Typical Indoor Air Concentrations of Volatile Organic Compounds in Non-Smoking Montana Residences Not Impacted by Vapor Intrusion

A Montana Indoor Air Quality Investigation

Prepared by the Montana Department of Environmental Quality

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1.0 INTRODUCTION

Vapor intrusion, the migration of volatile chemicals from a subsurface source to the indoor air of overlying or adjacent buildings, is a rapidly evolving science that has far-reaching implications to the investigation and remediation of sites impacted with volatile organic compounds (VOCs). A common confounding factor in the evaluation of data collected in vapor intrusion investigations is the separation of "background" (i.e. from typical activities and chemicals inside buildings) indoor air VOC concentrations from VOCs that may be present in indoor air due to subsurface vapor intrusion. This is especially difficult when background indoor air concentrations of VOCs exceed screening levels, such as the Environmental Protection Agency Regional Screening Levels (EPA RSLs) for contaminants of concern (COCs) during the course of vapor intrusion investigations. This scenario may result in additional sampling and data evaluation, and in difficulty explaining the investigation results to the building occupants, when ultimately the agency may determine that no vapor intrusion issue exists.

Numerous studies have documented the ubiquitous presence of some VOCs in indoor air due to human activities. Indoor sources of VOCs include consumer products (e.g., cleaners, solvents, strippers, polish, adhesives, water repellants, lubricants, air fresheners, aerosols, mothballs, scented candles, insect repellants, plastic products); combustion processes (e.g., smoking, cooking, home heating); fuels in attached garages; dry cleaned clothing or draperies; municipal tap water; or occupant activities (e.g., craft hobbies)[1]. In addition, sources of VOCs in outdoor air or attached garages may affect indoor air quality as the typical building experiences multiple exchanges of indoor air with attached garage or outdoor air each day.[2] The Montana Department of Environmental Quality (DEQ) does note that some sites investigated for vapor intrusion have demonstrated outdoor air concentrations of some VOCs greater than that observed in the indoor air.

In order to improve the understanding of typical concentrations of VOCs in the indoor air of residential homes in the state of Montana, the Department of Environmental Quality (DEQ) conducted indoor air sampling at 50 non-smoking residences in Montana that represent a cross section of "typical" residential building use (in the absence of smoking) in both urban and rural settings. Study participants were recruited based on the inclusion criteria presented in the Experimental Methods section. The goal of this study was to calculate tolerance limits and 25^{th}, 50^{th}, 75^{th}, 90^{th}, and 95^{th} percentiles for the expected concentrations of VOCs in residential households, as measured by laboratory methods TO-15, TO-15 Selective Ion Monitoring (SIM), and hydrocarbon fractions measured by Massachusetts Air-Phase Petroleum Hydrocarbons (Mass APH).

The benefits of this study may include:

- Allowing for better evaluation of data obtained from vapor intrusion investigations by comparing measured indoor air concentrations of VOCs to the expected indoor air concentrations reported from this study;

- Providing possible alternate generic screening levels (DEQ currently uses the most current EPA RSLs) if it is found that some compounds are ubiquitously present above these EPA RSLs in indoor air;

- Providing possible alternate generic screening levels for EPA RSLs that are analytically unachievable;

- Eliminating the need to conduct more expensive TO-15 SIM analysis for some or all contaminants if it is found that these contaminants are ubiquitously present in indoor air at concentrations above standard TO-15 detection limits;

- Allowing DEQ and other environmental professionals to better explain measured indoor air concentrations of VOCs to the public by using the data obtained from this study as representative of typical concentrations of VOCs found in indoor air in Montana residences;

- Providing typical indoor air concentrations of VOCs that could be used as possible cleanup criteria for buildings requiring mitigation of subsurface vapor intrusion.

This study is not the first of its kind. Similar studies conducted to measure concentrations of VOCs in the indoor air of residential buildings include:

- Batterman et al. (2007)[2] – This study sampled the indoor air and garage air of 15 single family homes in southeast Michigan;

- Heroux et al. (2010)[3] – This study sampled the indoor air of 106 homes in the winter and 111 homes in summer of 2007 in Regina, Saskatchewan, Canada;

- Weisel et al. (2008)[4] – This study sampled the indoor air of 100 homes located in suburban and rural areas of New Jersey which were not expected to be impacted by vapor intrusion;

- Environmental Protection Agency (2011)[1] – The EPA reviewed a total of 18 studies of VOCs in the indoor air of residences of North America and developed summary ranges of VOCs present in background indoor air of North American residences between 1990 and 2005 from this compilation;

- Massachusetts Department of Environmental Protection (Mass DEP) (2008)[5] –Mass DEP developed criteria for reviewing available studies for inclusion in an updated 50^{th}, 75^{th}, and 90^{th} percentile calculation of indoor air VOCs.

- New York State Department of Health (NYDOH) (2006)[6] – Appendix C of NYDOH's *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* is a summary of five studies conducted between 1988 and 2005 with VOC concentration percentiles presented in this appendix.

While this study was conducted as a Montana-specific study, its findings may have application to other locations with similar urban development, building construction and building occupant habits. This study is limited only in the size of the sample (n=50). A larger sample size may provide a better range of expected indoor air concentrations of VOCs. Additionally, buildings that do not meet the inclusion criteria for the study (i.e. occupied by smokers, recent building renovations, commercial buildings, etc.) may have background concentrations of VOCs above the values calculated in this study.

2.0 DATA QUALITY OBJECTIVES

Data Quality Objectives (DQOs) of this study were presented in Table 2.0 of the *Sampling, Analysis, and Quality Assurance Project Plan: Typical Indoor Air Concentrations of Volatile Organic Compounds in Non-Smoking Residences Not Impacted by Subsurface Vapor Intrusion*[7] Step 2, *Identifying the Decisions* of the DQOs is summarized as follows:

- Data from this study will be used to determine whether indoor air concentrations of VOCs in non-smoking residences not impacted by subsurface vapor intrusion typically exceed risk-based screening levels;
- The data will be used to determine whether alternate screening/cleanup levels for certain VOCs are appropriate because concentrations in background indoor air are higher;
- The data will be used to determine whether more costly analytical methods are necessary for site-specific vapor intrusion investigations;
- The data will be used to show members of the public who are concerned about vapor intrusion what concentrations of certain compounds are typically present in residences not impacted by vapor intrusion.

Section 5.1 provides further discussion regarding the data quality objectives.

3.0 EXPERIMENTAL METHODS

3.1 Participant Selection Criteria

The selection of residential buildings to include in this study was of critical importance as buildings with abnormally high levels of VOCs (i.e. cigarette smoking indoors or recent building renovations) have the potential to skew the data. This study sought to sample indoor air at a representative population of residential households according to the following criteria:

- The building must not be occupied by smokers currently, or in the past 12 months;
- The building must not have undergone any form of remodeling (including painting, wood treatment or finishing, new tile, new carpeting, etc.) within the past 12 months;
- The building must be a primary residence and occupied 12 months out of the year;
- The building must be in "sound condition" (no broken windows, missing doors, inadequate building heating, etc.);

- The building must not be used as a place of business;
- The building must not be located within ¼ mile of any known DEQ site, facility, or otherwise known VOC contamination existing in groundwater or subsurface soils.

Additional considerations in selecting the study participants were:

- A representation of buildings located in both urban and rural areas (as outdoor air VOC concentrations or building use patterns may differ between rural and urban areas);
- A representation of buildings located geographically across Montana;
- The sample population should contain a variety of building construction styles (slab on grade, subsurface basement, above ground crawlspace, etc.) and ages;
- The sample population should represent a variety of heating sources (indoor heating oil tank and furnace, natural gas fired stoves or furnaces, propane fired stove or furnace, wood stoves, etc.) as different heat sources may pose varying potential VOC impacts to indoor air;
- The sample population should include a significant population of buildings that have a garage attached to the living space. The presence of an attached garage has been identified as a major source of indoor air VOC contamination.[2] This study sought to include structures with attached garages due to the frequency of this type of building construction in Montana;
- Potential indoor air VOC sources were not removed from the buildings prior to the collection of indoor air samples as this study sought to quantify the impact to indoor air from these common household VOC sources.

This study employed a convenience sampling strategy; a non-probability based sampling that involves the selection of samples from a population readily available. It is believed that the population selected by convenience sampling is representative of the population as a whole.

3.2 Laboratory Methods and Constituents Analyzed

Columbia Analytical Services (CAS) of Simi Valley, California was the sole laboratory for the study. CAS provided all of the 100% individually certified clean (for the entire constituent list) six-liter Summa canisters for sample collection. Table 3.2.1 lists the individual VOCs analyzed and provides their respective generic screening levels and laboratory detection limits.

Table 3.2.1: Selected VOCs Analyzed, Generic Screening Levels (RSLs), and Laboratory Reporting Limits (RLs)

Analyte	Chemical Abstract Services Number	Key - carcinogen (c) or non-carcinogen (n)	EPA BASED RSL* (residential air) (µg/m^3)	TO-15 RL (µg/m^3)	TO-15 SIM RL (µg/m^3)
1,1,1-Trichloroethane (TCA)	71-55-6	n	520	0.54	0.054
1,1,2,2-Tetrachloroethane	79-34-5	c	0.042	0.69	0.14
1,1,2-Trichloroethane	79-00-5	n	0.015	0.54	0.11
1,1-Dichloroethane (1,1-DCA)	75-34-3	c	1.5	0.40	0.081
1,1-Dichloroethene (1,1-DCE)	75-35-4	n	21	0.40	0.040
1,2,4-Trimethylbenzene	95-63-6	n	0.73	0.49	
1,2-Dibromoethane	106-93-4	c	0.0041	0.77	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	76-14-2		No value	0.70	
1,2-Dichlorobenzene	95-50-1	n	21	0.60	
1,2-Dichloroethane	107-06-2	c	0.094	0.40	0.081
1,2-Dichloropropane	78-87-5	c	0.24	0.46	
1,3,5-Trimethylbenzene	108-67-8		No value	0.49	
1,3-Butadiene	106-99-0	c	0.081	0.22	
1,3-Dichlorobenzene	541-73-1		No Value	0.60	
1,4-Dichlorobenzene	106-46-7	c	0.22	0.60	
2-Butanone (MEK)	78-93-3	n	520	1.5	
2-Hexanone	591-78-6	n	3.1	2.0	
4-Ethyltoluene	622-96-8		No value	0.49	
4-Methyl-2-pentanone	108-10-1	n	310	0.41	
Acetone	67-64-1	n	3200	1.2	
Benzene	71-43-2	c	0.31	0.32	0.16
Bromochloromethane	74-97-5	n	4.2		
Bromodichloromethane	75-27-4	c	0.066	0.67	
Bromoform	75-25-2	c	2.2	1.0	
Bromomethane	74-83-9	n	0.52	0.39	
Carbon Disulfide	75-15-0	n	73	1.6	
Carbon Tetrachloride	56-23-5	c	0.41	0.63	
Chlorobenzene	108-90-7	n	5.2	0.46	
Chloroethane (ethyl chloride)	75-00-3	n	1000	1.3	
Chloroform	67-66-3	c	0.11	0.49	
Chloromethane	74-87-3	n	9.4	0.21	
Cyclohexane	110-82-7	n	630	0.34	
Dibromochloromethane	124-48-1	c	0.09	0.81	
Dichlorodifluoromethane (CFC 12)	75-71-8	n	10	0.49	
Dichloromethane (methylene chloride)	75-09-2	c	96	0.69	

Analyte	Chemical Abstract Services Number	Key - carcinogen (c) or non-carcinogen (n)	EPA BASED RSL* (residential air) (µg/m^3)	TO-15 RL (µg/m^3)	TO-15 SIM RL (µg/m^3)
Ethylbenzene	100-41-4	c	0.97	0.43	0.087
Methyl tert-Butyl Ether	1634-04-4	c	9.4	0.36	0.36
Styrene	100-42-5	n	100	0.42	
Tetrachloroethene (PCE)	127-18-4	c	9.4	0.68	0.14
Tetrahydrofuran (THF)	109-99-9		210	1.5	
Toluene	108-88-3	n	520	0.38	
Trichloroethene (TCE)	79-01-6	n	0.43	0.54	0.11
Trichlorofluoromethane (CFC 11)	75-69-4	n	73	0.56	
Vinyl Chloride	75-01-4	c	0.16	0.26	0.026
cis-1,2-Dichloroethene	156-59-2		No value	0.40	0.079
cis-1,3-Dichloropropene (2)	10061-01-5	c	0.61	0.45	
m,p-Xylenes (1)	179601-23-1	n	10	0.43	0.17
n-Heptane	142-82-5		No value	0.41	
n-Hexane	110-54-3	n	73	0.35	
o-Xylene	95-47-6	n	10	0.43	0.087
trans-1,2-Dichloroethene	156-60-5	n	6.3	0.40	0.40
trans-1,3-Dichloropropene (2)	10061-02-6	c	0.61	0.45	
2-Propanol	67-63-0	n	730	1.2	
Ethanol	64-17-5		No value	0.94	
Hexachlorobutadiene	87-68-3	c	0.11	0.81	
Naphthalene	91-20-3	c	0.072		0.16
Cumene (isopropylenzene)	98-82-8	n	42	0.49	
3-Chloropropene	107-05-1		No value	1.6	
2,2,4-trimethylpentane	540-84-1		No value	2.3	
1,4-Dioxane	123-91-1	c	0.32	0.36	
Propylbenzene	103-65-1		No value	0.49	
1,2,4-Trichlorobenzene	120-82-1	n	2.1	3.7	

Notes:

* = DEQ divides non-carcinogenic RSLs by 10 to ensure a total hazard index of 1 or less. Carcinogenic RSLs are not modified

1 – m,p xylenes are listed separately in the 2012 EPA RSL table

2 – DEQ adjusted EPA RSL is for 1,3-dichloropropene

µg/m^3 – micrograms per cubic meter

Shaded compounds have RSLs that are less than the lowest practicable reporting limit

Table 3.2.2 lists the hydrocarbon fractions analyzed and provides their respective generic screening level and laboratory detection limits:

Table 3.2.2: Hydrocarbon Fractions Analyzed by Massachusetts Air-Phase Petroleum Hydrocarbons (Mass APH), DEQ Screening Levels, and Laboratory Reporting Limits

Analyte	CAS Number	DEQ Screening Level (residential air) (µg/m^3)	Reporting Limit (µg/m^3)
C_5-C_8 Aliphatic Hydrocarbons	Not Available	62.6	27
C_9–C_{12} Aliphatic Hydrocarbons	Not Available	10.4	13
C_9-C_{10} Aromatic Hydrocarbons	Not Available	10.4	6.7

Notes:
SHADED compounds have RSLs that are less than the lowest practicable reporting limit
µg/m^3 – micrograms per cubic meter

3.3 Field Sampling Methodology

All samples were collected in laboratory supplied, individually certified clean six-liter Summa canisters with a dedicated vacuum gauge and flow regulator set to collect the sample over a 24-hour period. All Summa canisters were tested with a digital vacuum gauge upon receipt from the laboratory to verify that the canisters had adequate initial negative pressure (between -24" Hg and -29" Hg, adjusted for feet above sea level).

All samples were collected between March 5 and March 31, 2012. Samples were collected during a cold weather time period in order to collect samples during what has been identified as a potential worst case time period for indoor air quality.[8] Additionally, sampling during a cold weather time period ensured that the results from this study seasonally correlated with most results from vapor intrusion investigations in Montana.

One indoor air sample was collected per building. The placement of the Summa canister for collection of the indoor air sample adhered to the following selection criteria:

- Summa canisters were placed in a central location on what the building occupant or DEQ determined to be the main living floor of the building (central gathering or food preparation areas used most frequently by occupants of the building);
- Summa canisters were not placed in kitchens when possible so as to not preferentially sample VOCs generated by cooking activities;
- Summa canisters were placed so that the intake to the Summa canister was located between three and five feet above the floor to collect the indoor air sample from the typical breathing zone area;
- Summa canisters were not placed in closets or similar storage areas to avoid preferentially sampling common locations of VOC-containing household products;

- Summa canisters were not placed in a breezeway, doorway, or close to any other opening to the outdoors or other ventilation; and

- Summa canisters were not placed in a workshop, garage, or hobby room.

At the time of the sampling, participants were asked to complete DEQ's Occupied Building Questionnaire (Reference 8, Attachment A) which describes building construction, heat sources, occupant habits, and consumer product storage. Sampling teams assisted participants with the completion of the questionnaire when necessary and also completed indoor air sampling forms (http://deq.mt.gov/StateSuperfund/viguide.mcpx) documenting sampling equipment serial numbers, initial and final vacuums, weather conditions, building layout, building GPS coordinates, sample location within the building, and any other relevant field observations for each location.

The sample teams were instructed to avoid using perfumes, colognes, hair spray, fueling vehicles before the collection or deployment of samples, smoking at any time during the sampling event, or engaging in any other activity that may introduce VOCs to indoor air.

Following collection, all samples were shipped back to the laboratory in their original packages under chain of custody. No more than ten days elapsed between sample collection and shipment (sample hold time is 30 days). Samples remained under DEQ custody at all times prior to shipment to the laboratory.

4.0 RESULTS

Data from the 50 samples, plus five field duplicates, were validated using DEQ protocols.[9] In brief, all data, some with qualification, are usable for the purpose of this study. In addition, all the data are assumed to be representative for the purpose of the study given that each building sampled met the previously identified selection criteria. Therefore, no outliers are assumed to be present in the data.

Data from all 50 residential buildings for each of the 77 VOCs were input into EPA ProUCL software (version 4.1.01). The 25^{th}, 50^{th}, 75^{th}, 90^{th}, and 95^{th} percentiles were calculated using raw data for each VOC. This means that non-detect values were included at the reporting limit; no conversion or substitution of data occurred to determine percentiles. For cases where non-detect values constituted an entire percentile, the statistic is presented as less than the reporting limit at the specified percentile. For example, the 50^{th} percentile for C9-C10 aromatics is "<9.2 $\mu g/m^3$."

In addition to percentiles, upper tolerance limits (UTLs) on the median (i.e., 50^{th} percentile) with 95% confidence (95%UTL-50^{th}) were calculated for VOCs with detected values for at least 50 percent of each data set. In other words, if non-detect values constituted at least 50 percent of the data set for a specific VOC, then a 95%UTL-50^{th} statistic was not calculated. A UTL is a statistic of proportion for a data set; therefore, it is a useful metric for estimating an upper limit of a percentile of a population. In particular, the 95%UTL-50^{th} parametric is pertinent for a study of "typical" indoor air concentrations because the metric represents a statistically-based upper limit on the median of expected indoor air concentrations.

50 percent was utilized as the limit of allowable non-detect values in a data set for calculating 95%UTL-50th statistics because when calculating a statistically-based upper limit for a proportion, i.e., median, the data set should desirably contain quantified results within the respective proportion to validate the statistic. In other words, a 95%UTL-50th statistic for a data set that has 50 percent or more qualified values, i.e., non-detect values, has no quantified measurements to confirm the statistic.

In other words, DEQ calculated the average indoor air concentration of each VOC (the 50th percentile value). For those VOCs that had a non-detect value as the average (or 50th percentile) concentration, no additional statistics could be performed since the average concentration was an unquantified value (i.e <0.84 µg/m^3). For VOCs with a quantified value as the 50th percentile (i.e. benzene 50th percentile = 0.90 µg/m^3) DEQ calculated the upper tolerance limit (UTL) of this value. The UTL is an estimate of what the highest value that a calculated average could be in reality, if one were to sample the entire population. The UTL typically is calculated with a level of confidence. For this study a 95% level of confidence was used when calculating the UTL. This 95%-UTL value is an estimation for what the highest real value that the calculated averages could be, with a 95% certainty. For example, the 95%-UTL-50th for benzene (1.3 µg/m^3) is the estimate of the highest value that the average concentration of benzene found in the 50 houses sampled in this study (0.90 µg/m^3) could be if one were to sample a much larger population.

Table 3 contains percentiles for all 77 VOCs and 95%UTL-50th statistics for the 21 VOCs that had less than 50 percent non-detect values.

Table 4.0.1: Concentration Percentiles

Compounds	Frequency of Non-Detects	25th Percentile (µg/m^3)	50th Percentile (µg/m^3)	75th Percentile (µg/m^3)	90th Percentile (µg/m^3)	95th Percentile (µg/m^3)	95% UTL on 50th Percentile (µg/m^3)
1,1,1-Trichloroethane	96%	<0.77	<0.84	<0.93	<1.0	<1.7	NA
1,1,2-Trichloroethane	100%	<0.15	<0.17	<0.19	<0.20	<0.25	NA
1,1,2-Trichlorotrifluoroethane	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,1-Dichloroethane	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,1-Dichloroethene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,2,4-Trichlorobenzene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,2,4-Trimethylbenzene	52%	<0.86	<1.1	1.9	4.9	8.7	NA
1,2-Dibromo-3-chloropropane	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,2-Dibromoethane	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,2-Dichlorobenzene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,2-Dichloroethane	0%	0.11	0.17	0.48	0.82	1.2	0.23
1,2-Dichloropropane	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
1,3,5-Trimethylbenzene	82%	<0.78	<0.87	<0.97	2.0	2.9	NA
1,3-Butadiene	98%	<0.77	<0.84	<0.93	<0.99	<1.3	NA
1,3-Dichlorobenzene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA

Compounds	Frequency of Non-Detects	25th Percentile (µg/m^3)	50th Percentile (µg/m^3)	75th Percentile (µg/m^3)	90th Percentile (µg/m^3)	95th Percentile (µg/m^3)	95% UTL on 50th Percentile (µg/m^3)
1,4-Dichlorobenzene	96%	<0.77	<0.84	<0.93	<1.1	<2.6	NA
1,4-Dioxane	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
2-Butanone	86%	<7.7	<8.5	<9.6	13	18	NA
2-Hexanone	90%	<0.77	<0.84	<0.93	<0.98	1.5	NA
2-Propanol	0%	11	27	46	77	95	29
Allyl Chloride	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
4-Ethyltoluene	86%	<0.78	<0.87	<0.97	2.0	2.9	NA
4-Methyl-2-pentanone	74%	<0.78	<0.88	1.0	2.1	2.3	NA
Acetone	0%	31	46	65	83	103	51
Acetonitrile	94%	<0.77	<0.84	<0.93	<1.0	1.8	NA
Acrolein	84%	<3.1	<3.5	<3.9	4.8	6.8	NA
Acrylonitrile	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
alpha-Pinene	4%	1.7	3.8	5.5	13	25	4.7
Benzene	2%	0.52	0.90	2.5	8.4	12	1.3
Benzyl Chloride	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
Bromodichloromethane	94%	<0.77	<0.84	<0.93	<1.0	1.7	NA
Bromoform	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
Bromomethane	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
C5 - C8 Aliphatics	10%	46	81	160	224	414	94
C9 - C12 Aliphatics	16%	22	33	73	100	196	44
C9 - C10 Aromatics	60%	<8.4	<9.2	12	24	38	NA
Carbon Disulfide	100%	<7.7	<8.3	<9.3	<9.8	<13	NA
Carbon Tetrachloride	92%	<0.77	<0.85	<0.93	<1.0	1.5	NA
Chlorobenzene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
Chloroethane	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
Chloroform	64%	<0.82	<0.93	1.7	2.7	3.6	NA
Chloromethane	94%	<0.77	<0.84	<0.93	<1.0	1.3	NA
cis-1,2-Dichloroethene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
cis-1,3-Dichloropropene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
Cyclohexane	76%	<1.6	<1.8	<2.2	3.8	5.1	NA
Dibromochloromethane	98%	<0.77	<0.84	<0.93	<1.0	<1.4	NA
Dichlorodifluoromethane (CFC 12)	2%	1.9	2.0	2.1	2.2	2.2	2.1
Methylene Chloride	62%	<0.78	<0.93	1.5	9.0	29	NA
d-Limonene	0%	11	16	28	46	95	22
Ethanol	0%	288	625	1,375	2,020	2,930	769
Ethyl Acetate	10%	3.8	6.3	15	25	31	8.6
Ethylbenzene	6%	0.41	0.78	2.1	4.0	6.0	1.1
Hexachlorobutadiene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
Cumene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
m,p-Xylenes	34%	<1.7	2.7	6.6	8.9	24	3.6
Methyl Methacrylate	96%	<1.5	<1.7	<1.9	<2.0	<2.5	NA
Methyl tert-Butyl Ether	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
Naphthalene	20%	0.21	0.36	0.51	0.82	1.3	0.39
n-Butyl Acetate	38%	<0.85	1.3	2.5	4.4	5.7	1.5
n-Heptane	38%	<0.87	1.1	3.2	5.0	6.0	1.6
n-Hexane	38%	<0.91	1.5	3.2	11	16	1.9
n-Nonane	62%	<0.80	<0.93	1.8	3.0	4.0	NA
n-Octane	60%	<0.82	<0.93	1.2	2.0	2.3	NA

Compounds	Frequency of Non-Detects	25th Percentile (µg/m^3)	50th Percentile (µg/m^3)	75th Percentile (µg/m^3)	90th Percentile (µg/m^3)	95th Percentile (µg/m^3)	95% UTL on 50th Percentile (µg/m^3)
n-Propylbenzene	88%	<0.77	<0.85	<0.93	1.5	1.8	NA
o-Xylene	58%	<0.82	<0.94	2.4	5.2	7.6	NA
Propene	4%	2.2	6.0	8.7	18	35	6.5
Styrene	66%	<0.82	<0.93	1.2	2.2	2.4	NA
Tetrachloroethene	16%	0.061	0.099	0.24	2.3	2.8	0.14
Tetrahydrofuran	70%	<0.80	<0.90	1.6	3.2	4.2	NA
Toluene	2%	5.0	8.3	25	49	60	13
trans-1,2-Dichloroethene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
trans-1,3-Dichloropropene	100%	<0.77	<0.83	<0.93	<0.98	<1.3	NA
Trichloroethene	56%	<0.042	<0.048	0.096	0.58	1.3	NA
Trichlorofluoromethane (CFC 11)	10%	1.1	1.2	1.8	2.7	3.6	1.3
Vinyl Acetate	98%	<7.7	<8.4	<9.3	<10	<15	NA
Vinyl Chloride	98%	<0.038	<0.042	<0.046	<0.049	<0.064	NA

5.0 DISCUSSION

5.1 Data Quality Objectives Discussion

The results of this study provide useful additional lines of evidence in evaluating the vapor intrusion pathway, particularly in terms of comparison of measured indoor air results from vapor intrusion investigations to the percentiles calculated from this study. The results of this study are discussed in terms of the study's data quality objectives (DQOs) as follows:

Data from this study will be used to determine whether indoor air concentrations of VOCs in non-smoking residences not impacted by subsurface vapor intrusion typically exceed risk-based screening levels.

Twenty-seven of 77 VOCs had non-detect values for all 50 samples (100% non-detect). For these 27 VOCs, it may be assumed that these should not normally be detected in residential indoor air. These VOCs include many compounds that are not typically contaminants of concern (COCs) in vapor intrusion investigations (i.e. bromoform, hexachlorobutadiene); however, some compounds that may be COCs for a vapor intrusion investigation (methyl tert-butyl ether (MTBE) or 1,2-dichlorobenzene) are also included in this group.

