QUALITY ASSURANCE AUDIT REPORT

North Texas Commission
Ambient Air and Meteorological Monitoring

Prepared for:

North Texas Commission

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Conducted:
October and November 2023

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EXECUTIVE SUMMARY

On October 30th through November 1st and November 27th through 30th, an audit team from the AECOM ambient air group in Austin, Texas conducted performance and technical system audits of the North Texas Commission (NTC) ambient air monitoring network. The audits provide an independent assessment of the monitoring program.

The monitoring program at NTC consists of continuous gas chromatographs (GC), volatile organic compound (VOC) canister collection systems, and meteorological sensors including wind speed, wind direction, and temperature.

The performance and technical systems audit results indicate acceptable responses for measurement systems with the exceptions summarized below.

The sample cane inlet funnel at Wichita Falls was found to have sediment inside the walls of the funnel. It was recommended that the funnel be cleaned.

The wind speed sensor at Wichita Falls was outside of audit guidance (<0.4 g/cm) for starting threshold (0.4 g/cm clockwise).

Out of the 48 compounds being analyzed, ten compounds (ethylene, propylene acetylene, isoprene, styrene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, n-Decane, 1,2,3-trimethylbenzene, and n-undecane) were found to be outside of the audit objective of 70% - 130% recovery at several sites. In addition, the Benbrook and Rushing sites had the following GC compound recoveries outside of the audit specification:

Locations	Compounds
Benbrook	Ethylbenzene M&P-Xylene Isopropylbenzene N-Propylbenzene
Rushing	Cis-2-Pentene

These network GC audit results are comparable historically to other AECOM auto-GC audits. The GC audit results are contained in table ES-1. Technical systems audit results demonstrate satisfactory operational procedures for collecting valid data.

A performance evaluation (PE) sample is prepared by the AECOM QA group on a quarterly basis and submitted to the VOC laboratory for analysis. This performance evaluation sample contained known (spiked) concentrations of the target VOCs. A review of the sample recoveries for the spiked target VOCs shows that one out of the forty-four compounds were not within the range of expected values (70-130%).

- 1-Hexene (Not Detected)

AECOM QA staff shared the performance evaluation results with the VOC laboratory, and no other corrective action was taken. We will continue to evaluate these compounds in our PE samples and work with the lab to resolve this discrepancy The laboratory's most recent performance evaluation canister results for the third quarter of 2023 are contained below in Table ES-2.

