexane	110-54-3	86.20	0.400	1.41	ND	ND		2	WG1232577
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG1232577
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG1232577
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG1232577
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG1232577
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG1232577
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG1232577
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG1232577
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG1232577
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1232577
Propene	115-07-1	42.10	0.800	1.38	7.32	12.6		2	WG1232577
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG1232577
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG1232577
Tetrachloroethylene	127-18-4	166	0.400	2.72	ND	ND		2	WG1232577
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG1232577
Toluene	108-88-3	92.10	0.400	1.51	ND	ND		2	WG1232577
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG1232577

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1232577
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG1232577
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1232577
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG1232577
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG1232577
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG1232577
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1232577
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG1232577
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG1232577
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG1232577
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG1232577
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*100*				WG1232577

Method Blank (MB)

(MB) R3381343-3 02/05/19 09:57

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3381343-3 02/05/19 09:57

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	0.0623	J	0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	U		0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	*101*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3381343-1 02/05/19 08:35 • (LCSD) R3381343-2 02/05/19 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.94	4.11	105	110	55.0-148			4.45	25
Propene	3.75	3.48	3.53	92.8	94.2	64.0-144			1.44	25
Dichlorodifluoromethane	3.75	3.87	4.03	103	107	64.0-139			4.00	25
1,2-Dichlorotetrafluoroethane	3.75	3.91	4.03	104	107	70.0-130			3.08	25
Chloromethane	3.75	3.71	3.78	98.9	101	70.0-130			1.86	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3381343-1 02/05/19 08:35 • (LCSD) R3381343-2 02/05/19 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Vinyl chloride	3.75	3.49	3.76	93.0	100	70.0-130			7.56	25
1,3-Butadiene	3.75	3.50	3.71	93.2	98.9	70.0-130			5.97	25
Bromomethane	3.75	3.87	3.85	103	103	70.0-130			0.459	25
Chloroethane	3.75	3.90	3.83	104	102	70.0-130			1.73	25
Trichlorofluoromethane	3.75	3.93	3.80	105	101	70.0-130			3.44	25
1,1,2-Trichlorotrifluoroethane	3.75	3.81	3.84	102	103	70.0-130			0.833	25
1,1-Dichloroethene	3.75	3.75	3.78	100	101	70.0-130			0.688	25
1,1-Dichloroethane	3.75	3.68	3.75	98.2	100	70.0-130			1.85	25
Acetone	3.75	3.87	3.81	103	102	70.0-130			1.73	25
2-Propanol	3.75	3.92	3.89	105	104	70.0-139			0.702	25
Carbon disulfide	3.75	3.77	3.83	100	102	70.0-130			1.59	25