Twenty-nine of the 77 VOCs had non-detect values for greater than 50% of the samples collected, but were detected in a minimum of one sample. Together with the 27 VOCs that were not detected in any sample (discussed above), these 56 VOCs were not able to have 95%UTL-50th statistics calculated due to the fact that the 50th percentile for these compounds represents a non-detect result and not a quantified indoor air concentration.

Six of the 56 VOCs are compounds for which no screening level exists.

Twenty-nine of the 56 compounds have estimated 50th percentiles below a detection limit that are also below the respective screening level for each VOC; for these VOCs, typical indoor air concentrations in Montana residences are not expected to exceed screening levels. Of particular note in this set of 29 VOCs are C9-C10 aromatics, trichloroethene (TCE), and vinyl chloride, which are frequently compounds of potential concern for vapor intrusion investigations.

The remaining 21 VOCs from the set of 56 have estimated 50th percentiles below a detection limit that is above the respective screening levels for each VOC. This study provides the least utility for these 21 VOCs because typical indoor air concentrations in Montana residences cannot be quantified for these compounds and the qualified values of the 50th percentiles do not allow for a meaningful comparison to generic risk screening levels. The most useful finding for these 21 VOCs is that they should not typically be measured in indoor air unless they are related to subsurface contamination or they have an indoor or ambient source not usually present in the 50 residences sampled during this study.

Table 5.1.1 below summarizes the 56 VOCs that were not able to have 95%UTL-50th statistics calculated due to the fact that the 50th Percentile for these compounds represents a non-detect result and not a quantified indoor air concentration.

Table 5.1.1 VOCs with Non-Detect Value as 50th Percentile

Compounds	DEQ-ADJUSTED EPA RSL* (residential air) (µg/m^3)	50th Percentile (µg/m^3)
1,1,1-Trichloroethane	520	<0.84
1,1,2-Trichloroethane	0.15	<0.17
1,1,2-Trichlorotrifluoroethane	No value	<0.83
1,1-Dichloroethane	1.5	<0.83
1,1-Dichloroethene	21	<0.83
1,2,4-Trichlorobenzene	0.21	<0.83
1,2,4-Trimethylbenzene	0.73	<1.1
1,2-Dibromo-3-chloropropane	0.00016	<0.83
1,2-Dibromoethane	0.0041	<0.83
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	No value	<0.83
1,2-Dichlorobenzene	21	<0.83
1,2-Dichloropropane	0.24	<0.83
1,3,5-Trimethylbenzene	No value	<0.87
1,3-Butadiene	0.081	<0.84
1,3-Dichlorobenzene	No Value	<0.83
1,4-Dichlorobenzene	0.22	<0.84
1,4-Dioxane	0.32	<0.83
2-Butanone	520	<8.5
2-Hexanone	3.1	<0.84
Allyl Chloride	0.41	<0.83
4-Ethyltoluene	No value	<0.87
4-Methyl-2-pentanone	310	<0.88
Acetonitrile	6.3	<0.84
Acrolein	0.0021	<3.5
Acrylonitrile	0.036	<0.83
Benzyl Chloride	0.05	<0.83

Compounds	DEQ-ADJUSTED EPA RSL* (residential air) (µg/m^3)	50th Percentile (µg/m^3)
Bromodichloromethane	0.066	<0.84
Bromoform	2.2	<0.83
Bromomethane	0.52	<0.83
C9 - C10 Aromatics	10.4**	<9.2
Carbon Disulfide	73	<8.3
Carbon Tetrachloride	0.41	<0.85
Chlorobenzene	5.2	<0.83
Chloroethane	1000	<0.83
Chloroform	0.11	<0.93
Chloromethane	9.4	<0.84
cis-1,2-Dichloroethene	No value	<0.83
cis-1,3-Dichloropropene	0.61	<0.83
Cyclohexane	630	<1.8
Dibromochloromethane	0.09	<0.84
Methylene Chloride	96	<0.93
Hexachlorobutadiene	0.11	<0.83
Cumene	42	<0.83
Methyl Methacrylate	73	<1.7
Methyl tert-Butyl Ether	9.4	<0.83
n-Nonane	21	<0.93
n-Octane	No value	<0.93
n-Propylbenzene	No value	<0.85
o-Xylene	10	<0.94
Styrene	100	<0.93
Tetrahydrofuran	210	<0.90
trans-1,2-Dichloroethene	No value	<0.83
trans-1,3-Dichloropropene	0.61	<0.83
Trichloroethene	0.43	<0.048
Vinyl Acetate	21	<8.4
Vinyl Chloride	0.16	<0.042

Notes:

* = DEQ divides non-carcinogenic RSLs by 10 to ensure a total hazard index of 1 or less. Carcinogenic RSLs are not modified

**= The screening level for C9-C10 aromatic hydrocarbons is the DEQ residential air screening level.

µg/m^3 – micrograms per cubic meter

Shaded compounds have a 50th percentile non-detect value above their respective screening level.

The data will be used to determine whether alternate screening/cleanup levels for certain VOCs are appropriate because concentrations in background indoor air are higher

Twenty-one of the 77 VOCs measured had non-detect results constitute less than 50 percent of all results for each VOC, and therefore 95%UTL-50th statistics, as previously detailed, were calculated for these VOCs. The 95%UTL-50th statistics for these 21 VOCs may be used as a line of evidence for vapor intrusion investigations when considering typical indoor air concentrations in Montana residences. These 21 VOCs are summarized in Table 5.1.2:

Table 5.1.2 VOCs with Calculated 95% UTL-50th Percentile Statistics

Compounds	DEQ-ADJUSTED EPA RSL* (residential air) (µg/m^3)	Calculated 95% UTL-50th Percentile (µg/m^3)
1,2-Dichloroethane	0.094	0.23
2-Propanol	730	29
Acetone	3200	51
alpha-Pinene	No value	4.7
Benzene	0.31	1.3
C5 - C8 Aliphatics	62.6**	94
C9 - C12 Aliphatics	10.4**	44
Dichlorodifluoromethane (CFC 12)	10	2.1
d-Limonene	No value	22
Ethanol	No value	769
Ethyl Acetate	No value	8.6
Ethylbenzene	0.97	1.1
m,p-Xylenes	10***	3.6
Naphthalene	0.072	0.39
n-Butyl Acetate	No value	1.5
n-Heptane	No value	1.6
n-Hexane	73	1.9
Propene	310	6.5
Tetrachloroethene	9.4	0.14
Toluene	520	13
Trichlorofluoromethane (CFC 11)	73	1.3

Notes:

* = DEQ divides non-carcinogenic RSLs by 10 to ensure a total hazard index of 1 or less. Carcinogenic RSLs are not modified

**= The screening level for C5-C8 and C9-C12 aliphatics are the DEQ residential air screening levels.

***= m,p-Xylenes are listed separately in the 2012 EPA RSL table

µg/m^3 – micrograms per cubic meter

Shaded compounds have a calculated 95% UTL-50th percentile value above their respective screening level.

Six VOCs (alpha-pinene, d-limonene, ethanol, ethyl acetate, n-butyl acetate, and n-heptane) in the group of 21 are compounds for which no EPA RSLs exist. These compounds are not usually COCs for vapor intrusion investigations. Regardless, the 95%UTL-50th statistics provide a reference for typical levels of these compounds in residential indoor air.

Nine VOCs (2-propanol, acetone, CFC-11, CFC-12, m&p-xylenes, n-hexane, propene, tetrachloroethene [PCE], and toluene) of these 21 VOCs have 95%UTL-50th statistics that are less than their respective RSLs; therefore, these VOCs are assumed to have common indoor and ambient sources, but typical indoor air concentrations in Montana residences related to these indoor and ambient sources are less than generic risk screening levels. Of particular note in this group of compounds are PCE, toluene, and m&p-xylenes, which are frequent COCs in vapor intrusion investigations.

For the remaining six VOCs of this group of 21 VOCs, the 95%UTL-50th statistics are greater than their respective screening levels. The six VOCs are 1,2-dichloroethane (1,2-DCA), benzene, C5-C8 aliphatics, C9-C12 aliphatics, ethylbenzene, and naphthalene. All of these compounds are common COCs in vapor intrusion investigations. These VOCs may be expected to normally be

found above their generic screening levels in the indoor air of residential homes. These compounds are compared to their respective generic screening levels (RSLs) in Table 5.1.3 for clarity.

Table 5.1.3 VOCs with Calculated 95% UTL-50th Percentile Statistics Greater than Generic Screening Levels

Compounds	DEQ-ADJUSTED EPA RSL* (residential air) (µg/m^3)	Calculated 95% UTL-50th Percentile (µg/m^3)
1,2-Dichloroethane	0.094	0.23
Benzene	0.31	1.3
C5 - C8 Aliphatics	62.6**	94
C9 - C12 Aliphatics	10.4**	44
Ethylbenzene	0.97	1.1
Naphthalene	0.072	0.39

Notes:

* = DEQ divides non-carcinogenic RSLs by 10 to ensure a total hazard index of 1 or less. Carcinogenic RSLs are not modified

**= The screening level for C5-C8 and C9-C12 aliphatics are the DEQ residential air screening levels.

µg/m^3 – micrograms per cubic meter

The data will be used to determine whether more costly analytical methods are necessary for site-specific vapor intrusion investigations

If DEQ determines that as an outcome of this study, alternative screening levels may be appropriate for certain compounds (such as the six compounds discussed in the paragraph above and listed in table 5.1.3) then the use of the more expensive TO-15 SIM analysis could be eliminated for those compounds as long as standard TO-15 detection limits are below these alternative screening levels.

The data will be used to show members of the public who are concerned about vapor intrusion what concentrations of certain compounds are typically present in residences not impacted by vapor intrusion

By publishing the results of this study, DEQ provides the public with percentiles of measured indoor air concentrations of VOCs that may be expected in non-smoking, residential households that have not undergone recent remodeling. These percentiles may also be provided to members of the public who are involved in vapor intrusion investigations so that their measured indoor air results may be easily compared to results from residences known to not be impacted by subsurface vapor intrusion.

5.2 Additional Discussion

It is worth re-stating that evaluation of the vapor intrusion pathway requires multiple lines of evidence. The analytical results of this study demonstrate that typical indoor air concentrations in residences not impacted by subsurface vapor intrusion may vary by an order of magnitude, and measured concentrations sometimes exceed generic screening levels. As necessary, DEQ may consider the evaluation of each building as a unique situation, and allow for consideration of possibly higher typical indoor air concentrations as demonstrated by concentrations in the 75th,

90th and 95th percentiles of this study. Additionally, since the study design excluded residences that have undergone remodeling within 12 months, commercial structures, and residences occupied by smokers, these types of buildings may exhibit indoor air concentrations of VOCs equal to or greater than the upper percentiles of this study. However, variations in evaluating the vapor intrusion pathway should only occur after sufficient data have been collected for evaluation purposes and there are multiple lines of evidence indicating an indoor source.

Another line of evidence for which this study could be used is to determine whether certain building characteristics may significantly affect typical indoor air concentrations. A full analysis of this line of evidence has not been performed; however, DEQ did consider whether the presence of an attached garage affects the indoor air concentrations for the six VOCs (1,2-DCA, benzene, C5-C8 aliphatics, C9-C12 aliphatics, ethylbenzene, and naphthalene) with 95%UTL-50^{th} statistics greater than their respective screening levels. For each VOC, the full data set may be divided into data subsets for residences with attached garages (27 data points) and residences without attached garages (23 data points). The reasoning behind the data subdivision is that people generally store many products in garages (automobiles, power equipment, building supplies, household effects, etc) that are likely sources of the six VOCs identified above, and for residences with attached garages there is assumed air flow that occurs from the garage to the occupied living space that may impact indoor air quality.[2]

For each of the six VOCs, a hypothesis test was performed in ProUCL to determine whether a significant difference exists in the median concentration for the attached garage subset and no attached garage subset. A non-parametric Wilcoxon-Mann-Whitney test was utilized so that potential differences or uncertainty in the underlying distributions of the data subsets was not a concern. The results indicate that for 1,2-DCA, benzene, and ethylbenzene the 95%UTL-50^{th} statistic for the attached garage subset is significantly greater with 95% confidence than the no attached garage subset. For C5-C8 aliphatics, C9-C12 aliphatics, and naphthalene, there was no observed statistical difference at 95% confidence between the 95%UTL-50^{th} statistics of the attached garage and no attached garage subsets.

The 95%UTL-50^{th} statistics for 1,2-DCA, benzene, C5-C8 aliphatics, C9-C12 aliphatics, ethylbenzene, and naphthalene are identified above; however, in advanced situations involving multiple lines of evidence, DEQ may utilize the following 95%UTL-50^{th} statistics for 1,2-DCA, benzene, and ethylbenzene to accommodate the presence of an attached garage. Table 5.2.1 highlights the comparisons of percentiles and 95%UTL-50^{th} statistics between the full data set and attached garage and no attached garages data subsets for 1,2-DCA, benzene, and ethylbenzene. Lastly, it is noted that the 95%UTL-50th statistic for ethylbenzene for residences without an attached garage is less than the EPA RSL.

Table 5.2.1: Comparison of Data Subsets for Residences with Attached Garages and No Attached Garages

Compounds	Data Set	Frequency of Non-Detects	25th Percentile ($\mu g/m^3$)	50th Percentile ($\mu g/m^3$)	75th Percentile ($\mu g/m^3$)	90th Percentile ($\mu g/m^3$)	95th Percentile ($\mu g/m^3$)	95% UTL on 50th Percentile ($\mu g/m^3$)
1,2-DCA	Full	0%	0.11	0.17	0.48	0.82	1.2	0.23
	Attached Garage	0%	0.13	0.35	0.60	1.0	1.2	0.40
	No Attached Garage	0%	0.089	0.13	0.28	0.48	0.77	0.17
Benzene	Full	2%	0.52	0.90	2.5	8.4	12	1.3
	Attached Garage	0%	1.1	1.9	6.0	12	14	3.1
	No Attached Garage	4%	0.48	0.52	0.75	1.1	1.4	0.64
Ethylbenzene	Full	6%	0.41	0.78	2.1	4.0	6.0	1.1
	Attached Garage	0%	0.79	1.4	2.9	5.9	6.1	2.3
	No Attached Garage	13%	0.22	0.48	0.67	1.5	1.6	0.53

6.0 COMPARISON TO OTHER STUDIES

The Montana Vapor Intrusion Guide states that the range of indoor air concentrations for VOCs typically found in Montana is more narrow and falls at or below the low end of nationwide background ranges.[8] DEQ has previously supported this position by citing Montana's low population, rural conditions, small manufacturing base, and fewer contaminant sources of VOCs than locations predominantly included in other background studies. This indoor air study has provided data to empirically evaluate the issue.

Table 5 contains 50th percentiles from similar indoor air studies conducted in Massachusetts (2008), New York (2005), New Jersey (Weisel 2008), and an EPA (2011) compilation that combines indoor air data from 15 different studies (including the studies from Massachusetts, New York, and New Jersey) for which 50th percentiles were available from at least one other study.

Table 6.0.1: Comparison of Typical Montana Indoor Air Concentrations to Typical Indoor Air Concentrations from Other Studies

Compounds	Montana 50th Percentile (µg/m3)	MA DEP 50th Percentile[1] (µg/m3)	NYSDOH 50th Percentile[2] (µg/m3)	New Jersey 50th Percentile[3] (µg/m3)	EPA Background 50th Percentile[4] (µg/m3)
1,1,1-Trichloroethane	<0.84	0.5	0.33	<2.7	<RL - 5.9
1,1,2-Trichloroethane	<0.17	ND	<0.25	No Value	No Value
1,1,2-Trichlorotrifluoroethane	<0.83	No Value	0.54	No Value	<RL - 0.5
1,1-Dichloroethane	<0.83	ND	<0.25	No Value	<RL
1,1-Dichloroethene	<0.83	ND	<0.25	No Value	No Value
1,2,4-Trichlorobenzene	<0.83	ND	<0.25	No Value	No Value
1,2,4-Trimethylbenzene	<1.1	No Value	1.9	2.5	No Value
1,2-Dibromoethane	<0.83	No Value	<0.25	No Value	No Value
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	<0.83	No Value	<0.25	No Value	No Value
1,2-Dichlorobenzene	<0.83	ND	<0.25	No Value	No Value
1,2-Dichloroethane	0.17	ND	<0.25	No Value	<RL
1,2-Dichloropropane	<0.83	ND	<0.25	No Value	No Value
1,3,5-Trimethylbenzene	<0.87	No Value	0.64	<2.5	No Value
1,3-Butadiene	<0.84	No Value	No Value	<1.1	No Value
1,3-Dichlorobenzene	<0.83	ND	<0.25	No Value	No Value
1,4-Dichlorobenzene	<0.84	0.5	<0.25	3.0	No Value
1,4-Dioxane	<0.83	ND	No Value	No Value	No Value
2-Butanone	<8.5	3.4	3.4	3.5	No Value
4-Ethyltoluene	<0.87	No Value	No Value	<2.5	No Value
4-Methyl-2-pentanone	<0.88	No Value	No Value	<2.0	No Value
Acetone	46	26	21	35	No Value
alpha-Pinene	3.8	No Value	1.5	No Value	No Value
Benzene	0.90	2.3	2.1	1.8	<RL - 4.7
Bromodichloromethane	<0.84	ND	No Value	No Value	No Value
Bromoform	<0.83	ND	No Value	No Value	No Value
Bromomethane	<0.83	ND	<0.25	No Value	No Value
C5 - C8 Aliphatics	81	58	No Value	No Value	No Value
C9 - C12 Aliphatics	33	68	No Value	No Value	No Value
C9 - C10 Aromatics	<9.2	ND	No Value	No Value	No Value
Carbon Disulfide	<8.3	No Value	No Value	<1.6	No Value
Carbon Tetrachloride	<0.85	ND	<0.25	No Value	<RL - 0.68
Chlorobenzene	<0.83	ND	<0.25	No Value	No Value
Chloroethane	<0.83	No Value	<0.25	No Value	No Value
Chloroform	<0.93	1.9	<0.25	2.4	<RL - 2.4
Chloromethane	<0.84	No Value	0.50	1.4	No Value
cis-1,2-Dichloroethene	<0.83	ND	<0.25	No Value	<RL
cis-1,3-Dichloropropene	<0.83	ND	<0.25	No Value	No Value
Cyclohexane	<1.8	No Value	0.81	1.7	No Value
Dibromochloromethane	<0.84	ND	No Value	No Value	No Value
Dichlorodifluoromethane (CFC 12)	2.0	No Value	<0.25	3.3	No Value
Methylene Chloride	<0.93	1.4	1.4	<1.7	0.68 - 61

Compounds	Montana 50th Percentile (µg/m3)	MA DEP 50th Percentile[1] (µg/m3)	NYSDOH 50th Percentile[2] (µg/m3)	New Jersey 50th Percentile[3] (µg/m3)	EPA Background 50th Percentile[4] (µg/m3)
d-Limonene	16	No Value	2.8	No Value	No Value
Ethanol	625	No Value	160	No Value	No Value
Ethylbenzene	0.78	1.5	1.0	2.2	1 - 3.7
Hexachlorobutadiene	<0.83	ND	<0.25	No Value	No Value
Cumene	<0.83	No Value	<0.25	No Value	No Value
m,p-Xylenes	2.7	5.9	1.5	3.8	1.5 - 14
Methyl Methacrylate	<1.7	No Value	<0.25	No Value	No Value
Methyl tert-Butyl Ether	<0.83	3.5	0.79	3.45	0.025 - 3.5
Naphthalene	0.36	ND	No Value	No Value	No Value
n-Heptane	1.1	No Value	2.8	2.0	No Value
n-Hexane	1.5	No Value	1.6	2.8	No Value
n-Nonane	<0.93	No Value	1.3	No Value	No Value
n-Octane	<0.93	No Value	0.89	No Value	No Value
n-Propylbenzene	<0.85	No Value	<0.25	No Value	No Value
o-Xylene	<0.94	5.9	1.1	2.2	1.1 - 3.6
Styrene	<0.93	0.63	0.30	<2.1	No Value
Tetrachloroethene	0.099	1.4	0.34	<3.4	<RL - 2.2
Tetrahydrofuran	<0.90	No Value	<0.25	No Value	No Value
Toluene	8.3	11	9.6	13	4.8 - 24
trans-1,2-Dichloroethene	<0.83	ND	No Value	No Value	No Value
trans-1,3-Dichloropropene	<0.83	ND	<0.25	No Value	No Value
Trichloroethene	<0.048	0.29	<0.25	<2.7	<RL - 1.1
Trichlorofluoromethane (CFC 11)	1.2	No Value	2.9	2.8	No Value
Vinyl Chloride	<0.042	ND	<0.25	No Value	<RL

Notes:
ND = not detected (reporting limit unknown)
RL = reporting limit
µg/m^3 – micrograms per cubic meter

The following list highlights the comparisons of significant VOCs for vapor intrusion investigations:

- 1,2,4-Trimethylbenzene – The Montana median concentration is non-detect at 1.1 µg/m^3, while New York's and New Jersey's are 1.9 and 2.5 µg/m^3, respectively.
- Benzene – The Montana median concentration is 0.90 µg/m^3, while Massachusetts', New York's, and New Jersey's are 2.3, 2.1, and 1.8 µg/m^3, respectively. The range of 50th percentiles from the EPA compilation is less than the reporting limit (not identified) to 4.7 µg/m^3.
- Chloroform – The Montana median concentration is non-detect at 0.93 µg/m^3, while Massachusetts', New York's, and New Jersey's are 1.9, non-detect at 0.25, and 2.4 µg/m^3, respectively. The range of 50th percentiles from the EPA compilation is less than the reporting limit (not identified) to 2.4 µg/m^3.
- Ethylbenzene – The Montana median concentration is 0.78 µg/m^3, while Massachusetts', New York's, and New Jersey's are 1.5, 1.0, and 2.2 µg/m^3, respectively. The range of 50th percentiles from the EPA compilation is 1 to 3.7 µg/m^3.

- m,p-Xylenes – The Montana median concentration is 2.7 µg/m^3, while Massachusetts', New York's, and New Jersey's are 5.9, 1.5, and 3.8 µg/m^3, respectively. The range of 50th percentiles from the EPA compilation is 1.5 to 14 µg/m^3.
- n-Hexane – The Montana median concentration is 1.5 µg/m^3, while New York's and New Jersey's are 1.6 and 2.8 µg/m^3, respectively.
- o-Xylene – The Montana median concentration is non-detect at 0.94 µg/m^3, while Massachusetts', New York's, and New Jersey's are 5.9, 1.1, and 2.2 µg/m^3, respectively. The range of 50th percentiles from the EPA compilation is 1.1 to 3.6 µg/m^3.
- PCE – The Montana median concentration is 0.099 µg/m^3, while Massachusetts', New York's, and New Jersey's are 1.4, 0.34, and non-detect at 3.4 µg/m^3, respectively. The range of 50th percentiles from the EPA compilation is less than the reporting limit (not identified) to 2.2 µg/m^3.

In general, this comparison demonstrates that indoor air concentrations for VOCs typically found in Montana residences fall at or below the low end of nationwide background ranges; however, the results of this study do not allow a blanket statement that all typical indoor air quality in Montana residences is better than other more urbanized and industrial States. For instance, C5-C8 aliphatics, acetone, and ethanol are VOCs for which typical indoor air concentrations in Montana exceed levels from the other studies (though C5-C8 aliphatics and ethanol were only analyzed in one of the four studies referenced). Additionally, other background indoor air studies may not have utilized the same building selection criteria, and as such may include background indoor air VOC concentrations that represent a building use not captured by this background study (e.g., cigarette smoke in indoor air).

7.0 SUMMARY

DEQ undertook a study of typical concentrations of VOCs in the indoor air of non-smoking residential homes in Montana not impacted by subsurface vapor intrusion. The study design included building selection criteria to control potential variation in analytical results. The following key points are outcomes of the study:

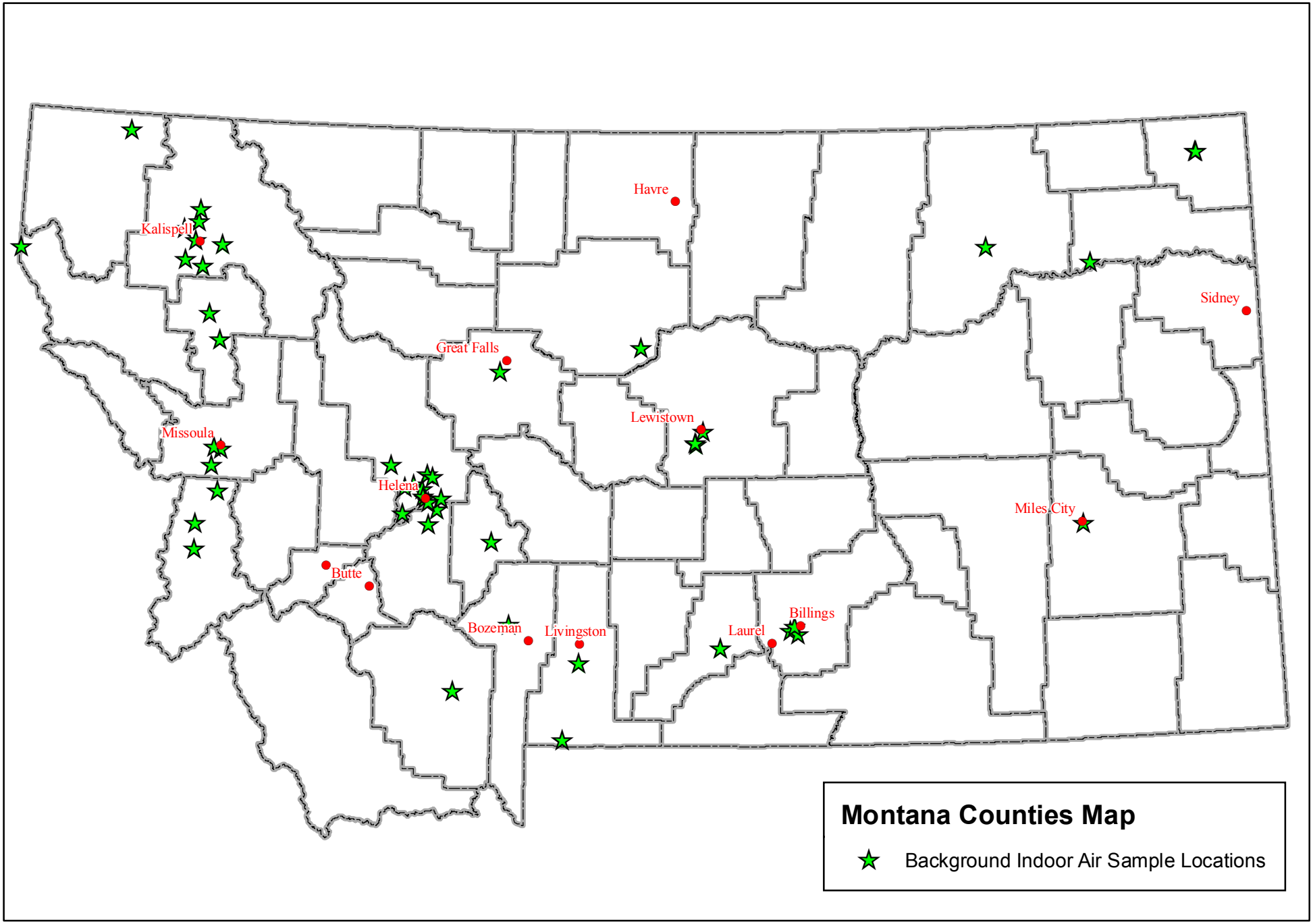
- Typical indoor air concentrations in Montana residences for 56 out of the 77 VOCs evaluated in this study are expected to be less than normally achievable laboratory reporting limits;
- The study identified 21 VOCs for which 95%UTL-50^{th} statistics provide a useful line of evidence for vapor intrusion investigations when considering typical indoor air concentrations in Montana residences;
- Six VOCs (1,2-DCA, benzene, C5-C8 aliphatics, C9-C12 aliphatics, ethylbenzene, and naphthalene) exhibited 95%UTL-50^{th} statistics of typical indoor air concentrations in Montana residences above their respective EPA RSLs;
- For advanced, building-specific evaluations of the vapor intrusion pathway, Table 5.2.1 provides useful typical background indoor air concentrations of 1,2-DCA, benzene, and ethylbenzene based on whether a residence has an attached garage or not;
- The upper end of the percentiles (75^{th}, 90^{th} or 95^{th} percentiles) reported in Table 4.0.1 still represent concentrations of VOCs from sources other than vapor intrusion;
- The use of TO-15 SIM, depending on individual laboratory reporting limits, may not be necessary for 1,2-DCA, benzene, ethylbenzene, and naphthalene;

- DEQ will utilize the results of this study to inform the public involved in vapor intrusion assessments about typical indoor air concentrations in Montana residences not affected by vapor intrusion;
- DEQ will allow others (states, industries, consultants) access to the database for further evaluation of typical indoor air concentrations in Montana (e.g., evaluation of potential differences in typical indoor air concentrations based on heating fuel source);
- While additional data gathering has the potential to expand the evaluation for some VOCs or refine the evaluation of data subsets, the 50 samples collected during this study have provided a significant additional line of evidence for assessing the vapor intrusion pathway. No additional sampling is required to utilize the findings of this study.