Table ES-2. Audit Standard Results for all Network GCs

			Benbrook		Decatur		Dish		Eagle Mountain Lake	
Compound Name	CAS Number	Audit Conc (ppbc)	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery
Ethane	74-84-0	51.39	38.5	74.9%	41.0	79.8%	46.1	89.7%	44.3	86.2%
Ethylene	74-85-1	17.29	8.6	**49.6%**	11.6	**67.0%**	15.6	90.4%	10.6	**61.2%**
Propane	74-98-6	12.73	10.0	78.3%	10.1	79.0%	11.9	93.2%	10.5	82.6%
Propylene	115-07-1	13.09	9.1	**69.6%**	9.7	74.3%	10.3	79.1%	9.6	73.7%
Iso-Butane	75-28-5	17.13	16.3	94.9%	15.5	90.5%	17.6	102.9%	16.5	96.2%
N-Butane	106-97-8	17.29	17.1	98.7%	15.9	91.8%	18.2	105.5%	17.1	98.7%
Acetylene	74-86-2	8.73	5.0	**57.2%**	5.8	**66.9%**	7.0	79.9%	6.2	71.2%
Trans-2-Butene	624-64-6	17.13	16.0	93.6%	15.9	92.9%	17.7	103.4%	16.3	95.3%
1-Butene	106-98-9	17.29	16.7	96.7%	15.6	90.5%	17.8	102.9%	16.1	93.2%
Cis-2-Butene	590-18-1	17.45	16.7	95.8%	16.5	94.3%	18.7	107.2%	17.1	97.8%
Cyclopentane	287-92-3	21.41	20.1	93.8%	19.6	91.4%	22.0	102.9%	20.6	96.3%
Iso-Pentane	78-78-4	22.22	20.8	93.7%	20.3	91.4%	22.6	101.5%	21.3	95.7%
N-Pentane	109-66-0	21.62	20.9	96.6%	20.4	94.6%	22.7	105.0%	21.4	99.0%
1,3-Butadiene	106-99-0	16.65	15.9	95.6%	15.1	90.9%	16.7	100.2%	16.2	97.1%
Trans-2-Pentene	646-04-8	22.22	20.6	92.8%	19.7	88.8%	21.6	97.4%	20.7	93.1%
1-Pentene	109-67-1	21.82	19.1	87.5%	18.6	85.3%	19.9	91.4%	19.0	87.1%
Cis-2-Pentene	627-20-3	21.01	16.0	76.2%	16.4	78.2%	17.8	84.5%	17.6	83.7%
2,2-Dimethylbutane	75-83-2	25.94	24.2	93.3%	22.2	85.4%	24.7	95.3%	24.5	94.5%
2-Methylpentane	107-83-5	25.70	23.1	90.0%	22.6	88.0%	25.3	98.6%	24.3	94.4%
Isoprene	78-79-5	21.82	13.0	**59.7%**	15.1	**69.4%**	16.3	74.6%	15.4	70.5%
n-Hexane	110-54-3	25.94	25.0	96.3%	21.2	81.6%	23.7	91.2%	27.6	106.2%
Methylcyclopentane	108-87-2	25.94	20.2	77.8%	19.0	73.3%	20.5	79.2%	19.8	76.4%
2,4-Dimethylpentane	108-08-7	30.83	27.2	88.4%	27.4	88.8%	29.4	95.5%	31.1	100.8%
Benzene	71-43-2	25.70	19.6	76.1%	20.9	81.3%	22.1	85.9%	23.3	90.6%
Cyclohexane	110-82-7	25.94	23.5	90.5%	22.7	87.4%	23.4	90.2%	25.7	98.9%
2-Methylhexane	591-76-4	29.98	21.1	70.3%	21.5	71.6%	22.3	74.3%	22.1	73.8%
2,3-Dimethylpentane	565-59-3	29.98	28.6	95.4%	28.9	96.3%	28.1	93.8%	32.9	109.7%
3-Methylhexane	589-34-4	30.26	25.6	84.6%	26.2	86.6%	25.0	82.5%	29.0	95.7%
2,2,4-Trimethylpentane	540-84-1	34.59	28.0	80.8%	28.9	83.7%	29.3	84.7%	32.0	92.4%
n-Heptane	142-82-5	30.26	24.0	79.4%	25.2	83.4%	25.9	85.7%	28.1	92.7%
Methylcyclohexane	108-87-2	29.98	24.1	80.4%	24.7	82.3%	26.9	89.8%	27.0	89.9%
2,3,4-Trimethylpentane	565-75-3	34.26	27.5	80.1%	28.6	83.5%	30.2	88.2%	31.2	91.0%
Toluene	108-88-3	29.98	23.1	77.0%	24.1	80.5%	26.1	87.0%	27.6	92.1%
2-Methylheptane	592-27-8	34.26	26.71	78.0%	27.3	79.8%	29.4	85.7%	31.4	91.8%
3-Methylheptane	589-81-1	34.91	27.01	77.4%	27.9	79.8%	29.4	84.2%	31.2	89.5%
n-Octane	111-65-9	34.59	25.80	74.6%	28.0	81.0%	28.7	83.1%	31.1	90.0%
Ethylbenzene	100-41-4	34.26	23.62	**68.9%**	25.4	74.2%	26.9	78.6%	26.9	78.6%
M&P-Xylene	108-38-3	67.88	46.98	**69.2%**	48.7	71.8%	54.0	79.6%	52.6	77.5%
Styrene	100-42-5	32.32	18.91	**58.5%**	20.2	**62.5%**	23.8	73.5%	23.9	73.9%
O-Xylene	95-47-6	33.62	24.93	74.2%	26.0	77.2%	27.9	83.1%	28.4	84.4%
N-Nonane	111-84-2	37.82	27.18	71.9%	29.3	77.5%	31.8	84.0%	34.3	90.7%
Isopropylbenzene	98-82-8	37.45	24.78	**66.1%**	27.0	72.1%	29.6	79.0%	28.8	76.8%
n-Propylbenzene	103-65-1	36.36	23.37	**64.3%**	26.1	71.7%	28.0	77.0%	28.6	78.6%
1,3,5-Trimethylbenzene	108-67-8	38.18	24.07	**63.0%**	25.0	**65.6%**	27.7	72.5%	29.6	77.6%
1,2,4-Trimethylbenzene	95-63-6	38.18	24.57	**64.3%**	24.9	**65.1%**	29.3	76.8%	30.8	80.6%
n-Decane	124-18-5	42.83	24.57	**57.4%**	27.4	**63.9%**	31.3	73.2%	34.4	80.4%
1,2,3-Trimethylbenzene	526-73-8	38.55	20.45	**53.1%**	20.8	**54.1%**	25.4	**65.8%**	25.8	**66.8%**
n-Undecane	1120-21-4	46.22	22.77	**49.3%**	22.7	**49.0%**	28.2	**61.0%**	33.4	72.3%

[a] Compound order based on elution time.