Methylene Chloride	3.75	3.46	3.48	92.3	92.8	70.0-130			0.533	25
MTBE	3.75	3.85	3.85	103	103	70.0-130			0.101	25
trans-1,2-Dichloroethene	3.75	3.73	3.77	99.4	101	70.0-130			1.13	25
n-Hexane	3.75	3.81	3.80	102	101	70.0-130			0.110	25
Vinyl acetate	3.75	3.91	3.90	104	104	70.0-130			0.389	25
Methyl Ethyl Ketone	3.75	3.94	3.95	105	105	70.0-130			0.162	25
cis-1,2-Dichloroethene	3.75	3.70	3.73	98.8	99.4	70.0-130			0.649	25
Chloroform	3.75	3.78	3.80	101	101	70.0-130			0.430	25
Cyclohexane	3.75	3.77	3.78	101	101	70.0-130			0.197	25
1,1,1-Trichloroethane	3.75	3.86	3.85	103	103	70.0-130			0.189	25
Carbon tetrachloride	3.75	3.88	3.87	103	103	70.0-130			0.269	25
Benzene	3.75	3.78	3.76	101	100	70.0-130			0.575	25
1,2-Dichloroethane	3.75	3.74	3.72	99.7	99.2	70.0-130			0.502	25
Heptane	3.75	3.78	3.82	101	102	70.0-130			1.01	25
Trichloroethylene	3.75	3.84	3.80	102	101	70.0-130			1.03	25
1,2-Dichloropropane	3.75	3.73	3.79	99.4	101	70.0-130			1.56	25
1,4-Dioxane	3.75	4.07	4.04	109	108	70.0-140			0.845	25
Bromodichloromethane	3.75	3.80	3.83	101	102	70.0-130			0.728	25
cis-1,3-Dichloropropene	3.75	3.88	3.86	103	103	70.0-130			0.464	25
4-Methyl-2-pentanone (MIBK)	3.75	3.94	3.86	105	103	70.0-139			2.01	25
Toluene	3.75	3.99	3.96	106	106	70.0-130			0.796	25
trans-1,3-Dichloropropene	3.75	3.89	3.90	104	104	70.0-130			0.429	25
1,1,2-Trichloroethane	3.75	3.86	3.83	103	102	70.0-130			0.578	25
Tetrachloroethylene	3.75	3.90	3.87	104	103	70.0-130			1.00	25
Methyl Butyl Ketone	3.75	4.14	4.06	110	108	70.0-149			1.79	25
Dibromochloromethane	3.75	4.10	4.09	109	109	70.0-130			0.414	25
1,2-Dibromoethane	3.75	3.87	3.89	103	104	70.0-130			0.475	25
Chlorobenzene	3.75	4.05	4.01	108	107	70.0-130			0.833	25
Ethylbenzene	3.75	4.18	4.18	111	111	70.0-130			0.00295	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3381343-1 02/05/19 08:35 • (LCSD) R3381343-2 02/05/19 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
m&p-Xylene	7.50	8.67	8.62	116	115	70.0-130			0.540	25
o-Xylene	3.75	4.13	4.13	110	110	70.0-130			0.0184	25
Styrene	3.75	4.21	4.23	112	113	70.0-130			0.546	25
Bromoform	3.75	4.29	4.29	114	114	70.0-130			0.00898	25
1,1,2,2-Tetrachloroethane	3.75	4.06	4.03	108	108	70.0-130			0.704	25
4-Ethyltoluene	3.75	4.31	4.29	115	114	70.0-130			0.417	25
1,3,5-Trimethylbenzene	3.75	4.32	4.24	115	113	70.0-130			1.78	25
1,2,4-Trimethylbenzene	3.75	4.30	4.27	115	114	70.0-130			0.823	25
1,3-Dichlorobenzene	3.75	4.36	4.30	116	115	70.0-130			1.38	25
1,4-Dichlorobenzene	3.75	4.44	4.39	118	117	70.0-130			1.14	25
Benzyl Chloride	3.75	4.73	4.62	126	123	70.0-152			2.49	25
1,2-Dichlorobenzene	3.75	4.26	4.23	114	113	70.0-130			0.639	25
1,2,4-Trichlorobenzene	3.75	4.22	4.13	112	110	70.0-160			2.07	25
Hexachloro-1,3-butadiene	3.75	4.06	3.92	108	105	70.0-151			3.36	25
Naphthalene	3.75	4.31	4.20	115	112	70.0-159			2.55	25
Allyl Chloride	3.75	3.72	3.66	99.1	97.5	70.0-130			1.65	25
2-Chlorotoluene	3.75	4.34	4.34	116	116	70.0-130			0.0180	25
Methyl Methacrylate	3.75	3.88	3.91	103	104	70.0-130			0.884	25
Tetrahydrofuran	3.75	3.79	3.71	101	98.8	70.0-137			2.14	25
2,2,4-Trimethylpentane	3.75	3.96	3.95	106	105	70.0-130			0.217	25
Vinyl Bromide	3.75	3.95	3.86	105	103	70.0-130			2.28	25
Isopropylbenzene	3.75	4.36	4.34	116	116	70.0-130			0.415	25
(S) 1,4-Bromofluorobenzene				*102*	*102*	*60.0-140*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