8.0 REFERENCES

1. *Background Indoor Air Concentrations of Volatile Organic Compounds in North American Residences (1990-2005): A Compilation of Statistics for Assessing Vapor Intrusion*; U.S. Environmental Protection Agency; U.S. Government Printing Office: Washington, DC, 2010; EPA/530/R-10/001.
2. Batterman, S.; Jia, C.; Hatzivasilis, G. *Environ Res.* **2007**, *104*, 224-240.
3. Heroux, M.E.; Clark, N.; Ryswyk, K.V.; Ranjeeta, M.; Gilber, N.L.; Harrison, I.; Rispler, K.; Wang, D.; Anastassopoulos, A.; Guay, M.; MacNeill, M. Wheeler, A. *Int. J. Environ. Res*. Public Health. **2010**, *7*, 3080-3099.
4. Weisel, C.P.; Alimokhtari, S.; Sanders, P.F. Environ. Sci. Technol. **2008**. *43*, 290-307.
5. *Residential Typical Indoor Air Concentrations*; Massachusetts Department of Environmental Protection. **2008**. See http://www.mass.gov/dep/cleanup/laws/policies.htm (accessed July 2012).
6. *Guidance for Evaluation Soil Vapor Intrusion in the State of New York: Appendix C Volatile Organic Chemicals in Air – Summary of Background* Databases. **2006**. See http://www.health.ny.gov/environmental/investigations/soil_gas/svi_guidance (accessed July 2012).
7. *Sampling, Analysis, and Quality Assurance Project Plan: Typical Indoor Air Concentrations of Volatile Organic Compounds in Non-Smoking Residences Not Impacted by Subsurface Vapor Intrusion*; Montana Department of Environmental Quality. **2011**.
8. *Montana Vapor Intrusion Guide*; Montana Department of Environmental Quality. **2011**. See http://deq.mt.gov/StateSuperfund/viguide.mcpx (accessed July 2012).
9. *Data Validation Guidelines for Evaluating Analytical Data*; Montana Department of Environmental Quality. **2010**. See http://deq.mt.gov/StateSuperfund/default.mcpx (accessed July 2012).

Figure



Montana Indoor Air Background Sample Locations in the State of Montana

Appendix A

LABORATORY REPORT

March 26, 2012

Christoher Cote
Montana DEQ
1100 N. Last Chance Gulch
Helena, MT 59601

RE: Background Indoor Air Study

Dear Christoher:

Enclosed are the results of the samples submitted to our laboratory on March 12, 2012. For your reference, these analyses have been assigned our service request number P1200947.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-11-2; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA015272011-1; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Kate Aguilera
Project Manager

Client: Montana DEQ CAS Project No: P1200947
Project: Background Indoor Air Study

CASE NARRATIVE

The samples were received intact under chain of custody on March 12, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009.

Volatile Organic Compound Analysis

The samples were also analyzed in scan and SIM mode for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

DETAIL SUMMARY REPORT

Client: Montana DEQ
Service Request: P1200947
Project ID: Background Indoor Air Study

Date Received: 3/12/2012
Time Received: 10:05

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC Cans	TO-15 - VOC SIM
01-IF-030512	P1200947-001	Air	3/5/2012	20:30	AC01505	-3.41	3.52	X	X	X
02-IF-030512	P1200947-002	Air	3/5/2012	19:00	AC00687	-4.86	3.52	X	X	X
03-IF-030512	P1200947-003	Air	3/5/2012	19:45	AS00178	-4.80	3.51	X	X	X
05-IF-030712	P1200947-004	Air	3/7/2012	12:45	AC01198	-3.39	3.53	X	X	X
06-IF-030712	P1200947-005	Air	3/7/2012	12:16	AS00137	-2.12	3.74	X	X	X
07-IF-030712	P1200947-006	Air	3/7/2012	15:23	AC01570	-2.36	3.72	X	X	X
08-IF-030712	P1200947-007	Air	3/7/2012	07:17	AS00184	-2.87	3.58	X	X	X
09-IF-030512	P1200947-008	Air	3/5/2012	16:23	AC00553	-4.65	3.56	X	X	X

Columbia Analytical Services

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

CAS Project No. P1200947

CAS Contact: Nicole Pannone

Company Name & Address (Reporting Information)	MT DEQ PO Box 200901 Helena MT 59620-0901
Project Name	Background Indoor Air Study
Project Number	
Project Manager	Chris Cote
P.O. # / Billing Information	reference as: Background Indoor Air Study Bill to Chris Cote of MDEQ
Phone	406-841-5078
Fax	406-84-5050
Email Address for Result Reporting	ccote2@mt.gov ; Martichbj@cdm.com
Sampler (Print & Sign)	

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15	Analysis Method: TO-15 SIM	Analysis Method: MA-APH	Comments e.g. Actual Preservative or specific instructions
01-IF-030512	1-331	3/5/12	8:30pm	AC01505	FCA00377	28.5	5.5		X	X	X	Analyze
02-IF-030512	2-471	3/5/12	19:00	AC00657	FCA00009	28.5	9		X	X	X	Project
03-IF-030512	3-467	3/5/12	19:45	AS00178	FCA00201	29	9.5		X	X	X	Specific list
05-IF-030712	4-329	3/7/12	12:45	AC01198	FCA00084	28	5.5		X	X	X	of compounds
06-IF-030712	5-203	3/7/12	12:16	AS00137	FCA00447	28.5	4.5		X	X	X	to project
07-IF030712	6-231	3/7/12	15:23	AC01570	FCA00429	28.0	3		X	X	X	specific reporting
08-IF-030712	7-276	3/7/12	7:17am	AS00184	FCA00378	28	5.5		X	X	X	limits
09-IF-030512	8-453	3/5/12	16:23	AC00553	FCA00048	26	6.5		X	X	X	
51-IF-030512		3/5/12	20:30	AC01472	FCA00423	28	7.5		X	X	X	

3/9/12

Report Tier Levels - please select

Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) X
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: CSV and Excel

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 3/9/12	Time: 2:00pm	Received by: (Signature)	Date: 3/9/12	Time: 1058		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Cooler / Blank Temperature ____°C	

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CCC AIR REV 3-11

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Sample Acceptance Check Form

Client: Montana Department of Environmental Quality Work order: P1200947

Project: Background Indoor Air Study

Sample(s) received on: 3/12/12 Date opened: 3/12/12 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1200947-001.01	6.0 L Ambient Can					
P1200947-002.01	6.0 L Ambient Can					
P1200947-003.01	6.0 L Silonite Can					
P1200947-004.01	6.0 L Ambient Can					
P1200947-005.01	6.0 L Silonite Can					
P1200947-006.01	6.0 L Ambient Can					
P1200947-007.01	6.0 L Silonite Can					
P1200947-008.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **01-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-001

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01505

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.41 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.61

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**200**	32	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**21**	16	
C_9 - C_{10} Aromatic Hydrocarbons	**12**	8.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **02-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-002

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00687

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**350**	37	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**57**	19	
C_9 - C_{10} Aromatic Hydrocarbons	**41**	9.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **03-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-003

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00178

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.80 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.84

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**130**	37	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**99**	18	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **05-IF-030712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-004

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01198

Date Collected: 3/7/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.39 Final Pressure (psig): 3.53

Canister Dilution Factor: 1.61

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**500**	32	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**100**	16	
C_9 - C_{10} Aromatic Hydrocarbons	**70**	8.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **06-IF-030712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-005

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00137

Date Collected: 3/7/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.12 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.47

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**200**	29	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**91**	15	
C_9 - C_{10} Aromatic Hydrocarbons	**23**	7.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **07-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-006

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01570

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.49

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**39**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**94**	15	
C_9 - C_{10} Aromatic Hydrocarbons	**8.6**	7.5	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **08-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-007

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00184

Initial Pressure (psig): -2.87 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.55

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**70**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**34**	16	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.8	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **09-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-008

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00553

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.82

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**180**	36	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**22**	18	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-MB

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **02-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-002DUP

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00687

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

Compound	Sample Result µg/m³	Duplicate Sample Result µg/m³	Average µg/m³	% RPD	RPD Limit	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	353	352	352.5	**0.3**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	57.1	54.2	55.65	**5**	30	
C_9 - C_{10} Aromatic Hydrocarbons	41.2	41.1	41.15	**0.2**	30	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **01-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01505

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21 - 3/22/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -3.41 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**7.4**	0.81	**4.3**	0.47	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.81	**0.43**	0.16	
74-87-3	Chloromethane	ND	0.81	ND	0.39	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.81	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.81	ND	0.36	
74-83-9	Bromomethane	ND	0.81	ND	0.21	
75-00-3	Chloroethane	ND	0.81	ND	0.31	
64-17-5	Ethanol	**2,200**	160	**1,200**	85	**D**
75-05-8	Acetonitrile	ND	0.81	ND	0.48	
107-02-8	Acrolein	**4.2**	3.2	**1.8**	1.4	
67-64-1	Acetone	**76**	8.1	**32**	3.4	
75-69-4	Trichlorofluoromethane	**1.2**	0.81	**0.21**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**40**	1.6	**16**	0.66	
107-13-1	Acrylonitrile	ND	0.81	ND	0.37	
75-35-4	1,1-Dichloroethene	ND	0.81	ND	0.20	
75-09-2	Methylene Chloride	**0.83**	0.81	**0.24**	0.23	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.81	ND	0.26	
76-13-1	Trichlorotrifluoroethane	ND	0.81	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.1	ND	2.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.81	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.81	ND	0.20	
1634-04-4	Methyl tert-Butyl Ether	ND	0.81	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **01-IF-030512** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-001

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21 - 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01505

Initial Pressure (psig): -3.41 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.1	ND	2.3	
78-93-3	2-Butanone (MEK)	ND	8.1	ND	2.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.81	ND	0.20	
141-78-6	Ethyl Acetate	**25**	1.6	**7.0**	0.45	
110-54-3	n-Hexane	**8.0**	0.81	**2.3**	0.23	
67-66-3	Chloroform	ND	0.81	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.81	ND	0.27	
71-55-6	1,1,1-Trichloroethane	ND	0.81	ND	0.15	
56-23-5	Carbon Tetrachloride	ND	0.81	ND	0.13	
110-82-7	Cyclohexane	ND	1.6	ND	0.47	
78-87-5	1,2-Dichloropropane	ND	0.81	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.81	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.81	ND	0.22	
80-62-6	Methyl Methacrylate	**1.9**	1.6	**0.47**	0.39	
142-82-5	n-Heptane	**3.1**	0.81	**0.76**	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	0.81	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	0.81	ND	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	0.81	ND	0.18	
108-88-3	Toluene	**31**	0.81	**8.2**	0.21	
591-78-6	2-Hexanone	**0.93**	0.81	**0.23**	0.20	
124-48-1	Dibromochloromethane	ND	0.81	ND	0.095	
106-93-4	1,2-Dibromoethane	ND	0.81	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **01-IF-030512** CAS Sample ID: P1200947-001
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21 - 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01505

Initial Pressure (psig): -3.41 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**4.3**	0.81	**0.90**	0.17	
111-65-9	n-Octane	**1.4**	0.81	**0.29**	0.17	
108-90-7	Chlorobenzene	ND	0.81	ND	0.17	
179601-23-1	m,p-Xylenes	**6.7**	1.6	**1.5**	0.37	
75-25-2	Bromoform	ND	0.81	ND	0.078	
100-42-5	Styrene	**2.2**	0.81	**0.51**	0.19	
95-47-6	o-Xylene	**2.0**	0.81	**0.47**	0.19	
111-84-2	n-Nonane	ND	0.81	ND	0.15	
98-82-8	Cumene	ND	0.81	ND	0.16	
80-56-8	alpha-Pinene	**11**	0.81	**1.9**	0.14	
103-65-1	n-Propylbenzene	ND	0.81	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.81	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.81	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.5**	0.81	**0.30**	0.16	
100-44-7	Benzyl Chloride	ND	0.81	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.81	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.81	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.81	ND	0.13	
5989-27-5	d-Limonene	**170**	16	**31**	2.9	**D**
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.81	ND	0.083	
120-82-1	1,2,4-Trichlorobenzene	ND	0.81	ND	0.11	
87-68-3	Hexachlorobutadiene	ND	0.81	ND	0.075	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **02-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00687

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.6**	0.93	**2.1**	0.54	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.93	**0.43**	0.19	
74-87-3	Chloromethane	ND	0.93	ND	0.45	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.93	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.93	ND	0.42	
74-83-9	Bromomethane	ND	0.93	ND	0.24	
75-00-3	Chloroethane	ND	0.93	ND	0.35	
64-17-5	Ethanol	**580**	9.3	**310**	4.9	
75-05-8	Acetonitrile	ND	0.93	ND	0.55	
107-02-8	Acrolein	ND	3.7	ND	1.6	
67-64-1	Acetone	**29**	9.3	**12**	3.9	
75-69-4	Trichlorofluoromethane	**1.1**	0.93	**0.19**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**18**	1.9	**7.2**	0.75	
107-13-1	Acrylonitrile	ND	0.93	ND	0.43	
75-35-4	1,1-Dichloroethene	ND	0.93	ND	0.23	
75-09-2	Methylene Chloride	ND	0.93	ND	0.27	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.93	ND	0.30	
76-13-1	Trichlorotrifluoroethane	ND	0.93	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.3	ND	3.0	
156-60-5	trans-1,2-Dichloroethene	ND	0.93	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.93	ND	0.23	
1634-04-4	Methyl tert-Butyl Ether	ND	0.93	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **02-IF-030512** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-002

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00687

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.3	ND	2.6	
78-93-3	2-Butanone (MEK)	ND	9.3	ND	3.1	
156-59-2	cis-1,2-Dichloroethene	ND	0.93	ND	0.23	
141-78-6	Ethyl Acetate	**37**	1.9	**10**	0.51	
110-54-3	n-Hexane	**14**	0.93	**3.8**	0.26	
67-66-3	Chloroform	ND	0.93	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.93	ND	0.31	
71-55-6	1,1,1-Trichloroethane	ND	0.93	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.93	ND	0.15	
110-82-7	Cyclohexane	**2.4**	1.9	**0.69**	0.54	
78-87-5	1,2-Dichloropropane	ND	0.93	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.93	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.93	ND	0.26	
80-62-6	Methyl Methacrylate	ND	1.9	ND	0.45	
142-82-5	n-Heptane	**5.7**	0.93	**1.4**	0.23	
10061-01-5	cis-1,3-Dichloropropene	ND	0.93	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.93	ND	0.23	
10061-02-6	trans-1,3-Dichloropropene	ND	0.93	ND	0.20	
108-88-3	Toluene	**34**	0.93	**9.1**	0.25	
591-78-6	2-Hexanone	ND	0.93	ND	0.23	
124-48-1	Dibromochloromethane	ND	0.93	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.93	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **02-IF-030512** CAS Sample ID: P1200947-002
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00687

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**5.0**	0.93	**1.0**	0.19	
111-65-9	n-Octane	**2.0**	0.93	**0.43**	0.20	
108-90-7	Chlorobenzene	ND	0.93	ND	0.20	
179601-23-1	m,p-Xylenes	**22**	1.9	**5.1**	0.43	
75-25-2	Bromoform	ND	0.93	ND	0.089	
100-42-5	Styrene	**2.3**	0.93	**0.54**	0.22	
95-47-6	o-Xylene	**7.7**	0.93	**1.8**	0.21	
111-84-2	n-Nonane	**2.1**	0.93	**0.40**	0.18	
98-82-8	Cumene	ND	0.93	ND	0.19	
80-56-8	alpha-Pinene	**11**	0.93	**2.0**	0.17	
103-65-1	n-Propylbenzene	**1.7**	0.93	**0.34**	0.19	
622-96-8	4-Ethyltoluene	**2.6**	0.93	**0.52**	0.19	
108-67-8	1,3,5-Trimethylbenzene	**3.0**	0.93	**0.61**	0.19	
95-63-6	1,2,4-Trimethylbenzene	**8.8**	0.93	**1.8**	0.19	
100-44-7	Benzyl Chloride	ND	0.93	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.93	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.93	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.93	ND	0.15	
5989-27-5	d-Limonene	**24**	0.93	**4.3**	0.17	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.93	ND	0.096	
120-82-1	1,2,4-Trichlorobenzene	ND	0.93	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.93	ND	0.087	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **03-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00178

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.80 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.84

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**78**	0.92	**45**	0.53	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.92	**0.42**	0.19	
74-87-3	Chloromethane	ND	0.92	ND	0.45	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.92	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.92	ND	0.42	
74-83-9	Bromomethane	ND	0.92	ND	0.24	
75-00-3	Chloroethane	ND	0.92	ND	0.35	
64-17-5	Ethanol	**460**	9.2	**240**	4.9	
75-05-8	Acetonitrile	ND	0.92	ND	0.55	
107-02-8	Acrolein	ND	3.7	ND	1.6	
67-64-1	Acetone	**72**	9.2	**30**	3.9	
75-69-4	Trichlorofluoromethane	**1.1**	0.92	**0.20**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**27**	1.8	**11**	0.75	
107-13-1	Acrylonitrile	ND	0.92	ND	0.42	
75-35-4	1,1-Dichloroethene	ND	0.92	ND	0.23	
75-09-2	Methylene Chloride	ND	0.92	ND	0.26	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.92	ND	0.29	
76-13-1	Trichlorotrifluoroethane	ND	0.92	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.2	ND	3.0	
156-60-5	trans-1,2-Dichloroethene	ND	0.92	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.92	ND	0.23	
1634-04-4	Methyl tert-Butyl Ether	ND	0.92	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **03-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00178

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.80 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.84

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.2	ND	2.6	
78-93-3	2-Butanone (MEK)	ND	9.2	ND	3.1	
156-59-2	cis-1,2-Dichloroethene	ND	0.92	ND	0.23	
141-78-6	Ethyl Acetate	**25**	1.8	**7.0**	0.51	
110-54-3	n-Hexane	ND	0.92	ND	0.26	
67-66-3	Chloroform	ND	0.92	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.92	ND	0.31	
71-55-6	1,1,1-Trichloroethane	ND	0.92	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.92	ND	0.15	
110-82-7	Cyclohexane	ND	1.8	ND	0.53	
78-87-5	1,2-Dichloropropane	ND	0.92	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.92	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.92	ND	0.26	
80-62-6	Methyl Methacrylate	ND	1.8	ND	0.45	
142-82-5	n-Heptane	**20**	0.92	**4.8**	0.22	
10061-01-5	cis-1,3-Dichloropropene	ND	0.92	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.92	ND	0.22	
10061-02-6	trans-1,3-Dichloropropene	ND	0.92	ND	0.20	
108-88-3	Toluene	**14**	0.92	**3.6**	0.24	
591-78-6	2-Hexanone	ND	0.92	ND	0.22	
124-48-1	Dibromochloromethane	ND	0.92	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.92	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **03-IF-030512** CAS Sample ID: P1200947-003
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00178

Initial Pressure (psig): -4.80 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.84

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**7.3**	0.92	**1.5**	0.19	
111-65-9	n-Octane	ND	0.92	ND	0.20	
108-90-7	Chlorobenzene	ND	0.92	ND	0.20	
179601-23-1	m,p-Xylenes	**1.9**	1.8	**0.44**	0.42	
75-25-2	Bromoform	ND	0.92	ND	0.089	
100-42-5	Styrene	**0.98**	0.92	**0.23**	0.22	
95-47-6	o-Xylene	ND	0.92	ND	0.21	
111-84-2	n-Nonane	**3.6**	0.92	**0.70**	0.18	**M1**
98-82-8	Cumene	ND	0.92	ND	0.19	
80-56-8	alpha-Pinene	**11**	0.92	**1.9**	0.17	
103-65-1	n-Propylbenzene	ND	0.92	ND	0.19	
622-96-8	4-Ethyltoluene	ND	0.92	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.92	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	0.92	ND	0.19	
100-44-7	Benzyl Chloride	ND	0.92	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.92	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.92	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.92	ND	0.15	
5989-27-5	d-Limonene	**42**	0.92	**7.5**	0.17	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.92	ND	0.095	
120-82-1	1,2,4-Trichlorobenzene	ND	0.92	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.92	ND	0.086	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
M1 = Matrix interference due to coelution with a non-target compound; results may be biased high.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **05-IF-030712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01198

Date Collected: 3/7/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.39 Final Pressure (psig): 3.53

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**8.7**	0.81	**5.1**	0.47	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.81	**0.43**	0.16	
74-87-3	Chloromethane	ND	0.81	ND	0.39	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.81	ND	0.12	
106-99-0	1,3-Butadiene	**0.99**	0.81	**0.45**	0.36	
74-83-9	Bromomethane	ND	0.81	ND	0.21	
75-00-3	Chloroethane	ND	0.81	ND	0.31	
64-17-5	Ethanol	**730**	8.1	**390**	4.3	
75-05-8	Acetonitrile	ND	0.81	ND	0.48	
107-02-8	Acrolein	ND	3.2	ND	1.4	
67-64-1	Acetone	**75**	8.1	**32**	3.4	
75-69-4	Trichlorofluoromethane	**1.4**	0.81	**0.24**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**22**	1.6	**9.1**	0.66	
107-13-1	Acrylonitrile	ND	0.81	ND	0.37	
75-35-4	1,1-Dichloroethene	ND	0.81	ND	0.20	
75-09-2	Methylene Chloride	**2.5**	0.81	**0.73**	0.23	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.81	ND	0.26	
76-13-1	Trichlorotrifluoroethane	ND	0.81	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.1	ND	2.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.81	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.81	ND	0.20	
1634-04-4	Methyl tert-Butyl Ether	ND	0.81	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **05-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-004

Test Code: EPA TO-15 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01198

Initial Pressure (psig): -3.39 Final Pressure (psig): 3.53

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.1	ND	2.3	
78-93-3	2-Butanone (MEK)	ND	8.1	ND	2.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.81	ND	0.20	
141-78-6	Ethyl Acetate	**6.9**	1.6	**1.9**	0.45	
110-54-3	n-Hexane	**19**	0.81	**5.4**	0.23	
67-66-3	Chloroform	**5.2**	0.81	**1.1**	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.81	ND	0.27	
71-55-6	1,1,1-Trichloroethane	ND	0.81	ND	0.15	
56-23-5	Carbon Tetrachloride	**0.97**	0.81	**0.15**	0.13	
110-82-7	Cyclohexane	**6.8**	1.6	**2.0**	0.47	
78-87-5	1,2-Dichloropropane	ND	0.81	ND	0.17	
75-27-4	Bromodichloromethane	**0.98**	0.81	**0.15**	0.12	
123-91-1	1,4-Dioxane	ND	0.81	ND	0.22	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.39	
142-82-5	n-Heptane	**6.1**	0.81	**1.5**	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	0.81	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	0.81	ND	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	0.81	ND	0.18	
108-88-3	Toluene	**89**	0.81	**24**	0.21	
591-78-6	2-Hexanone	ND	0.81	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.81	ND	0.095	
106-93-4	1,2-Dibromoethane	ND	0.81	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **05-IF-030712** CAS Sample ID: P1200947-004
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01198

Initial Pressure (psig): -3.39 Final Pressure (psig): 3.53

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.81	ND	0.17	
111-65-9	n-Octane	**2.3**	0.81	**0.49**	0.17	
108-90-7	Chlorobenzene	ND	0.81	ND	0.17	
179601-23-1	m,p-Xylenes	**50**	1.6	**12**	0.37	
75-25-2	Bromoform	ND	0.81	ND	0.078	
100-42-5	Styrene	**2.4**	0.81	**0.56**	0.19	
95-47-6	o-Xylene	**16**	0.81	**3.6**	0.19	
111-84-2	n-Nonane	**2.1**	0.81	**0.40**	0.15	
98-82-8	Cumene	ND	0.81	ND	0.16	
80-56-8	alpha-Pinene	**1.9**	0.81	**0.35**	0.14	
103-65-1	n-Propylbenzene	**2.8**	0.81	**0.58**	0.16	
622-96-8	4-Ethyltoluene	**5.4**	0.81	**1.1**	0.16	
108-67-8	1,3,5-Trimethylbenzene	**5.5**	0.81	**1.1**	0.16	
95-63-6	1,2,4-Trimethylbenzene	**17**	0.81	**3.4**	0.16	
100-44-7	Benzyl Chloride	ND	0.81	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.81	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.81	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.81	ND	0.13	
5989-27-5	d-Limonene	**11**	0.81	**1.9**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.81	ND	0.083	
120-82-1	1,2,4-Trichlorobenzene	ND	0.81	ND	0.11	
87-68-3	Hexachlorobutadiene	ND	0.81	ND	0.075	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **06-IF-030712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00137