Table ES-1. (Continued) Audit Standard Results for all Network GCs

			Elm Fork		Everman		Flower Mound		Godley	
Compound Name	CAS Number	Audit Conc (ppbc)	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery
Ethane	74-84-0	51.39	46.1	89.7%	47.6	92.7%	41.3	80.4%	49.8	96.9%
Ethylene	74-85-1	17.29	11.7	**67.6%**	15.3	88.7%	13.8	79.7%	15.8	91.1%
Propane	74-98-6	12.73	11.7	92.1%	11.6	91.2%	10.6	83.0%	11.9	93.9%
Propylene	115-07-1	13.09	10.5	79.9%	10.8	82.1%	10.1	76.8%	10.3	78.9%
Iso-Butane	75-28-5	17.13	17.3	100.9%	17.4	101.8%	15.8	92.0%	17.1	99.7%
N-Butane	106-97-8	17.29	17.6	101.8%	17.6	101.9%	16.2	93.8%	17.7	102.6%
Acetylene	74-86-2	8.73	6.1	70.4%	7.8	88.8%	6.7	76.5%	7.7	87.7%
Trans-2-Butene	624-64-6	17.13	17.5	102.1%	17.0	99.3%	15.7	91.9%	17.0	99.0%
1-Butene	106-98-9	17.29	17.2	99.2%	16.9	97.6%	15.5	89.4%	16.9	98.0%
Cis-2-Butene	590-18-1	17.45	17.9	102.8%	17.9	102.3%	16.5	94.4%	17.5	100.3%
Cyclopentane	287-92-3	21.41	21.7	101.3%	21.2	99.2%	19.7	92.2%	21.3	99.5%
Iso-Pentane	78-78-4	22.22	22.1	99.6%	21.9	98.6%	20.0	89.9%	22.2	99.7%
N-Pentane	109-66-0	21.62	22.6	104.6%	21.8	100.8%	20.2	93.2%	22.2	102.7%
1,3-Butadiene	106-99-0	16.65	16.9	101.6%	16.4	98.3%	15.0	90.3%	16.6	99.7%
Trans-2-Pentene	646-04-8	22.22	21.8	98.1%	21.2	95.3%	19.9	89.4%	21.7	97.6%
1-Pentene	109-67-1	21.82	21.1	96.7%	19.8	90.6%	17.5	80.4%	21.7	99.2%
Cis-2-Pentene	627-20-3	21.01	18.3	87.2%	18.2	86.4%	16.5	78.5%	19.4	92.3%
2,2-Dimethylbutane	75-83-2	25.94	24.8	95.8%	24.8	95.8%	22.5	86.7%	25.6	98.7%
2-Methylpentane	107-83-5	25.70	25.0	97.4%	24.7	96.1%	23.2	90.3%	25.5	99.2%
Isoprene	78-79-5	21.82	15.6	71.4%	16.8	76.9%	15.6	71.6%	17.1	78.4%
n-Hexane	110-54-3	25.94	22.7	87.5%	25.0	96.5%	22.8	87.9%	24.5	94.5%
Methylcyclopentane	108-87-2	25.94	21.2	81.6%	24.7	95.3%	22.1	85.1%	23.2	89.4%
2,4-Dimethylpentane	108-08-7	30.83	29.2	94.6%	32.3	104.9%	27.4	88.8%	31.6	102.5%
Benzene	71-43-2	25.70	22.1	86.0%	23.9	93.1%	21.2	82.6%	22.5	87.4%
Cyclohexane	110-82-7	25.94	24.7	95.3%	27.3	105.1%	23.0	88.5%	24.9	95.8%
2-Methylhexane	591-76-4	29.98	21.2	70.8%	27.4	91.3%	24.7	82.5%	24.8	82.8%
2,3-Dimethylpentane	565-59-3	29.98	33.1	110.3%	32.7	109.0%	27.0	90.2%	31.1	103.6%
3-Methylhexane	589-34-4	30.26	28.4	93.9%	30.3	100.2%	26.1	86.1%	28.6	94.6%
2,2,4-Trimethylpentane	540-84-1	34.59	31.2	90.1%	33.4	96.6%	29.7	85.9%	32.6	94.4%
n-Heptane	142-82-5	30.26	27.1	89.6%	29.8	98.5%	26.0	85.8%	28.6	94.4%
Methylcyclohexane	108-87-2	29.98	30.9	103.1%	29.5	98.5%	25.9	86.4%	28.7	95.7%
2,3,4-Trimethylpentane	565-75-3	34.26	25.2	73.7%	33.5	97.9%	29.1	84.8%	33.4	97.5%
Toluene	108-88-3	29.98	28.8	95.9%	29.1	97.2%	23.9	79.7%	27.6	91.9%
2-Methylheptane	592-27-8	34.26	29.6	86.5%	32.6	95.1%	28.8	84.1%	32.1	93.6%
3-Methylheptane	589-81-1	34.91	29.6	84.9%	33.1	94.7%	29.2	83.6%	32.5	93.2%
n-Octane	111-65-9	34.59	29.9	86.4%	33.7	97.6%	28.6	82.7%	33.5	96.8%
Ethylbenzene	100-41-4	34.26	27.8	81.2%	30.1	87.9%	27.1	79.1%	29.2	85.4%
M&P-Xylene	108-38-3	67.88	53.7	79.1%	58.9	86.8%	51.6	76.1%	57.0	84.0%
Styrene	100-42-5	32.32	19.7	**61.0%**	25.2	77.8%	22.8	70.6%	24.1	74.6%
O-Xylene	95-47-6	33.62	30.4	90.3%	32.1	95.4%	26.8	79.6%	30.8	91.5%
N-Nonane	111-84-2	37.82	32.3	85.5%	37.1	98.2%	29.7	78.6%	35.5	93.7%
Isopropylbenzene	98-82-8	37.45	29.9	79.7%	33.7	90.0%	28.2	75.4%	32.7	87.2%
n-Propylbenzene	103-65-1	36.36	27.6	75.8%	32.1	88.3%	27.0	74.2%	31.5	86.6%
1,3,5-Trimethylbenzene	108-67-8	38.18	28.2	73.9%	34.7	90.9%	26.6	**69.6%**	32.6	85.4%
1,2,4-Trimethylbenzene	95-63-6	38.18	26.5	**69.5%**	33.2	86.9%	26.3	**68.9%**	32.0	83.8%
n-Decane	124-18-5	42.83	29.7	**69.4%**	35.2	82.1%	26.3	**61.5%**	35.0	81.7%
1,2,3-Trimethylbenzene	526-73-8	38.55	23.5	**60.9%**	28.8	74.8%	23.8	**61.8%**	27.8	72.1%
n-Undecane	1120-21-4	46.22	25.2	**54.5%**	31.4	**68.0%**	24.8	**53.7%**	33.2	71.9%