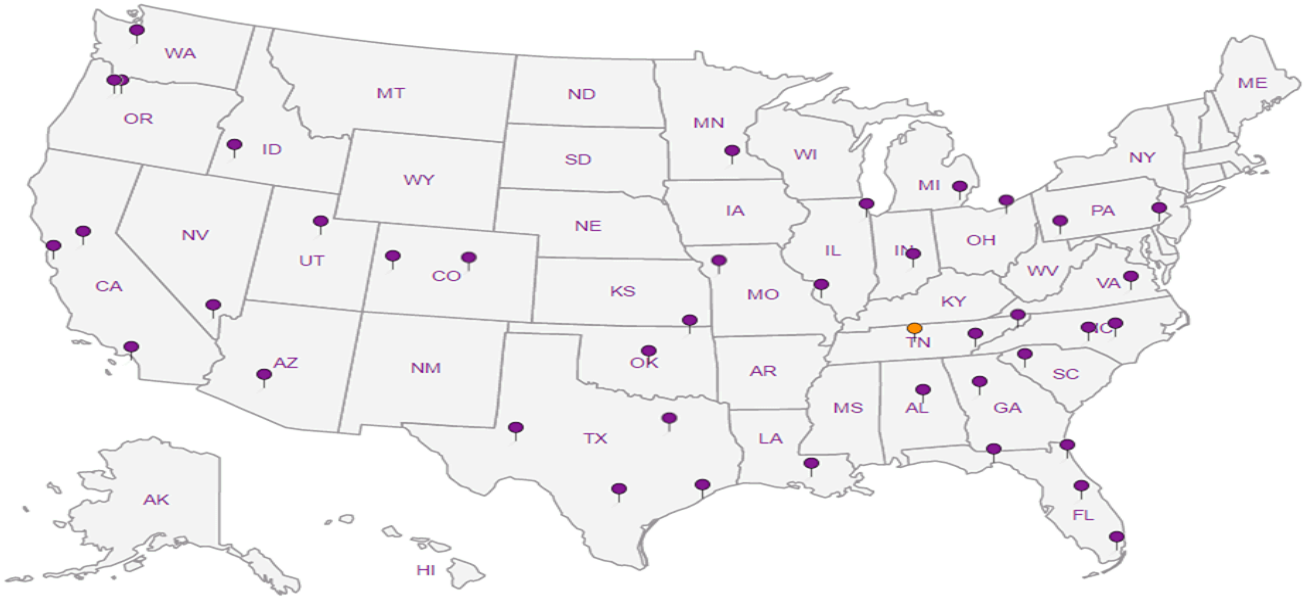
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-243

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L1066672

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CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)

Company Name:	Marathon Petroleum Co. LP
Branch/Location:	Detroit Refinery
Project Contact:	Kay Bedenis
Phone:	313-297-6289
Project Number:	C85ES0041
Project Name:	Polar Vortex
Project State:	Michigan
Sampled By (Print):	Kay Bedenis/Doug Pek
Sampled By (Sign):	Kay Bedenis
PO #:	4101178089
Regulatory Program:	Air

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	Marathon Petroleum Co. LP
Invoice To Address:	Attn: 5025 P.O. Box 7601 Springfield, OH 45501
Invoice To Phone:	

Data Package Options (billable)
- [ ] EPA Level III
- [ ] EPA Level IV

MS/MSD
- [ ] On your sample (billable)
- [ ] NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: TP-15	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					Y/N	Pick Letter	TP-15			
Mt. Juliet	Upwind 1 - West Plant Ent.	2/2/19	18:13	A	N	A	X	West Plant Entrance.		-01
Mt. Juliet	Downwind 1 - Riverside and Ferney	2/2/19	17:40	A			X	Riverside/Ferney		02
Mt. Juliet	Downwind 2 - Woodmere and Avis	2/2/19	17:57	A			X	Woodmere/Avis		03
Mt. Juliet	Ormond + Heidt St.	2/2/19	20:12	A			X	Ormond/Heidt		04

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed: ASAP

Transmit Prelim Rush Results by (complete what you want):

Email #1:	kfbedenis@marathonpetroleum.com
Email #2:	hfsheard@marathonpetroleum.com
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Kay Bedenis	2/4/19 11:54AM	W. Hahtala RHS	2/4/19 12:28
W. Hahtala RHS	2/4/19 1:13	Eric D	

PACE Project No.

Receipt Temp = Amb °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: MAROILDME	SDG#:	1066672	
Cooler Received/Opened On: 2 / 5 /19	Temperature:	Amb	
Received By: Eric Struck			
Signature:			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			