Date Collected: 3/7/12
Date Received: 3/12/12
Date Analyzed: 3/21 - 3/22/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -2.12 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**7.9**	0.74	**4.6**	0.43	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.74	**0.42**	0.15	
74-87-3	Chloromethane	ND	0.74	ND	0.36	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.74	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.74	ND	0.33	
74-83-9	Bromomethane	ND	0.74	ND	0.19	
75-00-3	Chloroethane	ND	0.74	ND	0.28	
64-17-5	Ethanol	**970**	150	**510**	78	**D**
75-05-8	Acetonitrile	ND	0.74	ND	0.44	
107-02-8	Acrolein	ND	2.9	ND	1.3	
67-64-1	Acetone	**87**	7.4	**37**	3.1	
75-69-4	Trichlorofluoromethane	**2.2**	0.74	**0.39**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**38**	1.5	**15**	0.60	
107-13-1	Acrylonitrile	ND	0.74	ND	0.34	
75-35-4	1,1-Dichloroethene	ND	0.74	ND	0.19	
75-09-2	Methylene Chloride	ND	0.74	ND	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.74	ND	0.23	
76-13-1	Trichlorotrifluoroethane	ND	0.74	ND	0.096	
75-15-0	Carbon Disulfide	ND	7.4	ND	2.4	
156-60-5	trans-1,2-Dichloroethene	ND	0.74	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.74	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.74	ND	0.20	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **06-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-005

Test Code: EPA TO-15 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21 - 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AS00137

Initial Pressure (psig): -2.12 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.4	ND	2.1	
78-93-3	2-Butanone (MEK)	ND	7.4	ND	2.5	
156-59-2	cis-1,2-Dichloroethene	ND	0.74	ND	0.19	
141-78-6	Ethyl Acetate	**40**	1.5	**11**	0.41	
110-54-3	n-Hexane	**5.4**	0.74	**1.5**	0.21	
67-66-3	Chloroform	**2.1**	0.74	**0.43**	0.15	
109-99-9	Tetrahydrofuran (THF)	ND	0.74	ND	0.25	
71-55-6	1,1,1-Trichloroethane	ND	0.74	ND	0.13	
56-23-5	Carbon Tetrachloride	ND	0.74	ND	0.12	
110-82-7	Cyclohexane	**2.3**	1.5	**0.68**	0.43	
78-87-5	1,2-Dichloropropane	ND	0.74	ND	0.16	
75-27-4	Bromodichloromethane	**0.76**	0.74	**0.11**	0.11	
123-91-1	1,4-Dioxane	ND	0.74	ND	0.20	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.36	
142-82-5	n-Heptane	**2.4**	0.74	**0.58**	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.74	ND	0.16	
108-10-1	4-Methyl-2-pentanone	ND	0.74	ND	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.74	ND	0.16	
108-88-3	Toluene	**20**	0.74	**5.2**	0.20	
591-78-6	2-Hexanone	ND	0.74	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.74	ND	0.086	
106-93-4	1,2-Dibromoethane	ND	0.74	ND	0.096	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **06-IF-030712** CAS Sample ID: P1200947-005
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21 - 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AS00137

Initial Pressure (psig): -2.12 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**14**	0.74	**2.9**	0.15	
111-65-9	n-Octane	**1.0**	0.74	**0.22**	0.16	
108-90-7	Chlorobenzene	ND	0.74	ND	0.16	
179601-23-1	m,p-Xylenes	**9.8**	1.5	**2.2**	0.34	
75-25-2	Bromoform	ND	0.74	ND	0.071	
100-42-5	Styrene	**0.93**	0.74	**0.22**	0.17	
95-47-6	o-Xylene	**3.3**	0.74	**0.76**	0.17	
111-84-2	n-Nonane	**0.79**	0.74	**0.15**	0.14	
98-82-8	Cumene	ND	0.74	ND	0.15	
80-56-8	alpha-Pinene	**14**	0.74	**2.5**	0.13	
103-65-1	n-Propylbenzene	ND	0.74	ND	0.15	
622-96-8	4-Ethyltoluene	**1.2**	0.74	**0.25**	0.15	
108-67-8	1,3,5-Trimethylbenzene	**1.4**	0.74	**0.28**	0.15	
95-63-6	1,2,4-Trimethylbenzene	**4.5**	0.74	**0.91**	0.15	
100-44-7	Benzyl Chloride	ND	0.74	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.74	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.74	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.74	ND	0.12	
5989-27-5	d-Limonene	**26**	0.74	**4.7**	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.74	ND	0.076	
120-82-1	1,2,4-Trichlorobenzene	ND	0.74	ND	0.099	
87-68-3	Hexachlorobutadiene	ND	0.74	ND	0.069	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **07-IF-030712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01570

Date Collected: 3/7/12
Date Received: 3/12/12
Date Analyzed: 3/21 - 3/22/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.49

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.75	ND	0.43	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.75	**0.43**	0.15	
74-87-3	Chloromethane	ND	0.75	ND	0.36	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.75	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.75	ND	0.34	
74-83-9	Bromomethane	ND	0.75	ND	0.19	
75-00-3	Chloroethane	ND	0.75	ND	0.28	
64-17-5	Ethanol	**1,000**	150	**530**	79	**D**
75-05-8	Acetonitrile	ND	0.75	ND	0.44	
107-02-8	Acrolein	ND	3.0	ND	1.3	
67-64-1	Acetone	**47**	7.5	**20**	3.1	
75-69-4	Trichlorofluoromethane	**1.3**	0.75	**0.22**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**5.2**	1.5	**2.1**	0.61	
107-13-1	Acrylonitrile	ND	0.75	ND	0.34	
75-35-4	1,1-Dichloroethene	ND	0.75	ND	0.19	
75-09-2	Methylene Chloride	**170**	15	**50**	4.3	**D**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.75	ND	0.24	
76-13-1	Trichlorotrifluoroethane	ND	0.75	ND	0.097	
75-15-0	Carbon Disulfide	ND	7.5	ND	2.4	
156-60-5	trans-1,2-Dichloroethene	ND	0.75	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.75	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.75	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **07-IF-030712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01570

Date Collected: 3/7/12
Date Received: 3/12/12
Date Analyzed: 3/21 - 3/22/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.49

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.5	ND	2.1	
78-93-3	2-Butanone (MEK)	ND	7.5	ND	2.5	
156-59-2	cis-1,2-Dichloroethene	ND	0.75	ND	0.19	
141-78-6	Ethyl Acetate	**12**	1.5	**3.4**	0.41	
110-54-3	n-Hexane	ND	0.75	ND	0.21	
67-66-3	Chloroform	**3.0**	0.75	**0.61**	0.15	
109-99-9	Tetrahydrofuran (THF)	**0.89**	0.75	**0.30**	0.25	
71-55-6	1,1,1-Trichloroethane	ND	0.75	ND	0.14	
56-23-5	Carbon Tetrachloride	ND	0.75	ND	0.12	
110-82-7	Cyclohexane	ND	1.5	ND	0.43	
78-87-5	1,2-Dichloropropane	ND	0.75	ND	0.16	
75-27-4	Bromodichloromethane	**2.2**	0.75	**0.32**	0.11	
123-91-1	1,4-Dioxane	ND	0.75	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.36	
142-82-5	n-Heptane	ND	0.75	ND	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.75	ND	0.16	
108-10-1	4-Methyl-2-pentanone	ND	0.75	ND	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.75	ND	0.16	
108-88-3	Toluene	**9.2**	0.75	**2.5**	0.20	
591-78-6	2-Hexanone	ND	0.75	ND	0.18	
124-48-1	Dibromochloromethane	**1.3**	0.75	**0.16**	0.087	
106-93-4	1,2-Dibromoethane	ND	0.75	ND	0.097	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **07-IF-030712** CAS Sample ID: P1200947-006
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21 - 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01570

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.49

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.5**	0.75	**0.31**	0.16	
111-65-9	n-Octane	ND	0.75	ND	0.16	
108-90-7	Chlorobenzene	ND	0.75	ND	0.16	
179601-23-1	m,p-Xylenes	**1.7**	1.5	**0.38**	0.34	
75-25-2	Bromoform	ND	0.75	ND	0.072	
100-42-5	Styrene	ND	0.75	ND	0.18	
95-47-6	o-Xylene	ND	0.75	ND	0.17	
111-84-2	n-Nonane	ND	0.75	ND	0.14	
98-82-8	Cumene	ND	0.75	ND	0.15	
80-56-8	alpha-Pinene	**2.5**	0.75	**0.44**	0.13	
103-65-1	n-Propylbenzene	ND	0.75	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.75	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.75	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	**1.4**	0.75	**0.28**	0.15	
100-44-7	Benzyl Chloride	ND	0.75	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.75	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.75	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.75	ND	0.12	
5989-27-5	d-Limonene	**12**	0.75	**2.1**	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.75	ND	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	0.75	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.75	ND	0.070	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **08-IF-030712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-007

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00184

Date Collected: 3/7/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.87 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**1.2**	0.78	**0.67**	0.45	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.78	**0.42**	0.16	
74-87-3	Chloromethane	ND	0.78	ND	0.38	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.78	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.78	ND	0.35	
74-83-9	Bromomethane	ND	0.78	ND	0.20	
75-00-3	Chloroethane	ND	0.78	ND	0.29	
64-17-5	Ethanol	**310**	7.8	**160**	4.1	
75-05-8	Acetonitrile	ND	0.78	ND	0.46	
107-02-8	Acrolein	ND	3.1	ND	1.4	
67-64-1	Acetone	**30**	7.8	**13**	3.3	
75-69-4	Trichlorofluoromethane	**3.6**	0.78	**0.65**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**5.6**	1.6	**2.3**	0.63	
107-13-1	Acrylonitrile	ND	0.78	ND	0.36	
75-35-4	1,1-Dichloroethene	ND	0.78	ND	0.20	
75-09-2	Methylene Chloride	ND	0.78	ND	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.78	ND	0.25	
76-13-1	Trichlorotrifluoroethane	ND	0.78	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.78	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.78	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.78	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **08-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-007

Test Code: EPA TO-15 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00184

Initial Pressure (psig): -2.87 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.8	ND	2.2	
78-93-3	2-Butanone (MEK)	ND	7.8	ND	2.6	
156-59-2	cis-1,2-Dichloroethene	ND	0.78	ND	0.20	
141-78-6	Ethyl Acetate	**12**	1.6	**3.4**	0.43	
110-54-3	n-Hexane	ND	0.78	ND	0.22	
67-66-3	Chloroform	ND	0.78	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.78	ND	0.26	
71-55-6	1,1,1-Trichloroethane	ND	0.78	ND	0.14	
56-23-5	Carbon Tetrachloride	ND	0.78	ND	0.12	
110-82-7	Cyclohexane	**2.7**	1.6	**0.79**	0.45	
78-87-5	1,2-Dichloropropane	ND	0.78	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.78	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.78	ND	0.22	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.38	
142-82-5	n-Heptane	ND	0.78	ND	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.78	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.78	ND	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.78	ND	0.17	
108-88-3	Toluene	**7.1**	0.78	**1.9**	0.21	
591-78-6	2-Hexanone	ND	0.78	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.78	ND	0.091	
106-93-4	1,2-Dibromoethane	ND	0.78	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **08-IF-030712** CAS Sample ID: P1200947-007
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00184

Initial Pressure (psig): -2.87 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.5**	0.78	**0.32**	0.16	
111-65-9	n-Octane	ND	0.78	ND	0.17	
108-90-7	Chlorobenzene	ND	0.78	ND	0.17	
179601-23-1	m,p-Xylenes	ND	1.6	ND	0.36	
75-25-2	Bromoform	ND	0.78	ND	0.075	
100-42-5	Styrene	**0.90**	0.78	**0.21**	0.18	
95-47-6	o-Xylene	ND	0.78	ND	0.18	
111-84-2	n-Nonane	ND	0.78	ND	0.15	
98-82-8	Cumene	ND	0.78	ND	0.16	
80-56-8	alpha-Pinene	**1.2**	0.78	**0.21**	0.14	
103-65-1	n-Propylbenzene	ND	0.78	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.78	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.78	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	ND	0.78	ND	0.16	
100-44-7	Benzyl Chloride	ND	0.78	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.78	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.78	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.78	ND	0.13	
5989-27-5	d-Limonene	**64**	0.78	**11**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.78	ND	0.080	
120-82-1	1,2,4-Trichlorobenzene	ND	0.78	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.78	ND	0.073	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **09-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-008

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00553

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.82

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**1.6**	0.91	**0.91**	0.53	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.7**	0.91	**0.55**	0.18	
74-87-3	Chloromethane	ND	0.91	ND	0.44	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.91	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.91	ND	0.41	
74-83-9	Bromomethane	ND	0.91	ND	0.23	
75-00-3	Chloroethane	ND	0.91	ND	0.34	
64-17-5	Ethanol	**120**	9.1	**62**	4.8	
75-05-8	Acetonitrile	ND	0.91	ND	0.54	
107-02-8	Acrolein	ND	3.6	ND	1.6	
67-64-1	Acetone	**30**	9.1	**13**	3.8	
75-69-4	Trichlorofluoromethane	**2.3**	0.91	**0.42**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**6.7**	1.8	**2.7**	0.74	
107-13-1	Acrylonitrile	ND	0.91	ND	0.42	
75-35-4	1,1-Dichloroethene	ND	0.91	ND	0.23	
75-09-2	Methylene Chloride	**1.2**	0.91	**0.34**	0.26	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.91	ND	0.29	
76-13-1	Trichlorotrifluoroethane	ND	0.91	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.1	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	ND	0.91	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.91	ND	0.22	
1634-04-4	Methyl tert-Butyl Ether	ND	0.91	ND	0.25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **09-IF-030512** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-008

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00553

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.82

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.1	ND	2.6	
78-93-3	2-Butanone (MEK)	ND	9.1	ND	3.1	
156-59-2	cis-1,2-Dichloroethene	ND	0.91	ND	0.23	
141-78-6	Ethyl Acetate	**34**	1.8	**9.4**	0.51	
110-54-3	n-Hexane	ND	0.91	ND	0.26	
67-66-3	Chloroform	ND	0.91	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.91	ND	0.31	
71-55-6	1,1,1-Trichloroethane	ND	0.91	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.91	ND	0.14	
110-82-7	Cyclohexane	**2.7**	1.8	**0.77**	0.53	
78-87-5	1,2-Dichloropropane	ND	0.91	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.91	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.91	ND	0.25	
80-62-6	Methyl Methacrylate	**1.9**	1.8	**0.47**	0.44	
142-82-5	n-Heptane	ND	0.91	ND	0.22	
10061-01-5	cis-1,3-Dichloropropene	ND	0.91	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.91	ND	0.22	
10061-02-6	trans-1,3-Dichloropropene	ND	0.91	ND	0.20	
108-88-3	Toluene	**14**	0.91	**3.8**	0.24	
591-78-6	2-Hexanone	ND	0.91	ND	0.22	
124-48-1	Dibromochloromethane	ND	0.91	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.91	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **09-IF-030512** CAS Sample ID: P1200947-008
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/12/12
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00553

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.82

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.2**	0.91	**0.25**	0.19	
111-65-9	n-Octane	ND	0.91	ND	0.19	
108-90-7	Chlorobenzene	ND	0.91	ND	0.20	
179601-23-1	m,p-Xylenes	ND	1.8	ND	0.42	
75-25-2	Bromoform	ND	0.91	ND	0.088	
100-42-5	Styrene	**1.3**	0.91	**0.31**	0.21	
95-47-6	o-Xylene	ND	0.91	ND	0.21	
111-84-2	n-Nonane	ND	0.91	ND	0.17	
98-82-8	Cumene	ND	0.91	ND	0.19	
80-56-8	alpha-Pinene	ND	0.91	ND	0.16	
103-65-1	n-Propylbenzene	ND	0.91	ND	0.19	
622-96-8	4-Ethyltoluene	ND	0.91	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.91	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	0.91	ND	0.19	
100-44-7	Benzyl Chloride	ND	0.91	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.91	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.91	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.91	ND	0.15	
5989-27-5	d-Limonene	**3.6**	0.91	**0.65**	0.16	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.91	ND	0.094	
120-82-1	1,2,4-Trichlorobenzene	ND	0.91	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.91	ND	0.085	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **Method Blank** CAS Sample ID: P120321-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1200947
Client Sample ID: **Method Blank** CAS Sample ID: P120322-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1200947

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 3/5 - 3/7/12
Analyst: Elsa Moctezuma Date(s) Received: 3/12/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 3/21 - 3/22/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120321-MB	**104**	**102**	**94**	70-130	
Method Blank	P120322-MB	**105**	**100**	**97**	70-130	
Lab Control Sample	P120321-LCS	**107**	**98**	**98**	70-130	
Lab Control Sample	P120322-LCS	**105**	**99**	**98**	70-130	
01-IF-030512	P1200947-001	**106**	**100**	**93**	70-130	
02-IF-030512	P1200947-002	**106**	**98**	**95**	70-130	
02-IF-030512	P1200947-002DUP	**106**	**98**	**96**	70-130	
03-IF-030512	P1200947-003	**105**	**98**	**93**	70-130	
05-IF-030712	P1200947-004	**104**	**99**	**96**	70-130	
06-IF-030712	P1200947-005	**106**	**99**	**97**	70-130	
07-IF-030712	P1200947-006	**102**	**100**	**96**	70-130	
08-IF-030712	P1200947-007	**104**	**98**	**95**	70-130	
09-IF-030512	P1200947-008	**105**	**99**	**97**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**202**	**102**	54-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**167**	**85**	55-112	
74-87-3	Chloromethane	190	**165**	**87**	66-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**167**	**84**	64-113	
106-99-0	1,3-Butadiene	204	**197**	**97**	74-142	
74-83-9	Bromomethane	194	**171**	**88**	72-124	
75-00-3	Chloroethane	196	**168**	**86**	69-115	
64-17-5	Ethanol	928	**860**	**93**	67-127	
75-05-8	Acetonitrile	194	**190**	**98**	63-126	
107-02-8	Acrolein	198	**175**	**88**	62-127	
67-64-1	Acetone	1,010	**880**	**87**	67-106	
75-69-4	Trichlorofluoromethane	202	**173**	**86**	66-121	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**308**	**81**	56-112	
107-13-1	Acrylonitrile	198	**194**	**98**	78-128	
75-35-4	1,1-Dichloroethene	212	**190**	**90**	74-116	
75-09-2	Methylene Chloride	206	**177**	**86**	69-103	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**211**	**101**	76-142	
76-13-1	Trichlorotrifluoroethane	206	**184**	**89**	69-118	
75-15-0	Carbon Disulfide	208	**180**	**87**	71-112	
156-60-5	trans-1,2-Dichloroethene	196	**182**	**93**	73-121	
75-34-3	1,1-Dichloroethane	200	**187**	**94**	71-118	
1634-04-4	Methyl tert-Butyl Ether	198	**188**	**95**	72-115	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**937**	**98**	51-150	
78-93-3	2-Butanone (MEK)	206	**196**	**95**	80-130	
156-59-2	cis-1,2-Dichloroethene	206	**190**	**92**	73-117	
141-78-6	Ethyl Acetate	398	**375**	**94**	79-126	
110-54-3	n-Hexane	198	**175**	**88**	68-109	
67-66-3	Chloroform	214	**186**	**87**	67-118	
109-99-9	Tetrahydrofuran (THF)	202	**182**	**90**	57-130	
71-55-6	1,1,1-Trichloroethane	198	**178**	**90**	70-116	
56-23-5	Carbon Tetrachloride	202	**187**	**93**	68-123	
110-82-7	Cyclohexane	390	**341**	**87**	73-111	
78-87-5	1,2-Dichloropropane	198	**175**	**88**	74-114	
75-27-4	Bromodichloromethane	198	**182**	**92**	75-120	
123-91-1	1,4-Dioxane	200	**180**	**90**	74-120	
80-62-6	Methyl Methacrylate	400	**373**	**93**	80-124	
142-82-5	n-Heptane	196	**178**	**91**	75-114	
10061-01-5	cis-1,3-Dichloropropene	188	**177**	**94**	79-120	
108-10-1	4-Methyl-2-pentanone	204	**196**	**96**	79-128	
10061-02-6	trans-1,3-Dichloropropene	210	**204**	**97**	83-131	
108-88-3	Toluene	202	**170**	**84**	64-115	
591-78-6	2-Hexanone	222	**203**	**91**	73-120	
124-48-1	Dibromochloromethane	206	**187**	**91**	72-137	
106-93-4	1,2-Dibromoethane	200	**171**	**86**	70-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**201**	**91**	65-127	
111-65-9	n-Octane	200	**184**	**92**	72-118	
108-90-7	Chlorobenzene	202	**167**	**83**	65-117	
179601-23-1	m,p-Xylenes	392	**342**	**87**	68-119	
75-25-2	Bromoform	208	**180**	**87**	79-150	
100-42-5	Styrene	200	**178**	**89**	74-127	
95-47-6	o-Xylene	194	**167**	**86**	68-118	
111-84-2	n-Nonane	196	**175**	**89**	72-116	
98-82-8	Cumene	190	**163**	**86**	68-119	
80-56-8	alpha-Pinene	186	**165**	**89**	70-123	
103-65-1	n-Propylbenzene	192	**163**	**85**	69-119	
622-96-8	4-Ethyltoluene	198	**167**	**84**	68-121	
108-67-8	1,3,5-Trimethylbenzene	200	**172**	**86**	67-118	
95-63-6	1,2,4-Trimethylbenzene	194	**172**	**89**	66-122	
100-44-7	Benzyl Chloride	200	**193**	**97**	73-144	
541-73-1	1,3-Dichlorobenzene	200	**157**	**79**	64-122	
106-46-7	1,4-Dichlorobenzene	206	**153**	**74**	65-125	
95-50-1	1,2-Dichlorobenzene	198	**156**	**79**	63-128	
5989-27-5	d-Limonene	200	**189**	**95**	72-126	
96-12-8	1,2-Dibromo-3-chloropropane	196	**173**	**88**	72-139	
120-82-1	1,2,4-Trichlorobenzene	196	**158**	**81**	65-139	
87-68-3	Hexachlorobutadiene	202	**161**	**80**	58-137	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**197**	**99**	54-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**159**	**81**	55-112	
74-87-3	Chloromethane	190	**159**	**84**	66-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**159**	**80**	64-113	
106-99-0	1,3-Butadiene	204	**184**	**90**	74-142	
74-83-9	Bromomethane	194	**162**	**84**	72-124	
75-00-3	Chloroethane	196	**160**	**82**	69-115	
64-17-5	Ethanol	928	**797**	**86**	67-127	
75-05-8	Acetonitrile	194	**183**	**94**	63-126	
107-02-8	Acrolein	198	**169**	**85**	62-127	
67-64-1	Acetone	1,010	**851**	**84**	67-106	
75-69-4	Trichlorofluoromethane	202	**165**	**82**	66-121	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**290**	**76**	56-112	
107-13-1	Acrylonitrile	198	**190**	**96**	78-128	
75-35-4	1,1-Dichloroethene	212	**186**	**88**	74-116	
75-09-2	Methylene Chloride	206	**172**	**83**	69-103	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**205**	**99**	76-142	
76-13-1	Trichlorotrifluoroethane	206	**177**	**86**	69-118	
75-15-0	Carbon Disulfide	208	**173**	**83**	71-112	
156-60-5	trans-1,2-Dichloroethene	196	**177**	**90**	73-121	
75-34-3	1,1-Dichloroethane	200	**182**	**91**	71-118	
1634-04-4	Methyl tert-Butyl Ether	198	**181**	**91**	72-115	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**916**	**96**	51-150	
78-93-3	2-Butanone (MEK)	206	**191**	**93**	80-130	
156-59-2	cis-1,2-Dichloroethene	206	**185**	**90**	73-117	
141-78-6	Ethyl Acetate	398	**369**	**93**	79-126	
110-54-3	n-Hexane	198	**167**	**84**	68-109	
67-66-3	Chloroform	214	**181**	**85**	67-118	
109-99-9	Tetrahydrofuran (THF)	202	**178**	**88**	57-130	
71-55-6	1,1,1-Trichloroethane	198	**177**	**89**	70-116	
56-23-5	Carbon Tetrachloride	202	**184**	**91**	68-123	
110-82-7	Cyclohexane	390	**335**	**86**	73-111	
78-87-5	1,2-Dichloropropane	198	**173**	**87**	74-114	
75-27-4	Bromodichloromethane	198	**180**	**91**	75-120	
123-91-1	1,4-Dioxane	200	**178**	**89**	74-120	
80-62-6	Methyl Methacrylate	400	**371**	**93**	80-124	
142-82-5	n-Heptane	196	**178**	**91**	75-114	
10061-01-5	cis-1,3-Dichloropropene	188	**173**	**92**	79-120	
108-10-1	4-Methyl-2-pentanone	204	**194**	**95**	79-128	
10061-02-6	trans-1,3-Dichloropropene	210	**200**	**95**	83-131	
108-88-3	Toluene	202	**170**	**84**	64-115	
591-78-6	2-Hexanone	222	**202**	**91**	73-120	
124-48-1	Dibromochloromethane	206	**188**	**91**	72-137	
106-93-4	1,2-Dibromoethane	200	**172**	**86**	70-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**199**	**90**	65-127	
111-65-9	n-Octane	200	**184**	**92**	72-118	
108-90-7	Chlorobenzene	202	**167**	**83**	65-117	
179601-23-1	m,p-Xylenes	392	**342**	**87**	68-119	
75-25-2	Bromoform	208	**181**	**87**	79-150	
100-42-5	Styrene	200	**178**	**89**	74-127	
95-47-6	o-Xylene	194	**167**	**86**	68-118	
111-84-2	n-Nonane	196	**174**	**89**	72-116	
98-82-8	Cumene	190	**164**	**86**	68-119	
80-56-8	alpha-Pinene	186	**166**	**89**	70-123	
103-65-1	n-Propylbenzene	192	**164**	**85**	69-119	
622-96-8	4-Ethyltoluene	198	**168**	**85**	68-121	
108-67-8	1,3,5-Trimethylbenzene	200	**173**	**87**	67-118	
95-63-6	1,2,4-Trimethylbenzene	194	**172**	**89**	66-122	
100-44-7	Benzyl Chloride	200	**194**	**97**	73-144	
541-73-1	1,3-Dichlorobenzene	200	**158**	**79**	64-122	
106-46-7	1,4-Dichlorobenzene	206	**155**	**75**	65-125	
95-50-1	1,2-Dichlorobenzene	198	**155**	**78**	63-128	
5989-27-5	d-Limonene	200	**187**	**94**	72-126	
96-12-8	1,2-Dibromo-3-chloropropane	196	**172**	**88**	72-139	
120-82-1	1,2,4-Trichlorobenzene	196	**157**	**80**	65-139	
87-68-3	Hexachlorobutadiene	202	**160**	**79**	58-137	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **02-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00687

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	Duplicate Sample Result ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Propene	3.60	2.09	3.43	1.99	3.515	**5**	25	
Dichlorodifluoromethane (CFC 12)	2.14	0.433	2.09	0.423	2.115	**2**	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	579	308	562	298	570.5	**3**	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	28.9	12.2	28.7	12.1	28.8	**0.7**	25	
Trichlorofluoromethane	1.08	0.192	1.12	0.200	1.1	**4**	25	
2-Propanol (Isopropyl Alcohol)	17.6	7.17	17.7	7.22	17.65	**0.6**	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **02-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00687