[a] Compound order based on elution time.

Table ES-1. (Continued) Audit Standard Results for all Network GCs

			Kennedale		Mansfield		Rhome		Rushing		UTA	
Compound Name	CAS Number	Audit Conc (ppbc)	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery
Ethane	74-84-0	51.39	51.6	100.4%	42.2	82.1%	49.1	95.5%	43.6	84.9%	49.9	97.2%
Ethylene	74-85-1	17.29	13.8	79.9%	13.4	77.6%	13.2	76.6%	13.7	79.0%	10.9	**62.8%**
Propane	74-98-6	12.73	12.5	98.1%	11.0	86.5%	11.2	87.9%	10.6	82.9%	12.4	97.6%
Propylene	115-07-1	13.09	11.8	89.9%	9.5	72.6%	8.9	**68.1%**	9.1	**69.3%**	10.1	77.4%
Iso-Butane	75-28-5	17.13	17.4	101.8%	16.3	94.9%	16.3	95.1%	15.9	92.6%	18.2	106.0%
N-Butane	106-97-8	17.29	18.2	105.3%	16.2	93.6%	17.1	98.7%	16.5	95.2%	18.9	109.5%
Acetylene	74-86-2	8.73	7.7	88.0%	6.3	72.5%	7.3	83.1%	6.0	**69.2%**	7.3	83.3%
Trans-2-Butene	624-64-6	17.13	17.1	100.0%	15.9	92.8%	17.2	100.3%	16.1	93.9%	18.4	107.7%
1-Butene	106-98-9	17.29	17.1	98.7%	15.8	91.3%	16.7	96.3%	15.5	89.8%	18.0	104.3%
Cis-2-Butene	590-18-1	17.45	17.7	101.2%	16.7	95.5%	17.7	101.6%	16.4	93.8%	19.0	109.0%
Cyclopentane	287-92-3	21.41	21.5	100.6%	20.0	93.2%	21.2	99.1%	20.1	94.0%	22.9	107.0%
Iso-Pentane	78-78-4	22.22	21.5	96.9%	20.9	94.0%	22.2	99.9%	20.6	92.7%	23.7	106.5%
N-Pentane	109-66-0	21.62	22.3	103.0%	20.9	96.9%	22.1	102.3%	20.5	94.9%	23.6	109.2%
1,3-Butadiene	106-99-0	16.65	17.9	107.5%	16.0	96.1%	16.0	96.1%	13.9	83.3%	17.6	105.5%
Trans-2-Pentene	646-04-8	22.22	21.4	96.1%	20.5	92.2%	20.9	94.0%	19.0	85.6%	22.6	101.9%
1-Pentene	109-67-1	21.82	20.3	92.8%	20.1	92.3%	20.4	93.5%	17.4	79.7%	21.3	97.7%
Cis-2-Pentene	627-20-3	21.01	18.5	88.1%	18.1	86.0%	17.9	85.0%	14.1	**67.2%**	19.5	92.8%
2,2-Dimethylbutane	75-83-2	25.94	26.0	100.4%	24.7	95.2%	25.8	99.6%	23.4	90.1%	27.5	105.9%
2-Methylpentane	107-83-5	25.70	25.5	99.1%	24.1	93.9%	24.7	96.1%	23.2	90.2%	26.4	102.5%
Isoprene	78-79-5	21.82	15.1	**69.4%**	15.7	72.1%	16.8	77.0%	13.9	**63.6%**	17.7	81.0%
n-Hexane	110-54-3	25.94	25.7	99.0%	23.0	88.8%	28.1	108.5%	22.4	86.4%	26.0	100.1%
Methylcyclopentane	108-87-2	25.94	24.4	94.2%	22.7	87.5%	20.8	80.0%	21.4	82.4%	25.3	97.4%
2,4-Dimethylpentane	108-08-7	30.83	30.8	99.9%	28.5	92.4%	34.4	111.7%	28.2	91.6%	32.6	105.7%
Benzene	71-43-2	25.70	24.7	96.2%	22.2	86.3%	25.6	99.7%	22.4	87.1%	26.3	102.2%
Cyclohexane	110-82-7	25.94	27.6	106.4%	23.3	89.8%	26.6	102.5%	23.9	92.0%	27.9	107.5%
2-Methylhexane	591-76-4	29.98	28.2	94.0%	25.4	84.7%	24.4	81.5%	22.5	75.1%	27.8	92.9%
2,3-Dimethylpentane	565-59-3	29.98	33.3	111.1%	28.1	93.8%	34.9	116.3%	28.8	95.9%	32.9	109.8%
3-Methylhexane	589-34-4	30.26	31.7	104.7%	27.2	89.8%	31.0	102.6%	26.4	87.2%	30.9	102.2%
2,2,4-Trimethylpentane	540-84-1	34.59	33.5	96.9%	30.5	88.1%	33.9	97.9%	30.0	86.7%	34.6	100.2%
n-Heptane	142-82-5	30.26	30.3	100.1%	26.8	88.4%	29.5	97.6%	25.6	84.6%	30.1	99.5%
Methylcyclohexane	108-87-2	29.98	30.4	101.5%	26.7	88.9%	28.9	96.3%	26.1	87.1%	30.0	100.2%
2,3,4-Trimethylpentane	565-75-3	34.26	34.6	100.9%	30.4	88.8%	33.9	98.9%	29.2	85.2%	35.3	102.9%
Toluene	108-88-3	29.98	29.0	96.9%	25.0	83.3%	29.7	99.1%	26.0	86.6%	33.9	113.0%
2-Methylheptane	592-27-8	34.26	33.7	98.4%	29.3	85.7%	33.2	96.8%	28.7	83.6%	34.3	100.0%
3-Methylheptane	589-81-1	34.91	34.2	98.1%	29.8	85.3%	33.7	96.5%	29.2	83.6%	34.2	98.0%
n-Octane	111-65-9	34.59	34.7	100.3%	29.1	84.1%	34.2	98.9%	29.7	85.8%	34.2	98.9%
Ethylbenzene	100-41-4	34.26	31.4	91.6%	27.7	80.9%	29.5	86.0%	25.6	74.9%	30.8	89.9%
M&P-Xylene	108-38-3	67.88	62.0	91.4%	53.5	78.8%	59.6	87.8%	51.2	75.4%	60.2	88.7%
Styrene	100-42-5	32.32	26.4	81.6%	23.3	72.1%	27.0	83.6%	21.7	**67.2%**	26.0	80.4%
O-Xylene	95-47-6	33.62	33.0	98.1%	28.4	84.6%	31.3	93.0%	28.2	83.9%	31.5	93.8%
N-Nonane	111-84-2	37.82	37.9	100.1%	32.2	85.2%	37.1	98.2%	31.7	83.8%	37.3	98.6%
Isopropylbenzene	98-82-8	37.45	34.4	92.0%	28.0	74.7%	32.4	86.4%	30.2	80.5%	33.6	89.7%
n-Propylbenzene	103-65-1	36.36	32.8	90.2%	28.0	76.9%	31.7	87.2%	29.1	80.0%	32.5	89.3%
1,3,5-Trimethylbenzene	108-67-8	38.18	33.2	87.0%	29.4	77.0%	32.6	85.4%	31.7	83.1%	32.5	85.0%
1,2,4-Trimethylbenzene	95-63-6	38.18	33.1	86.6%	29.5	77.2%	34.8	91.2%	32.7	85.6%	32.8	86.0%
n-Decane	124-18-5	42.83	37.1	86.6%	29.7	**69.3%**	36.8	85.9%	32.0	74.8%	37.3	87.1%
1,2,3-Trimethylbenzene	526-73-8	38.55	29.2	75.7%	26.4	**68.5%**	29.0	75.4%	27.4	71.2%	27.3	70.9%
n-Undecane	1120-21-4	46.22	32.0	**69.3%**	29.0	**62.7%**	35.3	76.4%	32.3	**69.9%**	31.8	**68.7%**