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result **µg/m³**	Duplicate Sample Result **ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	ND	ND	-	-	25	
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	37.1	10.3	37.3	10.4	37.2	**0.5**	25	
n-Hexane	13.5	3.84	13.5	3.83	13.5	**0**	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	2.36	0.686	2.33	0.677	2.345	**1**	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	5.70	1.39	5.81	1.42	5.755	**2**	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
Toluene	34.4	9.12	34.3	9.10	34.35	**0.3**	25	
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **02-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00687

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
n-Butyl Acetate	4.95	1.04	4.87	1.03	4.91	**2**	25	
n-Octane	1.99	0.425	1.94	0.415	1.965	**3**	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	22.3	5.13	22.0	5.07	22.15	**1**	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	2.31	0.543	2.26	0.532	2.285	**2**	25	
o-Xylene	7.71	1.78	7.63	1.76	7.67	**1**	25	
n-Nonane	2.09	0.399	2.14	0.408	2.115	**2**	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	11.0	1.97	10.9	1.96	10.95	**0.9**	25	
n-Propylbenzene	1.65	0.336	1.62	0.330	1.635	**2**	25	
4-Ethyltoluene	2.55	0.519	2.53	0.515	2.54	**0.8**	25	
1,3,5-Trimethylbenzene	3.02	0.615	3.00	0.610	3.01	**0.7**	25	
1,2,4-Trimethylbenzene	8.80	1.79	8.72	1.77	8.76	**0.9**	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	24.2	4.34	23.8	4.28	24	**2**	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **01-IF-030512** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-001

Test Code: EPA TO-15 SIM Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/12/12
Analyst: Karen Ryan Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01505
Initial Pressure (psig): -3.41 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	**0.048**	0.040	**0.019**	0.016	
107-06-2	1,2-Dichloroethane	**0.23**	0.040	**0.056**	0.0099	
71-43-2	Benzene	**4.0**	0.12	**1.2**	0.038	
79-01-6	Trichloroethene	**0.29**	0.040	**0.054**	0.0075	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.030	
127-18-4	Tetrachloroethene	**0.17**	0.040	**0.026**	0.0059	
100-41-4	Ethylbenzene	**2.3**	0.16	**0.52**	0.037	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.040	ND	0.0059	
91-20-3	Naphthalene	**0.36**	0.16	**0.068**	0.031	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **02-IF-030512** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-002

Test Code: EPA TO-15 SIM Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/12/12
Analyst: Karen Ryan Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00687

Initial Pressure (psig): -4.86 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.85

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.046	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.69**	0.046	**0.17**	0.011	
71-43-2	Benzene	**8.2**	0.14	**2.6**	0.043	
79-01-6	Trichloroethene	**0.26**	0.046	**0.048**	0.0086	
79-00-5	1,1,2-Trichloroethane	ND	0.19	ND	0.034	
127-18-4	Tetrachloroethene	**0.23**	0.046	**0.033**	0.0068	
100-41-4	Ethylbenzene	**5.8**	0.19	**1.3**	0.043	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.046	ND	0.0067	
91-20-3	Naphthalene	**1.1**	0.19	**0.21**	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **03-IF-030512** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-003

Test Code: EPA TO-15 SIM Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/12/12
Analyst: Karen Ryan Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00178

Initial Pressure (psig): -4.80 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.84

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.046	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.11**	0.046	**0.027**	0.011	
71-43-2	Benzene	ND	0.14	ND	0.043	
79-01-6	Trichloroethene	ND	0.046	ND	0.0086	
79-00-5	1,1,2-Trichloroethane	ND	0.18	ND	0.034	
127-18-4	Tetrachloroethene	**3.9**	0.046	**0.57**	0.0068	
100-41-4	Ethylbenzene	ND	0.18	ND	0.042	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.046	ND	0.0067	
91-20-3	Naphthalene	ND	0.18	ND	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **05-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-004

Test Code: EPA TO-15 SIM Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/12/12
Analyst: Wida Ang Date Analyzed: 3/23/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01198
Initial Pressure (psig): -3.39 Final Pressure (psig): 3.53

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.040	ND	0.016	
107-06-2	1,2-Dichloroethane	**1.2**	0.040	**0.31**	0.0099	
71-43-2	Benzene	**20**	0.12	**6.2**	0.038	
79-01-6	Trichloroethene	**0.24**	0.040	**0.044**	0.0075	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.030	
127-18-4	Tetrachloroethene	**0.060**	0.040	**0.0088**	0.0059	
100-41-4	Ethylbenzene	**11**	0.16	**2.6**	0.037	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.040	ND	0.0059	
91-20-3	Naphthalene	**1.5**	0.16	**0.28**	0.031	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **06-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-005

Test Code: EPA TO-15 SIM Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/12/12
Analyst: Wida Ang Date Analyzed: 3/23/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00137
Initial Pressure (psig): -2.12 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.037	ND	0.014	
107-06-2	1,2-Dichloroethane	**0.57**	0.037	**0.14**	0.0091	
71-43-2	Benzene	**4.6**	0.11	**1.4**	0.035	
79-01-6	Trichloroethene	**0.27**	0.037	**0.051**	0.0068	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.027	
127-18-4	Tetrachloroethene	**0.19**	0.037	**0.028**	0.0054	
100-41-4	Ethylbenzene	**2.6**	0.15	**0.59**	0.034	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.037	ND	0.0054	
91-20-3	Naphthalene	**0.65**	0.15	**0.12**	0.028	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **07-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-006

Test Code: EPA TO-15 SIM Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/12/12
Analyst: Wida Ang Date Analyzed: 3/23/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01570
Initial Pressure (psig): -2.36 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.49

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.037	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.38**	0.037	**0.095**	0.0092	
71-43-2	Benzene	**0.50**	0.11	**0.16**	0.035	
79-01-6	Trichloroethene	**0.22**	0.037	**0.041**	0.0069	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.027	
127-18-4	Tetrachloroethene	**0.11**	0.037	**0.017**	0.0055	
100-41-4	Ethylbenzene	**0.68**	0.15	**0.16**	0.034	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.037	ND	0.0054	
91-20-3	Naphthalene	**0.37**	0.15	**0.070**	0.028	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **08-IF-030712** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-007

Test Code: EPA TO-15 SIM Date Collected: 3/7/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/12/12
Analyst: Wida Ang Date Analyzed: 3/23/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00184
Initial Pressure (psig): -2.87 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.039	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.48**	0.039	**0.12**	0.0096	
71-43-2	Benzene	**0.52**	0.12	**0.16**	0.036	
79-01-6	Trichloroethene	**0.96**	0.039	**0.18**	0.0072	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.028	
127-18-4	Tetrachloroethene	**0.14**	0.039	**0.021**	0.0057	
100-41-4	Ethylbenzene	**0.65**	0.16	**0.15**	0.036	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.039	ND	0.0056	
91-20-3	Naphthalene	ND	0.16	ND	0.030	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **09-IF-030512** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1200947-008

Test Code: EPA TO-15 SIM Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/12/12
Analyst: Wida Ang Date Analyzed: 3/23/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00553
Initial Pressure (psig): -4.65 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.82

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.046	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.47**	0.046	**0.12**	0.011	
71-43-2	Benzene	**0.64**	0.14	**0.20**	0.043	
79-01-6	Trichloroethene	**5.2**	0.046	**0.96**	0.0085	
79-00-5	1,1,2-Trichloroethane	ND	0.18	ND	0.033	
127-18-4	Tetrachloroethene	**0.097**	0.046	**0.014**	0.0067	
100-41-4	Ethylbenzene	**1.6**	0.18	**0.37**	0.042	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.046	ND	0.0066	
91-20-3	Naphthalene	ND	0.18	ND	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120323-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/23/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1200947

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date(s) Collected: 3/5 - 3/7/12
Analyst: Karen Ryan Date(s) Received: 3/12/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 3/22 - 3/23/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120322-MB	**102**	**116**	**110**	70-130	
Method Blank	P120323-MB	**100**	**112**	**114**	70-130	
Lab Control Sample	P120322-LCS	**103**	**115**	**114**	70-130	
Lab Control Sample	P120323-LCS	**98**	**112**	**110**	70-130	
01-IF-030512	P1200947-001	**98**	**115**	**119**	70-130	
02-IF-030512	P1200947-002	**96**	**114**	**115**	70-130	
03-IF-030512	P1200947-003	**98**	**114**	**120**	70-130	
05-IF-030712	P1200947-004	**100**	**113**	**99**	70-130	
06-IF-030712	P1200947-005	**100**	**112**	**109**	70-130	
07-IF-030712	P1200947-006	**98**	**114**	**114**	70-130	
08-IF-030712	P1200947-007	**97**	**113**	**115**	70-130	
09-IF-030512	P1200947-008	**97**	**113**	**114**	70-130	
09-IF-030512	P1200947-008DUP	**98**	**111**	**113**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**3.45**	**89**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**3.48**	**87**	51-140	
71-43-2	Benzene	3.96	**3.89**	**98**	56-125	
79-01-6	Trichloroethene	3.88	**3.29**	**85**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**3.39**	**86**	49-137	
127-18-4	Tetrachloroethene	3.68	**3.22**	**88**	58-134	
100-41-4	Ethylbenzene	3.96	**3.23**	**82**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**3.33**	**87**	53-148	
91-20-3	Naphthalene	3.44	**3.35**	**97**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1200947
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120323-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/23/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**3.38**	**87**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**3.33**	**83**	51-140	
71-43-2	Benzene	3.96	**3.93**	**99**	56-125	
79-01-6	Trichloroethene	3.88	**3.22**	**83**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**3.26**	**83**	49-137	
127-18-4	Tetrachloroethene	3.68	**3.18**	**86**	58-134	
100-41-4	Ethylbenzene	3.96	**3.39**	**86**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**3.33**	**87**	53-148	
91-20-3	Naphthalene	3.44	**3.47**	**101**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **09-IF-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1200947
CAS Sample ID: P1200947-008DUP

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00553

Date Collected: 3/5/12
Date Received: 3/12/12
Date Analyzed: 3/23/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.56

Canister Dilution Factor: 1.82

CAS #	Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	Duplicate Sample Result ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
75-01-4	Vinyl Chloride	ND	ND	ND	ND	-	**-**	25	
107-06-2	1,2-Dichloroethane	0.466	0.115	0.469	0.116	0.4675	**0.6**	25	
71-43-2	Benzene	0.638	0.200	0.631	0.198	0.6345	**1**	25	
79-01-6	Trichloroethene	5.18	0.964	5.09	0.947	5.135	**2**	25	
79-00-5	1,1,2-Trichloroethane	ND	ND	ND	ND	-	**-**	25	
127-18-4	Tetrachloroethene	0.0969	0.0143	0.0953	0.0141	0.0961	**2**	25	
100-41-4	Ethylbenzene	1.63	0.375	1.62	0.374	1.625	**0.6**	25	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	**-**	25	
91-20-3	Naphthalene	ND	ND	ND	ND	-	**-**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

Massachusetts APH **ICAL Method:** M8011412A.M **ICAL Date:** 1/14/12 **Instrument ID:** MS08

Hydrocarbon Ranges

	areas							masses					
C5-C8 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopentane	60478	112606	488243	2480105	4710733	9222808		0.520	1.04	5.20	26.0	52.0	104
n-Hexane	59953	110631	507126	2577865	4931102	9678199		0.490	0.98	4.90	24.5	49.0	98
Cyclohexane	63203	115230	548910	2874726	5524402	10890911		0.500	1.00	5.00	25.0	50.0	100
2,3-Dimethylpentane	68648	127222	585183	2998017	5742104	11319597		0.520	1.04	5.20	26.0	52.0	104
n-Heptane	66143	120286	558074	2884817	5509801	10873046		0.490	0.98	4.90	24.5	49.0	98
n-Octane	76169	137829	632891	3286017	6205035	12092514		0.505	1.01	5.05	25.3	50.5	101
area sum:	**394594**	**723804**	**3320427**	**17101547**	**32623177**	**64077075**	**sum:**	**3.025**	**6.050**	**30.25**	**151.30**	**302.50**	**605.00**

C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
2,3-Dimethylheptane	78780	147724	682518	3501487	6691428	13148840		0.485	0.97	4.85	24.3	48.5	97
n-Nonane	77464	140680	662221	3417128	6555165	12940625		0.485	0.97	4.85	24.3	48.5	97
n-Decane	80593	147724	705259	3651028	7021424	13870530		0.490	0.98	4.90	24.5	49.0	98
Butylcyclohexane	88915	166782	776903	4026931	7749936	15415340		0.495	0.99	4.95	24.8	49.5	99
n-Undecane	80867	152557	719618	3772331	7263077	14385881		0.480	0.96	4.80	24.0	48.0	96
n-Dodecane	70045	143746	687255	3673524	7115012	14041583		0.500	1.00	5.00	25.0	50.0	100
area sum:	**476664**	**899213**	**4233774**	**22042429**	**42396042**	**83802799**	**sum:**	**2.935**	**5.870**	**29.35**	**146.90**	**293.50**	**587.00**

C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopropylbenzene	10658	19169	87439	448287	849124	1695737		0.485	0.97	4.85	24.3	48.5	97
3-Ethyltoluene	11805	20564	97823	504510	977020	1973178		0.470	0.94	4.70	23.5	47.0	94
1,3,5-Trimethylbenzene	15759	29260	134073	700133	1353305	2726630		0.490	0.98	4.90	24.5	49.0	98
1,2,3-Trimethylbenzene	17195	31328	143473	757946	1493373	3063059		0.495	0.99	4.95	24.8	49.5	99
p-Isopropyltoluene	9490	18116	83401	440962	872799	1814314		0.460	0.92	4.60	23.0	46.0	92
area sum:	**64907**	**118437**	**546209**	**2851838**	**5545621**	**11272918**	**sum:**	**2.400**	**4.800**	**24.00**	**120.10**	**240.00**	**480.00**

Massachusetts APH **ICAL:** M8011412A.M **ICAL Date:** 1/14/12 **Instrument ID:** MS08

Hydrocarbon Ranges

areas

Internal Standards (TIC)	0.5	1	5	25	50	100
Bromochloromethane (IS1)	1312793	1307309	1293586	1289283	1284194	1283817
1,4-Difluorobenzene (IS2)	2547079	2541159	2512498	2475255	2422119	2352159
Chlorobenzene-d5 (IS3)	2929189	2913374	2880258	2895080	2878314	2908396
Internal Standards (EIC)						
Bromochloromethane (IS1)	249696	247899	245985	245585	244327	243561
1,4-Difluorobenzene (IS2)	1153657	1149947	1133233	1136223	1127203	1138730
Chlorobenzene-d5 (IS3)	1007702	1004638	991212	992925	982812	986950
Surrogates (TIC)	**0.5**	**1**	**5**	**25**	**50**	**100**
1,2-Dichloroethane-d4	1162497	1154617	1105630	1126201	1103958	1095945
Toluene-d8	3508018	3490493	3455382	3466688	3437986	3457323
p-Bromofluorobenzene	2298220	2284797	2197239	2227396	2192159	2197999

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RRFs

C5-C8 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	2.8268	2.6009	2.4215	2.4870	2.3919	2.3252	2.509	7.24
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	4.0291	3.8120	3.6383	3.7780	3.6744	3.6163	3.758	4.09
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	0.6709	0.6140	0.5740	0.5979	0.5878	0.5949	0.607	5.63

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **03211203.D**
Data File Path: **J:\MS08\Data\2012_03\21**
Operator: **EM**
Date Acquired: **3/21/12 5:39**
Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15/MAPH CCV STD**
Misc Info: **S25-03151201/S25-03161202**
Instrument Name: **MS08**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	15.89	1102904
16)	Chlorobenzene-d5 (IS3)	21.69	947969

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	8.19	2464516	2.569	154.9	**2.39**	**-30**	**30**	Pass
4)	n-Hexane	13.08	2578864						
9)	Cyclohexane	15.81	2862780						
10)	2,3-Dimethylpentane	16.17	3020819	**Spike**	**ICAL**				
11)	n-Heptane	17.35	2903399	**Amt (ng)**	**RRF**				
14)	n-Octane	20.69	3316542	151.30	2.509				
			17146920						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
18)	2,3-Dimethylheptane	22.31	3515879	3.955	154.6	**5.23**	**-30**	**30**	Pass
19)	n-Nonane	23.30	3434658						
25)	n-Decane	25.26	3663558						
28)	Butylcyclohexane	25.99	4002852	**Spike**	**ICAL**				
29)	n-Undecane	26.76	3775128	**Amt (ng)**	**RRF**				
30)	n-Dodecane	28.00	3635722	146.90	3.758				
			22027797						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
22)	Isopropylbenzene	23.78	446789	0.612	121.1	**0.80**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	24.52	492493						
24)	1,3,5-Trimethylbenzene	24.66	681321						
26)	p-Isopropyltoluene	25.68	426000	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	25.68	739855	**Amt (ng)**	**RRF**				
			2786458	120.1	0.607				

EM 3/21/12

Response Factor Report MS08

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Dec 12 09:45:45 2011
Response Via : Initial Calibration

Calibration Files
0.1 =12091118.D 0.2 =12091119.D 0.5 =12091120.D 1.0 =12091121.D 5.0 =12091122.D 25 =12091123.D
50 =12091124.D 100 =12091125.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	----------	ISTD	----------	----------	----------	----------	----------		
2)	T	Propene	2.487	1.965	1.952	1.692	2.194	2.303	2.185	2.036	2.102	11.62
3)	T	Dichlorodifluo...	3.545	2.805	2.940	2.748	2.432	2.361	2.278	2.199	2.664	16.73
4)	T	Chloromethane	3.290	2.811	2.875	2.512	2.176	2.286	1.977	1.664	2.449	21.62
5)	T	1,2-Dichloro-1...	1.901	1.661	1.575	1.458	1.359	1.333	1.200	1.190	1.460	16.68
6)	T	Vinyl Chloride	2.906	2.590	2.631	2.374	2.145	2.129	1.950	1.939	2.333	15.07
7)	T	1,3-Butadiene	2.145	1.788	1.790	1.718	1.581	1.689	1.621	1.616	1.743	10.33
8)	T	Bromomethane	1.687	1.328	1.349	1.212	1.094	1.142	1.111	1.092	1.252	16.21
9)	T	Chloroethane	1.671	1.259	1.333	1.193	1.101	1.091	1.046	1.044	1.217	17.29
10)	T	Ethanol	2.040	1.345	1.186	1.085	1.022	1.096	1.076	1.064	1.239	27.34
11)	T	Acetonitrile	4.365	2.973	2.723	2.546	2.480	2.562	2.482	2.468	2.825	22.85
12)	T	Acrolein	1.328	0.931	0.907	0.861	0.772	0.814	0.789	0.779	0.897	20.48
13)	T	Acetone	1.645	1.316	1.249	1.129	0.994	1.015	0.981	0.964	1.161	20.26
14)	T	Trichlorofluor...	2.776	2.385	2.496	2.272	2.097	2.135	2.042	2.011	2.277	11.59
15)	T	2-Propanol (Is...		4.463	4.536	4.168	2.920	2.763	2.577	2.672	3.443	26.09
16)	T	Acrylonitrile	2.701	1.907	1.878	1.783	1.745	1.813	1.765	1.738	1.916	16.85
17)	T	1,1-Dichloroet...	1.458	1.418	1.452	1.263	1.206	1.223	1.172	1.152	1.293	9.95
18)	T	2-Methyl-2-Pro...	4.464	3.710	3.939	3.616	3.558	3.584			3.812	9.14
19)	T	Methylene Chlo...			1.958	1.578	1.294	1.273	1.220	1.201	1.421	20.88
20)	T	3-Chloro-1-pro...	2.347	2.260	2.345	2.220	2.150	2.296	2.230	2.191	2.255	3.15
21)	T	Trichlorotrifl...	1.348	1.244	1.299	1.193	1.089	1.098	1.062	1.035	1.171	10.01
22)	T	Carbon Disulfide		6.210	5.678	5.057	4.654	4.699	4.488	4.424	5.030	13.40
23)	T	trans-1,2-Dich...	2.436	2.237	2.206	2.142	1.951	1.953	1.883	1.835	2.080	10.00
24)	T	1,1-Dichloroet...	2.896	2.757	2.747	2.500	2.307	2.379	2.288	2.236	2.514	10.07
25)	T	Methyl tert-Bu...	5.128	4.611	4.650	4.307	4.119	4.185	4.042	3.984	4.378	8.93
26)	T	Vinyl Acetate	0.430	0.368	0.423	0.399	0.393	0.410	0.402	0.398	0.403	4.70
27)	T	2-Butanone (MEK)	1.265	1.003	1.038	0.972	0.927	0.964	0.928	0.794	0.986	13.56
28)	T	cis-1,2-Dichlo...	2.442	2.056	2.101	1.938	1.826	1.836	1.764	1.720	1.960	12.05
29)	T	Diisopropyl Ether	1.446	1.223	1.323	1.262	1.171	1.188	1.153	1.148	1.239	8.26
30)	T	Ethyl Acetate	0.611	0.554	0.573	0.545	0.517	0.535	0.520	0.516	0.546	6.02
31)	T	n-Hexane	3.541	3.006	3.181	2.805	2.582	2.633	2.545	2.543	2.855	12.70

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.679	2.408	2.409	2.204	1.983	2.054	1.974	1.937	2.206	12.18
33)	S	1,2-Dichloroet...	1.586	1.577	1.582	1.590	1.535	1.533	1.520	1.504	1.553	2.19
34)	T	Tetrahydrofura...	1.274	0.932	1.100	0.938	0.910	0.879	0.830	0.821	0.961	15.96
35)	T	Ethyl tert-But...	1.999	1.832	2.033	1.818	1.732	1.757	1.708	1.687	1.821	7.18
36)	T	1,2-Dichloroet...	2.099	1.992	1.976	1.806	1.683	1.700	1.599	1.531	1.798	11.39
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.531	0.465	0.486	0.453	0.419	0.434	0.413	0.403	0.451	9.46
39)	T	Isopropyl Acetate	0.227	0.205	0.220	0.206	0.194	0.201	0.192	0.188	0.204	6.71
40)	T	1-Butanol		0.348	0.319	0.300	0.320	0.335	0.324	0.318	0.323	4.66
41)	T	Benzene	1.633	1.385	1.359	1.227	1.136	1.158	1.101	1.070	1.258	15.11
42)	T	Carbon Tetrach...	0.394	0.356	0.369	0.340	0.334	0.352	0.337	0.333	0.352	6.03
43)	T	Cyclohexane	0.666	0.576	0.588	0.539	0.492	0.500	0.479	0.469	0.539	12.59
44)	T	tert-Amyl Meth...	1.092	0.926	0.998	0.937	0.900	0.918	0.881	0.858	0.939	7.95
45)	T	1,2-Dichloropr...	0.397	0.361	0.368	0.324	0.312	0.316	0.300	0.293	0.334	11.12
46)	T	Bromodichlorom...	0.458	0.387	0.392	0.378	0.362	0.378	0.362	0.353	0.384	8.57
47)	T	Trichloroethene	0.466	0.375	0.379	0.344	0.323	0.328	0.316	0.309	0.355	14.62
48)	T	1,4-Dioxane	0.305	0.282	0.288	0.248	0.245	0.246	0.237	0.230	0.260	10.55
49)	T	2,2,4-Trimethy...	1.964	1.629	1.686	1.546	1.447	1.461	1.387	1.337	1.557	12.98
50)	T	Methyl Methacr...	0.156	0.139	0.150	0.135	0.136	0.142	0.136	0.135	0.141	5.53
51)	T	n-Heptane	0.427	0.373	0.385	0.364	0.341	0.344	0.332	0.324	0.361	9.35
52)	T	cis-1,3-Dichlo...	0.571	0.502	0.521	0.491	0.482	0.500	0.481	0.471	0.502	6.33
53)	T	4-Methyl-2-pen...	0.359	0.295	0.308	0.303	0.297	0.303	0.289	0.284	0.305	7.68
54)	T	trans-1,3-Dich...	0.476	0.413	0.443	0.421	0.429	0.453	0.437	0.427	0.437	4.59
55)	T	1,1,2-Trichlor...	0.340	0.301	0.310	0.284	0.276	0.285	0.271	0.265	0.292	8.44
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	2.305	2.306	2.305	2.309	2.306	2.300	2.310	2.304	2.306	0.14
58)	T	Toluene	3.623	2.920	3.025	2.738	2.571	2.574	2.473	2.421	2.793	14.19
59)	T	2-Hexanone	2.049	1.429	1.515	1.403	1.395	1.422	1.367	1.337	1.490	15.57
60)	T	Dibromochlorom...	0.696	0.618	0.636	0.636	0.612	0.648	0.629	0.625	0.638	4.14
61)	T	1,2-Dibromoethane	0.831	0.730	0.718	0.658	0.641	0.662	0.638	0.628	0.688	9.97
62)	T	n-Butyl Acetate	2.338	1.850	1.857	1.721	1.704	1.765	1.737	1.737	1.839	11.40
63)	T	n-Octane	0.785	0.652	0.714	0.643	0.602	0.611	0.580	0.572	0.645	11.28
64)	T	Tetrachloroethene	1.090	0.904	0.904	0.826	0.767	0.779	0.756	0.755	0.848	13.63
65)	T	Chlorobenzene	2.375	1.868	1.886	1.744	1.610	1.637	1.574	1.548	1.780	15.30
66)	T	Ethylbenzene	3.846	3.171	3.188	2.956	2.803	2.848	2.743	2.680	3.030	12.51
67)	T	m- & p-Xylenes	3.081	2.499	2.611	2.392	2.216	2.273	2.170	2.112	2.419	13.08
68)	T	Bromoform	0.622	0.494	0.556	0.541	0.551	0.598	0.589	0.594	0.568	7.19
69)	T	Styrene	2.478	1.895	1.937	1.800	1.735	1.803	1.726	1.675	1.881	13.64
70)	T	o-Xylene	3.279	2.708	2.726	2.479	2.331	2.373	2.283	2.224	2.550	13.65

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	2.005	1.753	1.847	1.675	1.581	1.597	1.518	1.470	1.681	10.69
72)	T	1,1,2,2-Tetrac...	1.348	1.164	1.262	1.150	1.083	1.121	1.085	1.066	1.160	8.48
73)	S	Bromofluoroben...	0.774	0.771	0.779	0.781	0.775	0.778	0.782	0.780	0.777	0.50
74)	T	Cumene	4.522	3.495	3.524	3.169	2.962	3.002	2.884	2.831	3.299	16.98
75)	T	alpha-Pinene	1.782	1.636	1.734	1.601	1.537	1.578	1.518	1.498	1.611	6.35
76)	T	n-Propylbenzene	5.441	4.229	4.306	3.924	3.710	3.754	3.553	3.394	4.039	16.01
77)	T	3-Ethyltoluene	4.091	3.373	3.461	3.038	2.964	2.981	2.893	2.845	3.206	13.14
78)	T	4-Ethyltoluene	4.003	3.202	3.301	3.151	2.837	2.983	2.810	2.776	3.133	12.84
79)	T	1,3,5-Trimethy...	3.324	2.662	2.723	2.537	2.378	2.426	2.344	2.403	2.600	12.43
80)	T	alpha-Methylst...	1.742	1.386	1.449	1.371	1.390	1.402	1.354	1.399	1.436	8.80
81)	T	2-Ethyltoluene	4.143	3.362	3.430	3.169	2.975	3.048	2.919	2.985	3.254	12.43
82)	T	1,2,4-Trimethy...	3.356	2.663	2.791	2.551	2.433	2.513	2.454	2.548	2.664	11.37
83)	T	n-Decane	1.969	1.702	1.844	1.705	1.582	1.626	1.554	1.609	1.699	8.39
84)	T	Benzyl Chloride	2.373	1.648	1.772	1.688	1.799	2.058	2.054	2.190	1.948	13.35
85)	T	1,3-Dichlorobe...	2.498	1.658	1.649	1.455	1.377	1.409	1.374	1.436	1.607	23.49
86)	T	1,4-Dichlorobe...	2.655	1.785	1.618	1.492	1.380	1.428	1.388	1.449	1.649	25.99
87)	T	sec-Butylbenzene	4.527	3.773	3.816	3.471	3.264	3.328	3.214	3.176	3.571	12.80
88)	T	4-Isopropyltol...	4.426	3.674	3.683	3.416	3.254	3.356	3.253	3.366	3.554	10.98
89)	T	1,2,3-Trimethy...	3.266	2.650	2.852	2.588	2.471	2.573	2.506	2.619	2.691	9.63
90)	T	1,2-Dichlorobe...	2.173	1.589	1.545	1.435	1.332	1.387	1.370	1.415	1.531	17.89
91)	T	d-Limonene	1.124	0.998	1.106	1.069	1.064	1.072	1.040	1.065	1.067	3.58
92)	T	1,2-Dibromo-3-...	0.563	0.488	0.501	0.486	0.494	0.525	0.532	0.542	0.517	5.50
93)	T	n-Undecane	1.922	1.637	1.755	1.671	1.608	1.630	1.608	1.592	1.678	6.63
94)	T	1,2,4-Trichlor...		1.335	1.165	1.062	1.017	1.071	1.086	1.118	1.122	9.32
95)	T	Naphthalene		4.848	3.923	3.638	3.497	3.721	3.755	3.783	3.881	11.50
96)	T	n-Dodecane	1.866	1.599	1.669	1.586	1.545	1.575	1.553	1.509	1.613	6.99
97)	T	Hexachlorobuta...	0.841	0.749	0.730	0.673	0.635	0.664	0.663	0.676	0.704	9.50
98)	T	Cyclohexanone	1.172	0.979	1.021	0.969	0.952	0.962	0.931	0.903	0.986	8.37
99)	T	tert-Butylbenzene	3.486	2.799	2.880	2.658	2.449	2.533	2.453	2.528	2.723	12.71
100)	T	n-Butylbenzene	3.596	2.904	2.958	2.670	2.572	2.625	2.613	2.593	2.817	12.33

(#) = Out of Range

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\21\
Data File : 03211201.D
Acq On : 21 Mar 2012 4:13
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 21 07:38:45 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	83	-0.02
2	T	Propene	2.102	2.230	-6.1	80	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.371	11.0	83	0.00
4	T	Chloromethane	2.449	2.229	9.0	81	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.253	14.2	78	0.00
6	T	Vinyl Chloride	2.333	2.088	10.5	82	0.00
7	T	1,3-Butadiene	1.743	1.698	2.6	84	-0.01
8	T	Bromomethane	1.252	1.103	11.9	80	0.00
9	T	Chloroethane	1.217	1.086	10.8	83	0.00
10	T	Ethanol	1.239	1.182	4.6	90	-0.07
11	T	Acetonitrile	2.825	2.652	6.1	86	-0.05
12	T	Acrolein	0.897	0.782	12.8	80	-0.02
13	T	Acetone	1.161	1.046	9.9	86	-0.05
14	T	Trichlorofluoromethane	2.277	2.123	6.8	83	0.00
15	T	2-Propanol (Isopropanol)	3.443	2.957	14.1	89	-0.05
16	T	Acrylonitrile	1.916	1.850	3.4	85	-0.03
17	T	1,1-Dichloroethene	1.293	1.194	7.7	81	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.371	11.6	78	-0.03
19	T	Methylene Chloride	1.421	1.258	11.5	82	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.357	-4.5	85	-0.02
21	T	Trichlorotrifluoroethane	1.171	1.062	9.3	80	0.00
22	T	Carbon Disulfide	5.030	4.631	7.9	82	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.980	4.8	84	-0.01
24	T	1,1-Dichloroethane	2.514	2.403	4.4	84	-0.02
25	T	Methyl tert-Butyl Ether	4.378	4.257	2.8	85	0.00
26	T	Vinyl Acetate	0.403	0.410	-1.7	83	-0.03
27	T	2-Butanone (MEK)	0.986	0.978	0.8	84	-0.03
28	T	cis-1,2-Dichloroethene	1.960	1.861	5.1	84	-0.02
29	T	Diisopropyl Ether	1.239	1.185	4.4	83	-0.01
30	T	Ethyl Acetate	0.546	0.540	1.1	84	-0.03
31	T	n-Hexane	2.855	2.629	7.9	83	-0.01
32	T	Chloroform	2.206	2.043	7.4	83	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.659	-6.8	90	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.885	7.9	84	-0.01
35	T	Ethyl tert-Butyl Ether	1.821	1.752	3.8	83	-0.01
36	T	1,2-Dichloroethane	1.798	1.746	2.9	85	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	87	0.00
38	T	1,1,1-Trichloroethane	0.451	0.419	7.1	84	0.00

EM 3/21/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\21\
Data File : 03211201.D
Acq On : 21 Mar 2012 4:13
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 21 07:38:45 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.195	4.4	84	-0.02
40	T	1-Butanol	0.323	0.351	-8.7	91	-0.05
41	T	Benzene	1.258	1.108	11.9	83	-0.02
42	T	Carbon Tetrachloride	0.352	0.330	6.2	81	-0.01
43	T	Cyclohexane	0.539	0.483	10.4	84	-0.02
44	T	tert-Amyl Methyl Ether	0.939	0.885	5.8	84	-0.02
45	T	1,2-Dichloropropane	0.334	0.306	8.4	84	-0.01
46	T	Bromodichloromethane	0.384	0.360	6.3	83	-0.01
47	T	Trichloroethene	0.355	0.306	13.8	81	-0.01
48	T	1,4-Dioxane	0.260	0.240	7.7	85	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.440	7.5	85	-0.01
50	T	Methyl Methacrylate	0.141	0.136	3.5	83	-0.02
51	T	n-Heptane	0.361	0.337	6.6	85	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.482	4.0	84	0.00
53	T	4-Methyl-2-pentanone	0.305	0.303	0.7	87	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.437	0.0	83	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.269	7.9	82	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	87	0.00
57	S	Toluene-d8 (SS2)	2.306	2.280	1.1	86	0.00
58	T	Toluene	2.793	2.457	12.0	83	-0.01
59	T	2-Hexanone	1.490	1.438	3.5	88	-0.02
60	T	Dibromochloromethane	0.638	0.606	5.0	81	0.00
61	T	1,2-Dibromoethane	0.688	0.621	9.7	81	-0.01
62	T	n-Butyl Acetate	1.839	1.765	4.0	87	-0.01
63	T	n-Octane	0.645	0.625	3.1	89	-0.01
64	T	Tetrachloroethene	0.848	0.719	15.2	80	0.00
65	T	Chlorobenzene	1.780	1.542	13.4	82	0.00
66	T	Ethylbenzene	3.030	2.707	10.7	83	0.00
67	T	m- & p-Xylenes	2.419	2.215	8.4	85	-0.02
68	T	Bromoform	0.568	0.556	2.1	81	-0.01
69	T	Styrene	1.881	1.754	6.8	84	-0.01
70	T	o-Xylene	2.550	2.308	9.5	84	-0.01
71	T	n-Nonane	1.681	1.571	6.5	85	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.066	8.1	83	-0.02
73	S	Bromofluorobenzene (SS3)	0.777	0.752	3.2	84	0.00
74	T	Cumene	3.299	2.988	9.4	86	-0.01
75	T	alpha-Pinene	1.611	1.480	8.1	81	-0.01
76	T	n-Propylbenzene	4.039	3.645	9.8	84	0.00

EM 3/21/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\21\
Data File : 03211201.D
Acq On : 21 Mar 2012 4:13
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 21 07:38:45 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.881	10.1	84	-0.01
78	T	4-Ethyltoluene	3.133	2.806	10.4	82	-0.02
79	T	1,3,5-Trimethylbenzene	2.600	2.325	10.6	83	-0.01
80	T	alpha-Methylstyrene	1.436	1.326	7.7	82	-0.01
81	T	2-Ethyltoluene	3.254	2.901	10.8	83	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.417	9.3	83	-0.02
83	T	n-Decane	1.699	1.581	6.9	84	-0.01
84	T	Benzyl Chloride	1.948	2.028	-4.1	86	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.306	18.7	80	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.324	19.7	80	-0.02
87	T	sec-Butylbenzene	3.571	3.214	10.0	84	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.220	9.4	83	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.461	8.5	83	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.292	15.6	81	-0.01
91	T	d-Limonene	1.067	1.038	2.7	84	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.488	5.6	81	-0.01
93	T	n-Undecane	1.678	1.592	5.1	85	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.982	12.5	80	-0.01
95	T	Naphthalene	3.881	3.509	9.6	82	-0.01
96	T	n-Dodecane	1.613	1.592	1.3	88	0.00
97	T	Hexachlorobutadiene	0.704	0.608	13.6	80	0.00
98	T	Cyclohexanone	0.986	1.003	-1.7	91	-0.02
99	T	tert-Butylbenzene	2.723	2.453	9.9	84	-0.02
100	T	n-Butylbenzene	2.817	2.521	10.5	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

EM 3/21/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\22\
Data File : 03221201.D
Acq On : 22 Mar 2012 2:49
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 22 08:55:06 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	86	-0.01
2	T	Propene	2.102	2.177	-3.6	81	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.284	14.3	83	0.00
4	T	Chloromethane	2.449	2.142	12.5	80	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.223	16.2	79	0.00
6	T	Vinyl Chloride	2.333	2.030	13.0	82	0.00
7	T	1,3-Butadiene	1.743	1.690	3.0	86	0.00
8	T	Bromomethane	1.252	1.088	13.1	82	0.00
9	T	Chloroethane	1.217	1.072	11.9	84	0.00
10	T	Ethanol	1.239	1.208	2.5	94	-0.07
11	T	Acetonitrile	2.825	2.612	7.5	87	-0.05
12	T	Acrolein	0.897	0.768	14.4	81	-0.02
13	T	Acetone	1.161	1.021	12.1	86	-0.05
14	T	Trichlorofluoromethane	2.277	2.085	8.4	84	0.00
15	T	2-Propanol (Isopropanol)	3.443	2.917	15.3	90	-0.05
16	T	Acrylonitrile	1.916	1.802	5.9	85	-0.03
17	T	1,1-Dichloroethene	1.293	1.158	10.4	81	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.266	14.3	78	-0.03
19	T	Methylene Chloride	1.421	1.230	13.4	83	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.332	-3.4	87	-0.01
21	T	Trichlorotrifluoroethane	1.171	1.050	10.3	82	0.00
22	T	Carbon Disulfide	5.030	4.560	9.3	83	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.936	6.9	85	-0.01
24	T	1,1-Dichloroethane	2.514	2.368	5.8	85	-0.02
25	T	Methyl tert-Butyl Ether	4.378	4.176	4.6	85	0.00
26	T	Vinyl Acetate	0.403	0.404	-0.2	84	-0.03
27	T	2-Butanone (MEK)	0.986	0.952	3.4	85	-0.03
28	T	cis-1,2-Dichloroethene	1.960	1.817	7.3	85	-0.01
29	T	Diisopropyl Ether	1.239	1.163	6.1	84	0.00
30	T	Ethyl Acetate	0.546	0.535	2.0	86	-0.02
31	T	n-Hexane	2.855	2.576	9.8	84	0.00
32	T	Chloroform	2.206	2.014	8.7	84	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.633	-5.2	91	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.871	9.4	85	-0.01
35	T	Ethyl tert-Butyl Ether	1.821	1.717	5.7	84	-0.01
36	T	1,2-Dichloroethane	1.798	1.691	6.0	85	-0.01
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
38	T	1,1,1-Trichloroethane	0.451	0.413	8.4	84	0.00

EM 3/22/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\22\
Data File : 03221201.D
Acq On : 22 Mar 2012 2:49
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 22 08:55:06 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.193	5.4	85	-0.02
40	T	1-Butanol	0.323	0.355	-9.9	94	-0.05
41	T	Benzene	1.258	1.095	13.0	84	-0.01
42	T	Carbon Tetrachloride	0.352	0.327	7.1	82	-0.01
43	T	Cyclohexane	0.539	0.478	11.3	84	-0.01
44	T	tert-Amyl Methyl Ether	0.939	0.875	6.8	84	-0.01
45	T	1,2-Dichloropropane	0.334	0.301	9.9	84	-0.01
46	T	Bromodichloromethane	0.384	0.359	6.5	84	0.00
47	T	Trichloroethene	0.355	0.302	14.9	81	-0.01
48	T	1,4-Dioxane	0.260	0.239	8.1	86	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.417	9.0	86	-0.01
50	T	Methyl Methacrylate	0.141	0.134	5.0	84	-0.02
51	T	n-Heptane	0.361	0.333	7.8	85	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.480	4.4	85	0.00
53	T	4-Methyl-2-pentanone	0.305	0.298	2.3	87	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.432	1.1	84	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.265	9.2	82	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	90	0.00
57	S	Toluene-d8 (SS2)	2.306	2.283	1.0	89	0.00
58	T	Toluene	2.793	2.406	13.9	84	0.00
59	T	2-Hexanone	1.490	1.411	5.3	89	-0.02
60	T	Dibromochloromethane	0.638	0.592	7.2	82	0.00
61	T	1,2-Dibromoethane	0.688	0.603	12.4	82	-0.01
62	T	n-Butyl Acetate	1.839	1.728	6.0	88	-0.01
63	T	n-Octane	0.645	0.608	5.7	89	-0.01
64	T	Tetrachloroethene	0.848	0.698	17.7	80	0.00
65	T	Chlorobenzene	1.780	1.521	14.6	83	0.00
66	T	Ethylbenzene	3.030	2.626	13.3	83	0.00
67	T	m- & p-Xylenes	2.419	2.167	10.4	86	-0.02
68	T	Bromoform	0.568	0.544	4.2	82	0.00
69	T	Styrene	1.881	1.704	9.4	85	-0.01
70	T	o-Xylene	2.550	2.242	12.1	85	-0.01
71	T	n-Nonane	1.681	1.532	8.9	86	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.040	10.3	83	-0.02
73	S	Bromofluorobenzene (SS3)	0.777	0.770	0.9	89	0.00
74	T	Cumene	3.299	2.905	11.9	87	0.00
75	T	alpha-Pinene	1.611	1.440	10.6	82	0.00
76	T	n-Propylbenzene	4.039	3.532	12.6	84	0.00

EM 3/22/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\22\
Data File : 03221201.D
Acq On : 22 Mar 2012 2:49
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 22 08:55:06 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.780	13.3	84	-0.01
78	T	4-Ethyltoluene	3.133	2.755	12.1	83	-0.01
79	T	1,3,5-Trimethylbenzene	2.600	2.260	13.1	84	-0.01
80	T	alpha-Methylstyrene	1.436	1.281	10.8	82	-0.01
81	T	2-Ethyltoluene	3.254	2.816	13.5	83	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.332	12.5	83	-0.01
83	T	n-Decane	1.699	1.533	9.8	85	-0.01
84	T	Benzyl Chloride	1.948	2.018	-3.6	88	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.274	20.7	81	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.279	22.4	80	-0.01
87	T	sec-Butylbenzene	3.571	3.095	13.3	83	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.108	12.5	83	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.390	11.2	83	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.254	18.1	81	-0.01
91	T	d-Limonene	1.067	1.005	5.8	84	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.476	7.9	81	-0.01
93	T	n-Undecane	1.678	1.540	8.2	85	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.940	16.2	79	-0.01
95	T	Naphthalene	3.881	3.420	11.9	82	-0.01
96	T	n-Dodecane	1.613	1.535	4.8	87	0.00
97	T	Hexachlorobutadiene	0.704	0.582	17.3	79	0.00
98	T	Cyclohexanone	0.986	0.974	1.2	91	-0.02
99	T	tert-Butylbenzene	2.723	2.366	13.1	84	-0.01
100	T	n-Butylbenzene	2.817	2.442	13.3	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

EM 3/22/12

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\22\
Data File : 03221204.D
Acq On : 22 Mar 2012 5:21 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 22 06:57:51 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	97	0.00
2	T	Dichlorodifluoromethane (CF	3.313	3.019	8.9	89	0.00
3	T	Chloromethane	0.949	0.890	6.2	95	0.00
4	T	Vinyl Chloride	2.615	2.487	4.9	92	0.00
5	T	Bromomethane	1.407	1.417	-0.7	102	0.00
6	T	Chloroethane	1.340	1.295	3.4	97	0.00
7	T	Acetone	1.208	1.294	-7.1	103	0.00
8	T	Trichlorofluoromethane	2.761	2.600	5.8	93	0.00
9	T	1,1-Dichloroethene	1.376	1.351	1.8	99	0.00
10	T	Methylene Chloride	1.633	1.511	7.5	95	0.00
11	T	Trichlorotrifluoroethane	1.220	1.203	1.4	99	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.483	6.6	95	0.00
13	T	1,1-Dichloroethane	2.980	2.876	3.5	95	0.00
14	T	Methyl tert-Butyl Ether	4.613	4.232	8.3	94	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.557	2.1	99	0.00
16	T	Chloroform	2.636	2.617	0.7	98	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.977	0.3	96	0.00
18	T	1,2-Dichloroethane	2.293	2.073	9.6	90	0.00
19	T	1,1,1-Trichloroethane	2.291	2.199	4.0	97	0.00
20	T	Benzene	6.222	6.262	-0.6	100	0.00
21	T	Carbon Tetrachloride	1.790	1.688	5.7	97	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	106	0.00
23	T	1,2-Dichloropropane	0.366	0.322	12.0	96	0.00
24	T	Bromodichloromethane	0.439	0.383	12.8	96	0.00
25	T	Trichloroethene	0.343	0.303	11.7	99	0.00
26	T	1,4-Dioxane	0.263	0.233	11.4	102	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.474	9.0	100	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.403	9.2	101	0.00
29	T	1,1,2-Trichloroethane	0.276	0.252	8.7	101	0.00
30	S	Toluene-d8 (SS2)	1.056	1.191	-12.8	120	0.00
31	T	Toluene	1.374	1.230	10.5	102	0.00
32	T	1,2-Dibromoethane	0.340	0.316	7.1	103	0.00
33	T	Tetrachloroethene	0.359	0.336	6.4	104	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	105	0.00
35	T	Chlorobenzene	3.844	3.647	5.1	104	0.00
36	T	Ethylbenzene	6.608	5.864	11.3	98	0.00
37	T	m,p-Xylene	5.125	4.630	9.7	99	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\22\
Data File : 03221204.D
Acq On : 22 Mar 2012 5:21 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 22 06:57:51 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	5.028	8.4	102	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.469	3.6	107	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.947	-16.2	122	0.00
41	T	1,3-Dichlorobenzene	3.015	3.092	-2.6	115	0.00
42	T	1,4-Dichlorobenzene	3.034	3.052	-0.6	115	0.00
43	T	1,2-Dichlorobenzene	2.886	2.957	-2.5	117	0.00
44	T	1,2,4-Trichlorobenzene	1.907	2.112	-10.7	135	0.00
45	T	Naphthalene	6.232	7.427	-19.2	153	0.00
46	T	Hexachlorobutadiene	1.216	1.227	-0.9	122	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

KR 3/22/12

Response Factor Report MS07

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
1)	I	Bromochloromethan	ISTD										
2)	T	Dichlorodifluorom	3.784	3.527	3.467	3.822	3.279	2.986	2.875	3.155	2.920	3.313	10.83
3)	T	Chloromethane		1.470	0.956	1.190	0.904	0.778	0.569	0.897	0.827	0.949	28.81
4)	T	Vinyl Chloride	2.802	2.749	2.588	3.044	2.597	2.406	2.314	2.588	2.446	2.615	8.57
5)	T	Bromomethane	1.894	1.496	1.211	1.613	1.335	1.208	1.105	1.433	1.367	1.407	17.11
6)	T	Chloroethane	1.511	1.416	1.357	1.517	1.295	1.237	1.195	1.312	1.224	1.340	8.92
7)	T	Acetone				1.548	1.214	1.122	1.080	1.193	1.090	1.208	14.52
8)	T	Trichlorofluorome	3.051	2.887	2.831	3.145	2.692	2.565	2.447	2.691	2.536	2.761	8.59
9)	T	1,1-Dichloroethen	1.591	1.440	1.366	1.547	1.322	1.229	1.214	1.385	1.295	1.376	9.52
10)	T	Methylene Chlorid		2.134	1.795	1.866	1.536	1.426	1.404	1.494	1.411	1.633	16.43
11)	T	Trichlorotrifluor	1.408	1.325	1.295	1.376	1.169	1.081	1.062	1.170	1.097	1.220	10.87
12)	T	trans-1,2-Dichlor	1.972	1.710	1.589	1.762	1.505	1.406	1.393	1.512	1.439	1.588	12.18
13)	T	1,1-Dichloroethan	3.265	3.020	3.016	3.383	2.925	2.756	2.681	2.937	2.841	2.980	7.60
14)	T	Methyl tert-Butyl	5.168	4.740	4.762	5.045	4.335	4.137	4.166	4.690	4.471	4.613	7.90
15)	T	cis-1,2-Dichloroe	1.885	1.626	1.630	1.776	1.524	1.434	1.388	1.575	1.482	1.591	10.09
16)	T	Chloroform			3.041	3.257	2.586	2.390	2.280	2.524	2.374	2.636	14.03
17)	S	1,2-Dichloroethan	2.000	2.002	2.032	2.018	1.989	1.973	1.960	1.938	1.932	1.983	1.75
18)	T	1,2-Dichloroethan	2.582	2.460	2.375	2.604	2.222	2.090	1.988	2.222	2.094	2.293	9.73
19)	T	1,1,1-Trichloroet	2.587	2.431	2.340	2.573	2.191	2.059	2.007	2.278	2.150	2.291	9.18
20)	T	Benzene			7.536	7.534	6.055	5.665	5.395	5.903	5.468	6.222	14.88
21)	T	Carbon Tetrachlor	2.280	1.842	1.769	1.950	1.676	1.579	1.549	1.771	1.692	1.790	12.41
22)	I	1,4-Difluorobenze	ISTD										
23)	T	1,2-Dichloropropa	0.417	0.397	0.373	0.409	0.354	0.331	0.319	0.358	0.336	0.366	9.68
24)	T	Bromodichlorometh	0.491	0.464	0.436	0.489	0.420	0.398	0.394	0.447	0.416	0.439	8.26
25)	T	Trichloroethene	0.418	0.379	0.349	0.390	0.324	0.305	0.287	0.326	0.307	0.343	12.96
26)	T	1,4-Dioxane	0.324	0.290	0.270	0.278	0.242	0.231	0.227	0.258	0.243	0.263	11.99
27)	T	cis-1,3-Dichlorop	0.567	0.523	0.508	0.540	0.499	0.484	0.488	0.559	0.522	0.521	5.67
28)	T	trans-1,3-Dichlor	0.457	0.434	0.431	0.444	0.419	0.409	0.417	0.505	0.482	0.444	7.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
29)	T	1,1,2-Trichloroet	0.315	0.296	0.286	0.305	0.263	0.248	0.242	0.274	0.257	0.276	9.32
30)	S	Toluene-d8 (SS2)	1.053	1.071	1.054	1.047	1.051	1.052	1.071	1.060	1.049	1.056	0.84
31)	T	Toluene	1.782	1.541	1.420	1.485	1.269	1.198	1.177	1.307	1.186	1.374	14.76
32)	T	1,2-Dibromoethane	0.379	0.362	0.345	0.362	0.323	0.307	0.304	0.351	0.331	0.340	7.65
33)	T	Tetrachloroethene	0.423	0.394	0.371	0.400	0.341	0.320	0.311	0.347	0.326	0.359	11.03
34)	I	Chlorobenzene-d5	ISTD										
35)	T	Chlorobenzene	4.581	4.172	4.017	4.308	3.688	3.469	3.311	3.705	3.345	3.844	11.68
36)	T	Ethylbenzene	7.604	7.082	6.707	7.235	6.297	6.070	5.915	6.682	5.878	6.608	9.30
37)	T	m,p-Xylene	5.861	5.347	5.132	5.536	4.930	4.777	4.719	5.268	4.558	5.125	8.24
38)	T	o-Xylene	6.505	5.826	5.526	5.889	5.188	4.995	4.950	5.594	4.932	5.490	9.67
39)	T	1,1,2,2-Tetrachlo	2.655	2.674	2.710	2.646	2.437	2.371	2.298	2.761	2.498	2.561	6.40
40)	S	Bromofluorobenzen	1.712	1.701	1.695	1.697	1.683	1.680	1.670	1.642	1.593	1.675	2.20
41)	T	1,3-Dichlorobenze	3.304	3.261	3.222	3.204	2.835	2.719	2.608	3.138	2.846	3.015	8.71
42)	T	1,4-Dichlorobenze	3.470	3.303	3.208	3.208	2.803	2.671	2.579	3.174	2.891	3.034	10.13
43)	T	1,2-Dichlorobenze	3.271	3.123	3.112	3.026	2.662	2.536	2.418	3.053	2.772	2.886	10.31
44)	T	1,2,4-Trichlorobe	2.184	2.118	2.169	1.753	1.641	1.608	1.575	2.139	1.978	1.907	13.66
45)	T	Naphthalene	6.857	6.355	6.704	5.143	5.107	5.172	5.297	8.126	7.328	6.232	17.82
46)	T	Hexachlorobutadie	1.486	1.423	1.403	1.217	1.055	1.013	0.975	1.227	1.145	1.216	15.40

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\23\
Data File : 03231204.D
Acq On : 23 Mar 2012 5:21
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 23 06:42:58 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	98	0.00
2	T	Dichlorodifluoromethane (CF	3.313	2.906	12.3	87	0.00
3	T	Chloromethane	0.949	0.826	13.0	89	0.00
4	T	Vinyl Chloride	2.615	2.307	11.8	87	0.00
5	T	Bromomethane	1.407	1.342	4.6	98	0.00
6	T	Chloroethane	1.340	1.216	9.3	92	0.00
7	T	Acetone	1.208	1.242	-2.8	100	0.00
8	T	Trichlorofluoromethane	2.761	2.447	11.4	89	0.00
9	T	1,1-Dichloroethene	1.376	1.302	5.4	96	0.00
10	T	Methylene Chloride	1.633	1.454	11.0	93	0.00
11	T	Trichlorotrifluoroethane	1.220	1.190	2.5	100	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.441	9.3	94	0.00
13	T	1,1-Dichloroethane	2.980	2.739	8.1	92	0.00
14	T	Methyl tert-Butyl Ether	4.613	4.149	10.1	94	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.514	4.8	97	0.00
16	T	Chloroform	2.636	2.525	4.2	95	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.948	1.8	96	0.00
18	T	1,2-Dichloroethane	2.293	1.984	13.5	87	0.00
19	T	1,1,1-Trichloroethane	2.291	2.107	8.0	94	0.00
20	T	Benzene	6.222	6.119	1.7	99	0.00
21	T	Carbon Tetrachloride	1.790	1.600	10.6	93	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	106	0.00
23	T	1,2-Dichloropropane	0.366	0.315	13.9	94	0.00
24	T	Bromodichloromethane	0.439	0.369	15.9	93	0.00
25	T	Trichloroethene	0.343	0.295	14.0	97	0.00
26	T	1,4-Dioxane	0.263	0.226	14.1	99	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.455	12.7	97	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.391	11.9	99	0.00
29	T	1,1,2-Trichloroethane	0.276	0.239	13.4	96	0.00
30	S	Toluene-d8 (SS2)	1.056	1.185	-12.2	120	0.00
31	T	Toluene	1.374	1.185	13.8	99	0.00
32	T	1,2-Dibromoethane	0.340	0.302	11.2	99	0.00
33	T	Tetrachloroethene	0.359	0.322	10.3	100	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	105	0.00
35	T	Chlorobenzene	3.844	3.553	7.6	101	0.00
36	T	Ethylbenzene	6.608	5.962	9.8	99	0.00
37	T	m,p-Xylene	5.125	4.745	7.4	101	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\23\
Data File : 03231204.D
Acq On : 23 Mar 2012 5:21
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Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
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Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	5.051	8.0	102	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.386	6.8	102	0.00
40	S	Bromofluorobenzene (SS3)	1.675	2.041	-21.9	127	0.00
41	T	1,3-Dichlorobenzene	3.015	3.016	-0.0	111	0.00
42	T	1,4-Dichlorobenzene	3.034	2.996	1.3	112	0.00
43	T	1,2-Dichlorobenzene	2.886	2.910	-0.8	114	0.00
44	T	1,2,4-Trichlorobenzene	1.907	2.116	-11.0	135	0.00
45	T	Naphthalene	6.232	7.511	-20.5	154	0.00
46	T	Hexachlorobutadiene	1.216	1.242	-2.1	123	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

LABORATORY REPORT

March 28, 2012

Christoher Cote
Montana DEQ
1100 N. Last Chance Gulch
Helena, MT 59601

RE: Background Indoor Air Study

Dear Christoher:

Enclosed are the results of the sample submitted to our laboratory on March 14, 2012. For your reference, these analyses have been assigned our service request number P1201004.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-11-2; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA015272011-1; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Kate Aguilera
Project Manager

Client: Montana DEQ CAS Project No: P1201004
Project: Background Indoor Air Study

CASE NARRATIVE

The sample was received intact under chain of custody on March 14, 2012 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009.