			Kennedale		Mansfield		Rhome		Rushing		UTA	
Compound Name	CAS Number	Audit Conc (ppbc)	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery	Post Processed ppbc	Percent Recovery
Ethane	74-84-0	51.80	50.7	97.9%	38.7	74.8%	47.7	92.0%	46.8	90.3%	48.3	93.2%
Ethylene	74-85-1	17.37	11.5	**66.3%**	10.0	**57.7%**	15.5	89.0%	11.7	**67.3%**	14.7	84.9%
Propane	74-98-6	12.36	12.5	101.5%	10.0	81.2%	10.9	88.2%	11.2	90.9%	11.4	92.2%
Propylene	115-07-1	13.09	10.7	81.5%	9.5	72.4%	9.8	74.6%	9.6	73.2%	10.9	83.3%
Iso-Butane	75-28-5	16.97	17.9	105.7%	16.8	98.8%	16.2	95.7%	18.3	108.1%	16.7	98.4%
N-Butane	106-97-8	17.13	18.5	108.1%	17.3	101.0%	16.6	96.9%	19.1	111.8%	17.2	100.2%
Acetylene	74-86-2	8.73	8.2	94.1%	6.3	71.7%	7.5	85.4%	6.1	**69.5%**	7.5	86.2%
Trans-2-Butene	624-64-6	16.65	17.2	103.2%	16.6	99.6%	16.9	101.4%	18.4	110.7%	16.5	99.3%
1-Butene	106-98-9	16.65	18.2	109.1%	16.2	97.5%	16.4	98.5%	18.2	109.5%	16.6	99.8%
Cis-2-Butene	590-18-1	17.62	18.2	103.1%	17.0	96.5%	17.3	98.2%	18.8	106.8%	17.2	97.4%
Cyclopentane	287-92-3	21.21	22.3	105.1%	20.6	97.1%	20.7	97.7%	23.2	109.1%	20.9	98.7%
Iso-Pentane	78-78-4	21.62	23.0	106.3%	21.1	97.7%	21.8	100.9%	23.6	109.4%	21.6	99.9%
N-Pentane	109-66-0	21.62	22.9	106.0%	21.1	97.5%	21.7	100.4%	23.4	108.1%	21.5	99.5%
1,3-Butadiene	106-99-0	16.65	17.2	103.5%	16.0	96.2%	16.2	97.2%	17.3	103.7%	16.6	99.7%
Trans-2-Pentene	646-04-8	21.82	21.1	96.8%	20.6	94.5%	20.9	95.9%	21.6	99.0%	21.2	97.2%
1-Pentene	109-67-1	21.82	23.2	106.2%	20.3	92.9%	20.9	95.6%	21.0	96.1%	21.2	97.2%
Cis-2-Pentene	627-20-3	19.80	16.8	85.0%	18.3	92.3%	18.7	94.3%	14.9	75.2%	19.0	96.1%
2,2-Dimethylbutane	75-83-2	25.45	26.6	104.4%	24.4	96.0%	24.9	97.7%	26.2	102.9%	25.0	98.3%
2-Methylpentane	107-83-5	24.97	25.6	102.6%	24.2	97.0%	24.3	97.3%	25.8	103.1%	24.3	97.3%
Isoprene	78-79-5	21.01	17.0	81.1%	17.1	81.5%	18.4	87.7%	16.7	79.7%	18.2	86.5%
n-Hexane	110-54-3	26.18	24.9	95.2%	20.5	78.2%	26.2	99.9%	27.0	103.0%	25.7	98.0%
Methylcyclopentane	108-87-2	25.70	24.3	94.7%	20.3	79.0%	20.0	78.0%	24.4	95.0%	25.1	97.7%
2,4-Dimethylpentane	108-08-7	30.83	28.4	92.0%	24.6	79.9%	32.1	104.3%	29.0	94.2%	32.4	105.0%