Volatile Organic Compound Analysis

The samples were also analyzed in SIM and Scan mode for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

DETAIL SUMMARY REPORT

Client: Montana DEQ
Service Request: P1201004
Project ID: Background Indoor Air Study

Date Received: 3/14/2012
Time Received: 10:15

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC Cans	TO-15 - VOC SIM
18-1F-031212	P1201004-001	Air	3/13/2012	11:02	AC01843	-2.66	3.59	X	X	X

Columbia Analytical Services

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1201004

Company Name & Address (Reporting Information)
Montana Dept of Env Quality
PO Box 200901
1100 N. Last Chance Gulch
Helena, MT 59620-0901

Project Name: Background Indoor Air Study
Project Number: —

CAS Contact:

Project Manager: Chris Cote

P.O. # / Billing Information: Reference as: Background Indoor Air Study
Bill to: Chris Cote of MDEQ

Phone: 406-841-5078
Fax: 406-841-5050

Email Address for Result Reporting: ccote2@mt.gov; martichbj@edmsmith.com

Sampler (Print & Sign): Aimee Reynolds Aimee J Reynolds

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15	TO-15 SIM	MA-APH	Comments e.g. Actual Preservative or specific instructions
1	18-1F-031212	[redacted]	03/13/12	1102	AC01843	FCA00031	AVG02193	-6.5"	6L	X	X	X	-26 Analyze project-specific list of compounds to project-specific reporting limits

4 of 35

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) X
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: CSU & Excel form

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Aimee J Reynolds	3/13/12				
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 3/14/12	Time: 1015

Cooler / Blank Temperature ____°C

Columbia Analytical Services
Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201004

Project: Background Indoor Air Study

Sample(s) received on: 3/14/12 Date opened: 3/14/12 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201004-001.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **18-1F-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201004
CAS Sample ID: P1201004-001

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01843

Date Collected: 3/13/12
Date Received: 3/14/12
Date Analyzed: 3/22/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.66 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.52

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**450**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**62**	15	
C_9 - C_{10} Aromatic Hydrocarbons	**23**	7.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201004
CAS Sample ID: P120321-MB

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/21/12
Volume(s) Analyzed: 1.00 Liter(s)

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**24.2**	**99**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**24.5**	**98**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**43.8**	**90**	70-130	

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **18-1F-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201004
CAS Sample ID: P1201004-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01843

Date Collected: 3/13/12
Date Received: 3/14/12
Date Analyzed: 3/22/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.66 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**12**	0.76	**7.0**	0.44	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.76	**0.41**	0.15	
74-87-3	Chloromethane	ND	0.76	ND	0.37	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.76	ND	0.11	
75-01-4	Vinyl Chloride	ND	0.76	ND	0.30	
106-99-0	1,3-Butadiene	ND	0.76	ND	0.34	
74-83-9	Bromomethane	ND	0.76	ND	0.20	
75-00-3	Chloroethane	ND	0.76	ND	0.29	
64-17-5	Ethanol	**430**	7.6	**230**	4.0	
75-05-8	Acetonitrile	ND	0.76	ND	0.45	
107-02-8	Acrolein	ND	3.0	ND	1.3	
67-64-1	Acetone	**56**	7.6	**24**	3.2	
75-69-4	Trichlorofluoromethane	**1.2**	0.76	**0.22**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**76**	1.5	**31**	0.62	
107-13-1	Acrylonitrile	ND	0.76	ND	0.35	
75-35-4	1,1-Dichloroethene	ND	0.76	ND	0.19	
75-09-2	Methylene Chloride	**1.5**	0.76	**0.42**	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.76	ND	0.24	
76-13-1	Trichlorotrifluoroethane	ND	0.76	ND	0.099	
75-15-0	Carbon Disulfide	ND	7.6	ND	2.4	
156-60-5	trans-1,2-Dichloroethene	ND	0.76	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.76	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.76	ND	0.21	
108-05-4	Vinyl Acetate	ND	7.6	ND	2.2	
78-93-3	2-Butanone (MEK)	ND	7.6	ND	2.6	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **18-1F-031212** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201004-001

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/14/12
Analyst: Elsa Moctezuma Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01843

Initial Pressure (psig): -2.66 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.76	ND	0.19	
141-78-6	Ethyl Acetate	**15**	1.5	**4.2**	0.42	
110-54-3	n-Hexane	**15**	0.76	**4.1**	0.22	
67-66-3	Chloroform	**1.8**	0.76	**0.36**	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.76	ND	0.26	
107-06-2	1,2-Dichloroethane	ND	0.76	ND	0.19	
71-55-6	1,1,1-Trichloroethane	**11**	0.76	**2.0**	0.14	
71-43-2	Benzene	**11**	0.76	**3.3**	0.24	
56-23-5	Carbon Tetrachloride	ND	0.76	ND	0.12	
110-82-7	Cyclohexane	**3.9**	1.5	**1.1**	0.44	
78-87-5	1,2-Dichloropropane	ND	0.76	ND	0.16	
75-27-4	Bromodichloromethane	ND	0.76	ND	0.11	
79-01-6	Trichloroethene	ND	0.76	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.76	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.37	
142-82-5	n-Heptane	**5.8**	0.76	**1.4**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.76	ND	0.17	
108-10-1	4-Methyl-2-pentanone	**0.80**	0.76	**0.20**	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.76	ND	0.17	
79-00-5	1,1,2-Trichloroethane	ND	0.76	ND	0.14	
108-88-3	Toluene	**63**	0.76	**17**	0.20	
591-78-6	2-Hexanone	ND	0.76	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.76	ND	0.089	
106-93-4	1,2-Dibromoethane	ND	0.76	ND	0.099	
123-86-4	n-Butyl Acetate	**1.3**	0.76	**0.27**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201004
Client Sample ID: **18-1F-031212** CAS Sample ID: P1201004-001
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/14/12
Analyst: Elsa Moctezuma Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01843

Initial Pressure (psig): -2.66 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	**2.3**	0.76	**0.50**	0.16	
127-18-4	Tetrachloroethene	**2.2**	0.76	**0.33**	0.11	
108-90-7	Chlorobenzene	ND	0.76	ND	0.17	
100-41-4	Ethylbenzene	**4.5**	0.76	**1.0**	0.18	
179601-23-1	m,p-Xylenes	**16**	1.5	**3.7**	0.35	
75-25-2	Bromoform	ND	0.76	ND	0.074	
100-42-5	Styrene	ND	0.76	ND	0.18	
95-47-6	o-Xylene	**5.1**	0.76	**1.2**	0.18	
111-84-2	n-Nonane	**1.5**	0.76	**0.29**	0.14	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.76	ND	0.11	
98-82-8	Cumene	ND	0.76	ND	0.15	
80-56-8	alpha-Pinene	**2.0**	0.76	**0.35**	0.14	
103-65-1	n-Propylbenzene	**0.91**	0.76	**0.19**	0.15	
622-96-8	4-Ethyltoluene	**1.5**	0.76	**0.31**	0.15	
108-67-8	1,3,5-Trimethylbenzene	**1.7**	0.76	**0.35**	0.15	
95-63-6	1,2,4-Trimethylbenzene	**5.0**	0.76	**1.0**	0.15	
100-44-7	Benzyl Chloride	ND	0.76	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.76	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.76	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.76	ND	0.13	
5989-27-5	d-Limonene	**16**	0.76	**2.8**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.76	ND	0.079	
120-82-1	1,2,4-Trichlorobenzene	ND	0.76	ND	0.10	
91-20-3	Naphthalene	ND	0.76	ND	0.15	
87-68-3	Hexachlorobutadiene	ND	0.76	ND	0.071	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201004
Client Sample ID: **Method Blank** CAS Sample ID: P120321-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 3/13/12
Analyst: Elsa Moctezuma Date(s) Received: 3/14/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 3/21 - 3/22/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120321-MB	**104**	**102**	**94**	70-130	
Lab Control Sample	P120321-LCS	**107**	**98**	**98**	70-130	
18-1F-031212	P1201004-001	**105**	**98**	**97**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**202**	**102**	54-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**167**	**85**	55-112	
74-87-3	Chloromethane	190	**165**	**87**	66-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**167**	**84**	64-113	
75-01-4	Vinyl Chloride	194	**167**	**86**	68-115	
106-99-0	1,3-Butadiene	204	**197**	**97**	74-142	
74-83-9	Bromomethane	194	**171**	**88**	72-124	
75-00-3	Chloroethane	196	**168**	**86**	69-115	
64-17-5	Ethanol	928	**860**	**93**	67-127	
75-05-8	Acetonitrile	194	**190**	**98**	63-126	
107-02-8	Acrolein	198	**175**	**88**	62-127	
67-64-1	Acetone	1,010	**880**	**87**	67-106	
75-69-4	Trichlorofluoromethane	202	**173**	**86**	66-121	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**308**	**81**	56-112	
107-13-1	Acrylonitrile	198	**194**	**98**	78-128	
75-35-4	1,1-Dichloroethene	212	**190**	**90**	74-116	
75-09-2	Methylene Chloride	206	**177**	**86**	69-103	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**211**	**101**	76-142	
76-13-1	Trichlorotrifluoroethane	206	**184**	**89**	69-118	
75-15-0	Carbon Disulfide	208	**180**	**87**	71-112	
156-60-5	trans-1,2-Dichloroethene	196	**182**	**93**	73-121	
75-34-3	1,1-Dichloroethane	200	**187**	**94**	71-118	
1634-04-4	Methyl tert-Butyl Ether	198	**188**	**95**	72-115	
108-05-4	Vinyl Acetate	952	**937**	**98**	51-150	
78-93-3	2-Butanone (MEK)	206	**196**	**95**	80-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	206	**190**	**92**	73-117	
141-78-6	Ethyl Acetate	398	**375**	**94**	79-126	
110-54-3	n-Hexane	198	**175**	**88**	68-109	
67-66-3	Chloroform	214	**186**	**87**	67-118	
109-99-9	Tetrahydrofuran (THF)	202	**182**	**90**	57-130	
107-06-2	1,2-Dichloroethane	200	**189**	**95**	62-121	
71-55-6	1,1,1-Trichloroethane	198	**178**	**90**	70-116	
71-43-2	Benzene	198	**178**	**90**	66-103	
56-23-5	Carbon Tetrachloride	202	**187**	**93**	68-123	
110-82-7	Cyclohexane	390	**341**	**87**	73-111	
78-87-5	1,2-Dichloropropane	198	**175**	**88**	74-114	
75-27-4	Bromodichloromethane	198	**182**	**92**	75-120	
79-01-6	Trichloroethene	194	**164**	**85**	65-109	
123-91-1	1,4-Dioxane	200	**180**	**90**	74-120	
80-62-6	Methyl Methacrylate	400	**373**	**93**	80-124	
142-82-5	n-Heptane	196	**178**	**91**	75-114	
10061-01-5	cis-1,3-Dichloropropene	188	**177**	**94**	79-120	
108-10-1	4-Methyl-2-pentanone	204	**196**	**96**	79-128	
10061-02-6	trans-1,3-Dichloropropene	210	**204**	**97**	83-131	
79-00-5	1,1,2-Trichloroethane	196	**176**	**90**	76-116	
108-88-3	Toluene	202	**170**	**84**	64-115	
591-78-6	2-Hexanone	222	**203**	**91**	73-120	
124-48-1	Dibromochloromethane	206	**187**	**91**	72-137	
106-93-4	1,2-Dibromoethane	200	**171**	**86**	70-126	
123-86-4	n-Butyl Acetate	220	**201**	**91**	65-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120321-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/21/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	200	**184**	**92**	72-118	
127-18-4	Tetrachloroethene	184	**149**	**81**	63-123	
108-90-7	Chlorobenzene	202	**167**	**83**	65-117	
100-41-4	Ethylbenzene	198	**168**	**85**	69-118	
179601-23-1	m,p-Xylenes	392	**342**	**87**	68-119	
75-25-2	Bromoform	208	**180**	**87**	79-150	
100-42-5	Styrene	200	**178**	**89**	74-127	
95-47-6	o-Xylene	194	**167**	**86**	68-118	
111-84-2	n-Nonane	196	**175**	**89**	72-116	
79-34-5	1,1,2,2-Tetrachloroethane	192	**163**	**85**	72-135	
98-82-8	Cumene	190	**163**	**86**	68-119	
80-56-8	alpha-Pinene	186	**165**	**89**	70-123	
103-65-1	n-Propylbenzene	192	**163**	**85**	69-119	
622-96-8	4-Ethyltoluene	198	**167**	**84**	68-121	
108-67-8	1,3,5-Trimethylbenzene	200	**172**	**86**	67-118	
95-63-6	1,2,4-Trimethylbenzene	194	**172**	**89**	66-122	
100-44-7	Benzyl Chloride	200	**193**	**97**	73-144	
541-73-1	1,3-Dichlorobenzene	200	**157**	**79**	64-122	
106-46-7	1,4-Dichlorobenzene	206	**153**	**74**	65-125	
95-50-1	1,2-Dichlorobenzene	198	**156**	**79**	63-128	
5989-27-5	d-Limonene	200	**189**	**95**	72-126	
96-12-8	1,2-Dibromo-3-chloropropane	196	**173**	**88**	72-139	
120-82-1	1,2,4-Trichlorobenzene	196	**158**	**81**	65-139	
91-20-3	Naphthalene	172	**142**	**83**	60-142	
87-68-3	Hexachlorobutadiene	202	**161**	**80**	58-137	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **18-1F-031212** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201004-001

Test Code: EPA TO-15 SIM Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/14/12
Analyst: Karen Ryan Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01843

Initial Pressure (psig): -2.66 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.038	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.38**	0.038	**0.094**	0.0094	
71-43-2	Benzene	**11**	0.11	**3.3**	0.036	
79-01-6	Trichloroethene	**0.087**	0.038	**0.016**	0.0071	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.028	
127-18-4	Tetrachloroethene	**2.3**	0.038	**0.34**	0.0056	
100-41-4	Ethylbenzene	**3.9**	0.15	**0.89**	0.035	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.038	ND	0.0055	
91-20-3	Naphthalene	**0.57**	0.15	**0.11**	0.029	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201004

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date(s) Collected: 3/13/12
Analyst: Karen Ryan Date(s) Received: 3/14/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 3/22/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120322-MB	**102**	**116**	**110**	70-130	
Lab Control Sample	P120322-LCS	**103**	**115**	**114**	70-130	
18-1F-031212	P1201004-001	**98**	**112**	**97**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201004
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120322-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/22/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**3.45**	**89**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**3.48**	**87**	51-140	
71-43-2	Benzene	3.96	**3.89**	**98**	56-125	
79-01-6	Trichloroethene	3.88	**3.29**	**85**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**3.39**	**86**	49-137	
127-18-4	Tetrachloroethene	3.68	**3.22**	**88**	58-134	
100-41-4	Ethylbenzene	3.96	**3.23**	**82**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**3.33**	**87**	53-148	
91-20-3	Naphthalene	3.44	**3.35**	**97**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Massachusetts APH ICAL Method: M8011412A.M ICAL Date: 1/14/12 Instrument ID: MS08

Hydrocarbon Ranges

	areas							masses					
C5-C8 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopentane	60478	112606	488243	2480105	4710733	9222808		0.520	1.04	5.20	26.0	52.0	104
n-Hexane	59953	110631	507126	2577865	4931102	9678199		0.490	0.98	4.90	24.5	49.0	98
Cyclohexane	63203	115230	548910	2874726	5524402	10890911		0.500	1.00	5.00	25.0	50.0	100
2,3-Dimethylpentane	68648	127222	585183	2998017	5742104	11319597		0.520	1.04	5.20	26.0	52.0	104
n-Heptane	66143	120286	558074	2884817	5509801	10873046		0.490	0.98	4.90	24.5	49.0	98
n-Octane	76169	137829	632891	3286017	6205035	12092514		0.505	1.01	5.05	25.3	50.5	101
area sum:	**394594**	**723804**	**3320427**	**17101547**	**32623177**	**64077075**	**sum:**	**3.025**	**6.050**	**30.25**	**151.30**	**302.50**	**605.00**
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
2,3-Dimethylheptane	78780	147724	682518	3501487	6691428	13148840		0.485	0.97	4.85	24.3	48.5	97
n-Nonane	77464	140680	662221	3417128	6555165	12940625		0.485	0.97	4.85	24.3	48.5	97
n-Decane	80593	147724	705259	3651028	7021424	13870530		0.490	0.98	4.90	24.5	49.0	98
Butylcyclohexane	88915	166782	776903	4026931	7749936	15415340		0.495	0.99	4.95	24.8	49.5	99
n-Undecane	80867	152557	719618	3772331	7263077	14385881		0.480	0.96	4.80	24.0	48.0	96
n-Dodecane	70045	143746	687255	3673524	7115012	14041583		0.500	1.00	5.00	25.0	50.0	100
area sum:	**476664**	**899213**	**4233774**	**22042429**	**42396042**	**83802799**	**sum:**	**2.935**	**5.870**	**29.35**	**146.90**	**293.50**	**587.00**
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopropylbenzene	10658	19169	87439	448287	849124	1695737		0.485	0.97	4.85	24.3	48.5	97
3-Ethyltoluene	11805	20564	97823	504510	977020	1973178		0.470	0.94	4.70	23.5	47.0	94
1,3,5-Trimethylbenzene	15759	29260	134073	700133	1353305	2726630		0.490	0.98	4.90	24.5	49.0	98
1,2,3-Trimethylbenzene	17195	31328	143473	757946	1493373	3063059		0.495	0.99	4.95	24.8	49.5	99
p-Isopropyltoluene	9490	18116	83401	440962	872799	1814314		0.460	0.92	4.60	23.0	46.0	92
area sum:	**64907**	**118437**	**546209**	**2851838**	**5545621**	**11272918**	**sum:**	**2.400**	**4.800**	**24.00**	**120.10**	**240.00**	**480.00**

Massachusetts APH **ICAL:** M8011412A.M **ICAL Date:** 1/14/12 **Instrument ID:** MS08

Hydrocarbon Ranges

areas

Internal Standards (TIC)	0.5	1	5	25	50	100
Bromochloromethane (IS1)	1312793	1307309	1293586	1289283	1284194	1283817
1,4-Difluorobenzene (IS2)	2547079	2541159	2512498	2475255	2422119	2352159
Chlorobenzene-d5 (IS3)	2929189	2913374	2880258	2895080	2878314	2908396
Internal Standards (EIC)						
Bromochloromethane (IS1)	249696	247899	245985	245585	244327	243561
1,4-Difluorobenzene (IS2)	1153657	1149947	1133233	1136223	1127203	1138730
Chlorobenzene-d5 (IS3)	1007702	1004638	991212	992925	982812	986950
Surrogates (TIC)	**0.5**	**1**	**5**	**25**	**50**	**100**
1,2-Dichloroethane-d4	1162497	1154617	1105630	1126201	1103958	1095945
Toluene-d8	3508018	3490493	3455382	3466688	3437986	3457323
p-Bromofluorobenzene	2298220	2284797	2197239	2227396	2192159	2197999

RRFs

C5-C8 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	2.8268	2.6009	2.4215	2.4870	2.3919	2.3252	2.509	7.24
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	4.0291	3.8120	3.6383	3.7780	3.6744	3.6163	3.758	4.09
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	0.6709	0.6140	0.5740	0.5979	0.5878	0.5949	0.607	5.63

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **03211203.D**
Data File Path: **J:\MS08\Data\2012_03\21**
Operator: **EM**
Date Acquired: **3/21/12 5:39**
Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15/MAPH CCV STD**
Misc Info: **S25-03151201/S25-03161202**
Instrument Name: **MS08**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	15.89	1102904
16)	Chlorobenzene-d5 (IS3)	21.69	947969

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	8.19	2464516	2.569	154.9	**2.39**	**-30**	**30**	Pass
4)	n-Hexane	13.08	2578864						
9)	Cyclohexane	15.81	2862780						
10)	2,3-Dimethylpentane	16.17	3020819	**Spike**	**ICAL**				
11)	n-Heptane	17.35	2903399	**Amt (ng)**	**RRF**				
14)	n-Octane	20.69	3316542	151.30	2.509				
			17146920						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	22.31	3515879	3.955	154.6	**5.23**	**-30**	**30**	Pass
19)	n-Nonane	23.30	3434658						
25)	n-Decane	25.26	3663558						
28)	Butylcyclohexane	25.99	4002852	**Spike**	**ICAL**				
29)	n-Undecane	26.76	3775128	**Amt (ng)**	**RRF**				
30)	n-Dodecane	28.00	3635722	146.90	3.758				
			22027797						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	23.78	446789	0.612	121.1	**0.80**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	24.52	492493						
24)	1,3,5-Trimethylbenzene	24.66	681321						
26)	p-Isopropyltoluene	25.68	426000	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	25.68	739855	**Amt (ng)**	**RRF**				
			2786458	120.1	0.607				

EM 3/21/12

Response Factor Report MS08

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Dec 12 09:45:45 2011
Response Via : Initial Calibration

Calibration Files
0.1 =12091118.D 0.2 =12091119.D 0.5 =12091120.D 1.0 =12091121.D 5.0 =12091122.D 25 =12091123.D
50 =12091124.D 100 =12091125.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------									
2)	T	Propene	2.487	1.965	1.952	1.692	2.194	2.303	2.185	2.036	2.102	11.62
3)	T	Dichlorodifluo...	3.545	2.805	2.940	2.748	2.432	2.361	2.278	2.199	2.664	16.73
4)	T	Chloromethane	3.290	2.811	2.875	2.512	2.176	2.286	1.977	1.664	2.449	21.62
5)	T	1,2-Dichloro-1...	1.901	1.661	1.575	1.458	1.359	1.333	1.200	1.190	1.460	16.68
6)	T	Vinyl Chloride	2.906	2.590	2.631	2.374	2.145	2.129	1.950	1.939	2.333	15.07
7)	T	1,3-Butadiene	2.145	1.788	1.790	1.718	1.581	1.689	1.621	1.616	1.743	10.33
8)	T	Bromomethane	1.687	1.328	1.349	1.212	1.094	1.142	1.111	1.092	1.252	16.21
9)	T	Chloroethane	1.671	1.259	1.333	1.193	1.101	1.091	1.046	1.044	1.217	17.29
10)	T	Ethanol	2.040	1.345	1.186	1.085	1.022	1.096	1.076	1.064	1.239	27.34
11)	T	Acetonitrile	4.365	2.973	2.723	2.546	2.480	2.562	2.482	2.468	2.825	22.85
12)	T	Acrolein	1.328	0.931	0.907	0.861	0.772	0.814	0.789	0.779	0.897	20.48
13)	T	Acetone	1.645	1.316	1.249	1.129	0.994	1.015	0.981	0.964	1.161	20.26
14)	T	Trichlorofluor...	2.776	2.385	2.496	2.272	2.097	2.135	2.042	2.011	2.277	11.59
15)	T	2-Propanol (Is...		4.463	4.536	4.168	2.920	2.763	2.577	2.672	3.443	26.09
16)	T	Acrylonitrile	2.701	1.907	1.878	1.783	1.745	1.813	1.765	1.738	1.916	16.85
17)	T	1,1-Dichloroet...	1.458	1.418	1.452	1.263	1.206	1.223	1.172	1.152	1.293	9.95
18)	T	2-Methyl-2-Pro...	4.464	3.710	3.939	3.616	3.558	3.584			3.812	9.14
19)	T	Methylene Chlo...			1.958	1.578	1.294	1.273	1.220	1.201	1.421	20.88
20)	T	3-Chloro-1-pro...	2.347	2.260	2.345	2.220	2.150	2.296	2.230	2.191	2.255	3.15
21)	T	Trichlorotrifl...	1.348	1.244	1.299	1.193	1.089	1.098	1.062	1.035	1.171	10.01
22)	T	Carbon Disulfide		6.210	5.678	5.057	4.654	4.699	4.488	4.424	5.030	13.40
23)	T	trans-1,2-Dich...	2.436	2.237	2.206	2.142	1.951	1.953	1.883	1.835	2.080	10.00
24)	T	1,1-Dichloroet...	2.896	2.757	2.747	2.500	2.307	2.379	2.288	2.236	2.514	10.07
25)	T	Methyl tert-Bu...	5.128	4.611	4.650	4.307	4.119	4.185	4.042	3.984	4.378	8.93
26)	T	Vinyl Acetate	0.430	0.368	0.423	0.399	0.393	0.410	0.402	0.398	0.403	4.70
27)	T	2-Butanone (MEK)	1.265	1.003	1.038	0.972	0.927	0.964	0.928	0.794	0.986	13.56
28)	T	cis-1,2-Dichlo...	2.442	2.056	2.101	1.938	1.826	1.836	1.764	1.720	1.960	12.05
29)	T	Diisopropyl Ether	1.446	1.223	1.323	1.262	1.171	1.188	1.153	1.148	1.239	8.26
30)	T	Ethyl Acetate	0.611	0.554	0.573	0.545	0.517	0.535	0.520	0.516	0.546	6.02
31)	T	n-Hexane	3.541	3.006	3.181	2.805	2.582	2.633	2.545	2.543	2.855	12.70