Benzene	71-43-2	25.94	24.3	93.5%	20.3	78.3%	23.7	91.2%	24.3	93.8%	23.9	92.2%
Cyclohexane	110-82-7	26.18	25.8	98.7%	21.1	80.7%	25.2	96.1%	25.7	98.0%	26.5	101.1%
2-Methylhexane	591-76-4	30.55	27.8	91.0%	21.9	71.8%	24.3	79.4%	25.0	81.8%	27.6	90.2%
2,3-Dimethylpentane	565-59-3	29.70	29.7	99.9%	23.8	80.3%	32.3	108.6%	29.3	98.8%	31.3	105.2%
3-Methylhexane	589-34-4	30.55	29.1	95.3%	23.8	77.8%	29.3	96.0%	27.6	90.3%	30.2	98.9%
2,2,4-Trimethylpentane	540-84-1	35.23	32.7	92.9%	26.8	76.1%	32.1	91.2%	31.4	89.2%	34.0	96.5%
n-Heptane	142-82-5	30.55	29.3	95.9%	23.3	76.1%	28.3	92.5%	27.7	90.8%	30.2	98.9%
Methylcyclohexane	108-87-2	30.26	29.2	96.4%	23.8	78.5%	27.5	90.8%	28.2	93.1%	29.7	98.2%
2,3,4-Trimethylpentane	565-75-3	33.94	33.1	97.4%	27.0	79.6%	32.1	94.7%	31.1	91.6%	34.7	102.2%
Toluene	108-88-3	30.26	28.9	95.6%	22.3	73.6%	28.5	94.1%	26.7	88.4%	29.1	96.3%
2-Methylheptane	592-27-8	34.26	32.6	95.2%	25.6	74.6%	31.9	93.2%	30.0	87.5%	33.7	98.3%
3-Methylheptane	589-81-1	34.59	33.1	95.6%	26.0	75.1%	32.3	93.3%	29.8	86.2%	34.0	98.4%
n-Octane	111-65-9	34.26	33.7	98.5%	25.7	75.1%	32.2	93.9%	30.6	89.3%	34.6	100.9%
Ethylbenzene	100-41-4	34.26	30.6	89.4%	24.2	70.5%	29.1	84.8%	28.4	82.9%	31.9	93.1%
M&P-Xylene	108-38-3	67.88	60.0	88.4%	45.2	**66.6%**	57.2	84.3%	55.2	81.3%	62.6	92.3%
Styrene	100-42-5	32.00	26.4	82.5%	18.9	**59.1%**	26.4	82.4%	24.5	76.5%	27.1	84.7%
O-Xylene	95-47-6	33.62	31.3	93.2%	23.4	**69.6%**	30.4	90.5%	29.2	87.0%	33.0	98.0%
N-Nonane	111-84-2	37.09	36.2	97.6%	26.0	**70.0%**	36.2	97.5%	33.4	90.2%	39.2	105.8%
Isopropylbenzene	98-82-8	36.36	32.4	89.1%	25.0	**68.9%**	31.9	87.7%	31.3	86.0%	35.9	98.6%
n-Propylbenzene	103-65-1	34.91	32.0	91.6%	23.7	**68.0%**	31.5	90.1%	29.8	85.2%	34.7	99.4%
1,3,5-Trimethylbenzene	108-67-8	37.82	30.0	79.2%	22.8	**60.3%**	32.0	84.7%	29.1	77.0%	37.0	97.8%
1,2,4-Trimethylbenzene	95-63-6	38.55	31.8	82.5%	23.0	**59.7%**	34.4	89.3%	31.7	82.3%	35.4	91.9%
n-Decane	124-18-5	42.83	34.3	80.1%	23.8	**55.6%**	35.8	83.5%	32.6	76.2%	38.0	88.8%
1,2,3-Trimethylbenzene	526-73-8	39.64	27.5	**69.5%**	20.6	**51.9%**	28.5	72.0%	27.2	**68.6%**	31.9	80.4%
n-Undecane	1120-21-4	46.22	30.8	**66.7%**	23.8	**51.6%**	34.1	73.9%	31.2	**67.4%**	33.0	71.4%

[a] Compound order based on elution time.

Table ES-2. Results of Performance Standard for Off-Site Analytical Lab

Compound Name	CAS Number	Input Concentration	Lab Results	Percent Recovery
1,1,1-Trichloroethane	71-55-6	3.6	3.6	99.7%
1,1,2,2-Tetrachloroethane	79-34-5	3.5	2.8	81.1%
1,1,2-Trichloroethane	79-00-5	3.6	3.2	88.9%
1,1-Dichloroethane	75-34-3	3.5	3.3	92.9%
1,1-Dichloroethene	75-35-4	3.5	3.2	90.9%
1,2,4-Trimethylbenzene	95-63-6	3.3	2.2	66.7%
1,2-Dibromoethane	106-93-4	3.5	3.0	86.9%
1,2-Dichloroethane	107-06-2	3.6	3.4	93.9%
1,2-Dichloropropane	78-87-5	3.6	3.1	85.0%
1,3,5-Trimethylbenzene	108-67-8	3.4	2.7	77.9%
1,3-Butadiene	106-99-0	7.0	6.7	95.0%
1-Butene	106-98-9	3.5	2.9	82.6%
1-Hexene	592-41-6	3.2	ND[a]	ND[a]
1-Pentene	109-67-1	3.4	3.2	93.2%
2,2,4-Trimethylpentane	540-84-1	3.5	3.5	100.9%
4-Ethyltoluene (p-Ethyltoluene)	622-96-8	3.3	2.3	70.9%
Benzene	71-43-2	3.6	3.5	96.7%
Bromomethane	74-83-9	3.4	3.0	89.1%
c-1,3-Dichloropropene	10061-01-5	3.2	3.2	100.0%
Carbon tetrachloride	56-23-5	3.5	3.5	99.4%
Chlorobenzene	108-90-7	3.5	3.2	91.1%
Chloroform	67-66-3	3.5	3.5	98.9%
Chloromethane (Methyl Chloride)	74-87-3	3.6	3.4	94.2%
Cyclohexane	110-82-7	3.5	3.1	89.7%
Dichlorodifluoromethane (Freon-12)	75-71-8	3.5	3.2	90.9%
Ethane	74-84-0	21.2	19.8	93.4%
Ethene	74-85-1	7.0	7.9	112.3%
Ethylbenzene	100-41-4	3.5	3.0	85.7%
Methylene Chloride (Dichloromethane)	75-09-2	3.5	3.1	89.1%
m-Xylene & p-Xylene	106-42-3+108-38-3	6.9	6.3	91.2%
n-Butane	106-97-8	3.5	3.3	93.7%
n-Heptane	142-82-5	3.4	3.2	93.8%
n-Hexane	110-54-3	10.5	9.8	93.0%
n-Pentane	109-66-0	3.4	3.2	94.4%
o-Xylene	95-47-6	3.5	3.2	90.0%
Propane	74-98-6	3.4	3.7	109.4%
Propylene	115-07-1	6.9	6.2	89.3%
Styrene	100-42-5	3.4	2.7	80.0%
t-1,3-Dichloropropene	10061-02-6	3.3	3.2	96.7%
Tetrachloroethene	127-18-4	3.6	3.2	88.3%
Toluene	108-88-3	3.6	3.0	83.6%
Trichloroethene	79-01-6	3.4	3.7	108.2%
Trichlorofluoromethane (Freon-11)	75-69-4	3.6	3.5	98.1%
Vinyl Chloride	75-01-4	3.6	3.1	86.4%

[a]Compounds labeled ND were not detected by the laboratory.