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.679	2.408	2.409	2.204	1.983	2.054	1.974	1.937	2.206	12.18
33)	S	1,2-Dichloroet...	1.586	1.577	1.582	1.590	1.535	1.533	1.520	1.504	1.553	2.19
34)	T	Tetrahydrofura...	1.274	0.932	1.100	0.938	0.910	0.879	0.830	0.821	0.961	15.96
35)	T	Ethyl tert-But...	1.999	1.832	2.033	1.818	1.732	1.757	1.708	1.687	1.821	7.18
36)	T	1,2-Dichloroet...	2.099	1.992	1.976	1.806	1.683	1.700	1.599	1.531	1.798	11.39
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.531	0.465	0.486	0.453	0.419	0.434	0.413	0.403	0.451	9.46
39)	T	Isopropyl Acetate	0.227	0.205	0.220	0.206	0.194	0.201	0.192	0.188	0.204	6.71
40)	T	1-Butanol		0.348	0.319	0.300	0.320	0.335	0.324	0.318	0.323	4.66
41)	T	Benzene	1.633	1.385	1.359	1.227	1.136	1.158	1.101	1.070	1.258	15.11
42)	T	Carbon Tetrach...	0.394	0.356	0.369	0.340	0.334	0.352	0.337	0.333	0.352	6.03
43)	T	Cyclohexane	0.666	0.576	0.588	0.539	0.492	0.500	0.479	0.469	0.539	12.59
44)	T	tert-Amyl Meth...	1.092	0.926	0.998	0.937	0.900	0.918	0.881	0.858	0.939	7.95
45)	T	1,2-Dichloropr...	0.397	0.361	0.368	0.324	0.312	0.316	0.300	0.293	0.334	11.12
46)	T	Bromodichlorom...	0.458	0.387	0.392	0.378	0.362	0.378	0.362	0.353	0.384	8.57
47)	T	Trichloroethene	0.466	0.375	0.379	0.344	0.323	0.328	0.316	0.309	0.355	14.62
48)	T	1,4-Dioxane	0.305	0.282	0.288	0.248	0.245	0.246	0.237	0.230	0.260	10.55
49)	T	2,2,4-Trimethy...	1.964	1.629	1.686	1.546	1.447	1.461	1.387	1.337	1.557	12.98
50)	T	Methyl Methacr...	0.156	0.139	0.150	0.135	0.136	0.142	0.136	0.135	0.141	5.53
51)	T	n-Heptane	0.427	0.373	0.385	0.364	0.341	0.344	0.332	0.324	0.361	9.35
52)	T	cis-1,3-Dichlo...	0.571	0.502	0.521	0.491	0.482	0.500	0.481	0.471	0.502	6.33
53)	T	4-Methyl-2-pen...	0.359	0.295	0.308	0.303	0.297	0.303	0.289	0.284	0.305	7.68
54)	T	trans-1,3-Dich...	0.476	0.413	0.443	0.421	0.429	0.453	0.437	0.427	0.437	4.59
55)	T	1,1,2-Trichlor...	0.340	0.301	0.310	0.284	0.276	0.285	0.271	0.265	0.292	8.44
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	2.305	2.306	2.305	2.309	2.306	2.300	2.310	2.304	2.306	0.14
58)	T	Toluene	3.623	2.920	3.025	2.738	2.571	2.574	2.473	2.421	2.793	14.19
59)	T	2-Hexanone	2.049	1.429	1.515	1.403	1.395	1.422	1.367	1.337	1.490	15.57
60)	T	Dibromochlorom...	0.696	0.618	0.636	0.636	0.612	0.648	0.629	0.625	0.638	4.14
61)	T	1,2-Dibromoethane	0.831	0.730	0.718	0.658	0.641	0.662	0.638	0.628	0.688	9.97
62)	T	n-Butyl Acetate	2.338	1.850	1.857	1.721	1.704	1.765	1.737	1.737	1.839	11.40
63)	T	n-Octane	0.785	0.652	0.714	0.643	0.602	0.611	0.580	0.572	0.645	11.28
64)	T	Tetrachloroethene	1.090	0.904	0.904	0.826	0.767	0.779	0.756	0.755	0.848	13.63
65)	T	Chlorobenzene	2.375	1.868	1.886	1.744	1.610	1.637	1.574	1.548	1.780	15.30
66)	T	Ethylbenzene	3.846	3.171	3.188	2.956	2.803	2.848	2.743	2.680	3.030	12.51
67)	T	m- & p-Xylenes	3.081	2.499	2.611	2.392	2.216	2.273	2.170	2.112	2.419	13.08
68)	T	Bromoform	0.622	0.494	0.556	0.541	0.551	0.598	0.589	0.594	0.568	7.19
69)	T	Styrene	2.478	1.895	1.937	1.800	1.735	1.803	1.726	1.675	1.881	13.64
70)	T	o-Xylene	3.279	2.708	2.726	2.479	2.331	2.373	2.283	2.224	2.550	13.65

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	2.005	1.753	1.847	1.675	1.581	1.597	1.518	1.470	1.681	10.69
72)	T	1,1,2,2-Tetrac...	1.348	1.164	1.262	1.150	1.083	1.121	1.085	1.066	1.160	8.48
73)	S	Bromofluoroben...	0.774	0.771	0.779	0.781	0.775	0.778	0.782	0.780	0.777	0.50
74)	T	Cumene	4.522	3.495	3.524	3.169	2.962	3.002	2.884	2.831	3.299	16.98
75)	T	alpha-Pinene	1.782	1.636	1.734	1.601	1.537	1.578	1.518	1.498	1.611	6.35
76)	T	n-Propylbenzene	5.441	4.229	4.306	3.924	3.710	3.754	3.553	3.394	4.039	16.01
77)	T	3-Ethyltoluene	4.091	3.373	3.461	3.038	2.964	2.981	2.893	2.845	3.206	13.14
78)	T	4-Ethyltoluene	4.003	3.202	3.301	3.151	2.837	2.983	2.810	2.776	3.133	12.84
79)	T	1,3,5-Trimethy...	3.324	2.662	2.723	2.537	2.378	2.426	2.344	2.403	2.600	12.43
80)	T	alpha-Methylst...	1.742	1.386	1.449	1.371	1.390	1.402	1.354	1.399	1.436	8.80
81)	T	2-Ethyltoluene	4.143	3.362	3.430	3.169	2.975	3.048	2.919	2.985	3.254	12.43
82)	T	1,2,4-Trimethy...	3.356	2.663	2.791	2.551	2.433	2.513	2.454	2.548	2.664	11.37
83)	T	n-Decane	1.969	1.702	1.844	1.705	1.582	1.626	1.554	1.609	1.699	8.39
84)	T	Benzyl Chloride	2.373	1.648	1.772	1.688	1.799	2.058	2.054	2.190	1.948	13.35
85)	T	1,3-Dichlorobe...	2.498	1.658	1.649	1.455	1.377	1.409	1.374	1.436	1.607	23.49
86)	T	1,4-Dichlorobe...	2.655	1.785	1.618	1.492	1.380	1.428	1.388	1.449	1.649	25.99
87)	T	sec-Butylbenzene	4.527	3.773	3.816	3.471	3.264	3.328	3.214	3.176	3.571	12.80
88)	T	4-Isopropyltol...	4.426	3.674	3.683	3.416	3.254	3.356	3.253	3.366	3.554	10.98
89)	T	1,2,3-Trimethy...	3.266	2.650	2.852	2.588	2.471	2.573	2.506	2.619	2.691	9.63
90)	T	1,2-Dichlorobe...	2.173	1.589	1.545	1.435	1.332	1.387	1.370	1.415	1.531	17.89
91)	T	d-Limonene	1.124	0.998	1.106	1.069	1.064	1.072	1.040	1.065	1.067	3.58
92)	T	1,2-Dibromo-3-...	0.563	0.488	0.501	0.486	0.494	0.525	0.532	0.542	0.517	5.50
93)	T	n-Undecane	1.922	1.637	1.755	1.671	1.608	1.630	1.608	1.592	1.678	6.63
94)	T	1,2,4-Trichlor...		1.335	1.165	1.062	1.017	1.071	1.086	1.118	1.122	9.32
95)	T	Naphthalene		4.848	3.923	3.638	3.497	3.721	3.755	3.783	3.881	11.50
96)	T	n-Dodecane	1.866	1.599	1.669	1.586	1.545	1.575	1.553	1.509	1.613	6.99
97)	T	Hexachlorobuta...	0.841	0.749	0.730	0.673	0.635	0.664	0.663	0.676	0.704	9.50
98)	T	Cyclohexanone	1.172	0.979	1.021	0.969	0.952	0.962	0.931	0.903	0.986	8.37
99)	T	tert-Butylbenzene	3.486	2.799	2.880	2.658	2.449	2.533	2.453	2.528	2.723	12.71
100)	T	n-Butylbenzene	3.596	2.904	2.958	2.670	2.572	2.625	2.613	2.593	2.817	12.33

(#) = Out of Range

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\21\
Data File : 03211201.D
Acq On : 21 Mar 2012 4:13
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 21 07:38:45 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	83	-0.02
2	T	Propene	2.102	2.230	-6.1	80	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.371	11.0	83	0.00
4	T	Chloromethane	2.449	2.229	9.0	81	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.253	14.2	78	0.00
6	T	Vinyl Chloride	2.333	2.088	10.5	82	0.00
7	T	1,3-Butadiene	1.743	1.698	2.6	84	-0.01
8	T	Bromomethane	1.252	1.103	11.9	80	0.00
9	T	Chloroethane	1.217	1.086	10.8	83	0.00
10	T	Ethanol	1.239	1.182	4.6	90	-0.07
11	T	Acetonitrile	2.825	2.652	6.1	86	-0.05
12	T	Acrolein	0.897	0.782	12.8	80	-0.02
13	T	Acetone	1.161	1.046	9.9	86	-0.05
14	T	Trichlorofluoromethane	2.277	2.123	6.8	83	0.00
15	T	2-Propanol (Isopropanol)	3.443	2.957	14.1	89	-0.05
16	T	Acrylonitrile	1.916	1.850	3.4	85	-0.03
17	T	1,1-Dichloroethene	1.293	1.194	7.7	81	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.371	11.6	78	-0.03
19	T	Methylene Chloride	1.421	1.258	11.5	82	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.357	-4.5	85	-0.02
21	T	Trichlorotrifluoroethane	1.171	1.062	9.3	80	0.00
22	T	Carbon Disulfide	5.030	4.631	7.9	82	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.980	4.8	84	-0.01
24	T	1,1-Dichloroethane	2.514	2.403	4.4	84	-0.02
25	T	Methyl tert-Butyl Ether	4.378	4.257	2.8	85	0.00
26	T	Vinyl Acetate	0.403	0.410	-1.7	83	-0.03
27	T	2-Butanone (MEK)	0.986	0.978	0.8	84	-0.03
28	T	cis-1,2-Dichloroethene	1.960	1.861	5.1	84	-0.02
29	T	Diisopropyl Ether	1.239	1.185	4.4	83	-0.01
30	T	Ethyl Acetate	0.546	0.540	1.1	84	-0.03
31	T	n-Hexane	2.855	2.629	7.9	83	-0.01
32	T	Chloroform	2.206	2.043	7.4	83	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.659	-6.8	90	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.885	7.9	84	-0.01
35	T	Ethyl tert-Butyl Ether	1.821	1.752	3.8	83	-0.01
36	T	1,2-Dichloroethane	1.798	1.746	2.9	85	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	87	0.00
38	T	1,1,1-Trichloroethane	0.451	0.419	7.1	84	0.00

EM 3/21/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\21\
Data File : 03211201.D
Acq On : 21 Mar 2012 4:13
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 21 07:38:45 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.195	4.4	84	-0.02
40	T	1-Butanol	0.323	0.351	-8.7	91	-0.05
41	T	Benzene	1.258	1.108	11.9	83	-0.02
42	T	Carbon Tetrachloride	0.352	0.330	6.2	81	-0.01
43	T	Cyclohexane	0.539	0.483	10.4	84	-0.02
44	T	tert-Amyl Methyl Ether	0.939	0.885	5.8	84	-0.02
45	T	1,2-Dichloropropane	0.334	0.306	8.4	84	-0.01
46	T	Bromodichloromethane	0.384	0.360	6.3	83	-0.01
47	T	Trichloroethene	0.355	0.306	13.8	81	-0.01
48	T	1,4-Dioxane	0.260	0.240	7.7	85	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.440	7.5	85	-0.01
50	T	Methyl Methacrylate	0.141	0.136	3.5	83	-0.02
51	T	n-Heptane	0.361	0.337	6.6	85	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.482	4.0	84	0.00
53	T	4-Methyl-2-pentanone	0.305	0.303	0.7	87	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.437	0.0	83	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.269	7.9	82	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	87	0.00
57	S	Toluene-d8 (SS2)	2.306	2.280	1.1	86	0.00
58	T	Toluene	2.793	2.457	12.0	83	-0.01
59	T	2-Hexanone	1.490	1.438	3.5	88	-0.02
60	T	Dibromochloromethane	0.638	0.606	5.0	81	0.00
61	T	1,2-Dibromoethane	0.688	0.621	9.7	81	-0.01
62	T	n-Butyl Acetate	1.839	1.765	4.0	87	-0.01
63	T	n-Octane	0.645	0.625	3.1	89	-0.01
64	T	Tetrachloroethene	0.848	0.719	15.2	80	0.00
65	T	Chlorobenzene	1.780	1.542	13.4	82	0.00
66	T	Ethylbenzene	3.030	2.707	10.7	83	0.00
67	T	m- & p-Xylenes	2.419	2.215	8.4	85	-0.02
68	T	Bromoform	0.568	0.556	2.1	81	-0.01
69	T	Styrene	1.881	1.754	6.8	84	-0.01
70	T	o-Xylene	2.550	2.308	9.5	84	-0.01
71	T	n-Nonane	1.681	1.571	6.5	85	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.066	8.1	83	-0.02
73	S	Bromofluorobenzene (SS3)	0.777	0.752	3.2	84	0.00
74	T	Cumene	3.299	2.988	9.4	86	-0.01
75	T	alpha-Pinene	1.611	1.480	8.1	81	-0.01
76	T	n-Propylbenzene	4.039	3.645	9.8	84	0.00

EM 3/21/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\21\
Data File : 03211201.D
Acq On : 21 Mar 2012 4:13
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 21 07:38:45 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.881	10.1	84	-0.01
78	T	4-Ethyltoluene	3.133	2.806	10.4	82	-0.02
79	T	1,3,5-Trimethylbenzene	2.600	2.325	10.6	83	-0.01
80	T	alpha-Methylstyrene	1.436	1.326	7.7	82	-0.01
81	T	2-Ethyltoluene	3.254	2.901	10.8	83	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.417	9.3	83	-0.02
83	T	n-Decane	1.699	1.581	6.9	84	-0.01
84	T	Benzyl Chloride	1.948	2.028	-4.1	86	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.306	18.7	80	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.324	19.7	80	-0.02
87	T	sec-Butylbenzene	3.571	3.214	10.0	84	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.220	9.4	83	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.461	8.5	83	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.292	15.6	81	-0.01
91	T	d-Limonene	1.067	1.038	2.7	84	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.488	5.6	81	-0.01
93	T	n-Undecane	1.678	1.592	5.1	85	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.982	12.5	80	-0.01
95	T	Naphthalene	3.881	3.509	9.6	82	-0.01
96	T	n-Dodecane	1.613	1.592	1.3	88	0.00
97	T	Hexachlorobutadiene	0.704	0.608	13.6	80	0.00
98	T	Cyclohexanone	0.986	1.003	-1.7	91	-0.02
99	T	tert-Butylbenzene	2.723	2.453	9.9	84	-0.02
100	T	n-Butylbenzene	2.817	2.521	10.5	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

EM 3/21/12

Response Factor Report MS07

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
1)	I	Bromochloromethan	ISTD										
2)	T	Dichlorodifluorom	3.784	3.527	3.467	3.822	3.279	2.986	2.875	3.155	2.920	3.313	10.83
3)	T	Chloromethane		1.470	0.956	1.190	0.904	0.778	0.569	0.897	0.827	0.949	28.81
4)	T	Vinyl Chloride	2.802	2.749	2.588	3.044	2.597	2.406	2.314	2.588	2.446	2.615	8.57
5)	T	Bromomethane	1.894	1.496	1.211	1.613	1.335	1.208	1.105	1.433	1.367	1.407	17.11
6)	T	Chloroethane	1.511	1.416	1.357	1.517	1.295	1.237	1.195	1.312	1.224	1.340	8.92
7)	T	Acetone				1.548	1.214	1.122	1.080	1.193	1.090	1.208	14.52
8)	T	Trichlorofluorome	3.051	2.887	2.831	3.145	2.692	2.565	2.447	2.691	2.536	2.761	8.59
9)	T	1,1-Dichloroethen	1.591	1.440	1.366	1.547	1.322	1.229	1.214	1.385	1.295	1.376	9.52
10)	T	Methylene Chlorid		2.134	1.795	1.866	1.536	1.426	1.404	1.494	1.411	1.633	16.43
11)	T	Trichlorotrifluor	1.408	1.325	1.295	1.376	1.169	1.081	1.062	1.170	1.097	1.220	10.87
12)	T	trans-1,2-Dichlor	1.972	1.710	1.589	1.762	1.505	1.406	1.393	1.512	1.439	1.588	12.18
13)	T	1,1-Dichloroethan	3.265	3.020	3.016	3.383	2.925	2.756	2.681	2.937	2.841	2.980	7.60
14)	T	Methyl tert-Butyl	5.168	4.740	4.762	5.045	4.335	4.137	4.166	4.690	4.471	4.613	7.90
15)	T	cis-1,2-Dichloroe	1.885	1.626	1.630	1.776	1.524	1.434	1.388	1.575	1.482	1.591	10.09
16)	T	Chloroform			3.041	3.257	2.586	2.390	2.280	2.524	2.374	2.636	14.03
17)	S	1,2-Dichloroethan	2.000	2.002	2.032	2.018	1.989	1.973	1.960	1.938	1.932	1.983	1.75
18)	T	1,2-Dichloroethan	2.582	2.460	2.375	2.604	2.222	2.090	1.988	2.222	2.094	2.293	9.73
19)	T	1,1,1-Trichloroet	2.587	2.431	2.340	2.573	2.191	2.059	2.007	2.278	2.150	2.291	9.18
20)	T	Benzene			7.536	7.534	6.055	5.665	5.395	5.903	5.468	6.222	14.88
21)	T	Carbon Tetrachlor	2.280	1.842	1.769	1.950	1.676	1.579	1.549	1.771	1.692	1.790	12.41
22)	I	1,4-Difluorobenze	ISTD										
23)	T	1,2-Dichloropropa	0.417	0.397	0.373	0.409	0.354	0.331	0.319	0.358	0.336	0.366	9.68
24)	T	Bromodichlorometh	0.491	0.464	0.436	0.489	0.420	0.398	0.394	0.447	0.416	0.439	8.26
25)	T	Trichloroethene	0.418	0.379	0.349	0.390	0.324	0.305	0.287	0.326	0.307	0.343	12.96
26)	T	1,4-Dioxane	0.324	0.290	0.270	0.278	0.242	0.231	0.227	0.258	0.243	0.263	11.99
27)	T	cis-1,3-Dichlorop	0.567	0.523	0.508	0.540	0.499	0.484	0.488	0.559	0.522	0.521	5.67
28)	T	trans-1,3-Dichlor	0.457	0.434	0.431	0.444	0.419	0.409	0.417	0.505	0.482	0.444	7.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
29)	T	1,1,2-Trichloroet	0.315	0.296	0.286	0.305	0.263	0.248	0.242	0.274	0.257	0.276	9.32
30)	S	Toluene-d8 (SS2)	1.053	1.071	1.054	1.047	1.051	1.052	1.071	1.060	1.049	1.056	0.84
31)	T	Toluene	1.782	1.541	1.420	1.485	1.269	1.198	1.177	1.307	1.186	1.374	14.76
32)	T	1,2-Dibromoethane	0.379	0.362	0.345	0.362	0.323	0.307	0.304	0.351	0.331	0.340	7.65
33)	T	Tetrachloroethene	0.423	0.394	0.371	0.400	0.341	0.320	0.311	0.347	0.326	0.359	11.03
34)	I	Chlorobenzene-d5	----------	----------	----------	----------	ISTD	----------	----------	----------	----------		
35)	T	Chlorobenzene	4.581	4.172	4.017	4.308	3.688	3.469	3.311	3.705	3.345	3.844	11.68
36)	T	Ethylbenzene	7.604	7.082	6.707	7.235	6.297	6.070	5.915	6.682	5.878	6.608	9.30
37)	T	m,p-Xylene	5.861	5.347	5.132	5.536	4.930	4.777	4.719	5.268	4.558	5.125	8.24
38)	T	o-Xylene	6.505	5.826	5.526	5.889	5.188	4.995	4.950	5.594	4.932	5.490	9.67
39)	T	1,1,2,2-Tetrachlo	2.655	2.674	2.710	2.646	2.437	2.371	2.298	2.761	2.498	2.561	6.40
40)	S	Bromofluorobenzen	1.712	1.701	1.695	1.697	1.683	1.680	1.670	1.642	1.593	1.675	2.20
41)	T	1,3-Dichlorobenze	3.304	3.261	3.222	3.204	2.835	2.719	2.608	3.138	2.846	3.015	8.71
42)	T	1,4-Dichlorobenze	3.470	3.303	3.208	3.208	2.803	2.671	2.579	3.174	2.891	3.034	10.13
43)	T	1,2-Dichlorobenze	3.271	3.123	3.112	3.026	2.662	2.536	2.418	3.053	2.772	2.886	10.31
44)	T	1,2,4-Trichlorobe	2.184	2.118	2.169	1.753	1.641	1.608	1.575	2.139	1.978	1.907	13.66
45)	T	Naphthalene	6.857	6.355	6.704	5.143	5.107	5.172	5.297	8.126	7.328	6.232	17.82
46)	T	Hexachlorobutadie	1.486	1.423	1.403	1.217	1.055	1.013	0.975	1.227	1.145	1.216	15.40

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\22\
Data File : 03221204.D
Acq On : 22 Mar 2012 5:21 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 22 06:57:51 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	97	0.00
2	T	Dichlorodifluoromethane (CF	3.313	3.019	8.9	89	0.00
3	T	Chloromethane	0.949	0.890	6.2	95	0.00
4	T	Vinyl Chloride	2.615	2.487	4.9	92	0.00
5	T	Bromomethane	1.407	1.417	-0.7	102	0.00
6	T	Chloroethane	1.340	1.295	3.4	97	0.00
7	T	Acetone	1.208	1.294	-7.1	103	0.00
8	T	Trichlorofluoromethane	2.761	2.600	5.8	93	0.00
9	T	1,1-Dichloroethene	1.376	1.351	1.8	99	0.00
10	T	Methylene Chloride	1.633	1.511	7.5	95	0.00
11	T	Trichlorotrifluoroethane	1.220	1.203	1.4	99	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.483	6.6	95	0.00
13	T	1,1-Dichloroethane	2.980	2.876	3.5	95	0.00
14	T	Methyl tert-Butyl Ether	4.613	4.232	8.3	94	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.557	2.1	99	0.00
16	T	Chloroform	2.636	2.617	0.7	98	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.977	0.3	96	0.00
18	T	1,2-Dichloroethane	2.293	2.073	9.6	90	0.00
19	T	1,1,1-Trichloroethane	2.291	2.199	4.0	97	0.00
20	T	Benzene	6.222	6.262	-0.6	100	0.00
21	T	Carbon Tetrachloride	1.790	1.688	5.7	97	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	106	0.00
23	T	1,2-Dichloropropane	0.366	0.322	12.0	96	0.00
24	T	Bromodichloromethane	0.439	0.383	12.8	96	0.00
25	T	Trichloroethene	0.343	0.303	11.7	99	0.00
26	T	1,4-Dioxane	0.263	0.233	11.4	102	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.474	9.0	100	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.403	9.2	101	0.00
29	T	1,1,2-Trichloroethane	0.276	0.252	8.7	101	0.00
30	S	Toluene-d8 (SS2)	1.056	1.191	-12.8	120	0.00
31	T	Toluene	1.374	1.230	10.5	102	0.00
32	T	1,2-Dibromoethane	0.340	0.316	7.1	103	0.00
33	T	Tetrachloroethene	0.359	0.336	6.4	104	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	105	0.00
35	T	Chlorobenzene	3.844	3.647	5.1	104	0.00
36	T	Ethylbenzene	6.608	5.864	11.3	98	0.00
37	T	m,p-Xylene	5.125	4.630	9.7	99	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\22\
Data File : 03221204.D
Acq On : 22 Mar 2012 5:21 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 22 06:57:51 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	5.028	8.4	102	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.469	3.6	107	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.947	-16.2	122	0.00
41	T	1,3-Dichlorobenzene	3.015	3.092	-2.6	115	0.00
42	T	1,4-Dichlorobenzene	3.034	3.052	-0.6	115	0.00
43	T	1,2-Dichlorobenzene	2.886	2.957	-2.5	117	0.00
44	T	1,2,4-Trichlorobenzene	1.907	2.112	-10.7	135	0.00
45	T	Naphthalene	6.232	7.427	-19.2	153	0.00
46	T	Hexachlorobutadiene	1.216	1.227	-0.9	122	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

KR 3/22/12

LABORATORY REPORT

March 30, 2012

Christoher Cote
Montana DEQ
1100 N. Last Chance Gulch
Helena, MT 59601

RE: Background Indoor Air Study

Dear Christoher:

Enclosed are the results of the samples submitted to our laboratory on March 16, 2012. For your reference, these analyses have been assigned our service request number P1201043.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-11-2; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA015272011-1; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Kate Aguilera
Project Manager

Client: Montana DEQ CAS Project No: P1201043
Project: Background Indoor Air Study

CASE NARRATIVE

The samples were received intact under chain of custody on March 16, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009.

Volatile Organic Compound Analysis

The samples were also analyzed in scan and SIM mode for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

DETAIL SUMMARY REPORT

Client: Montana DEQ
Project ID: Background Indoor Air Study
Service Request: P1201043

Date Received: 3/16/2012
Time Received: 10:15

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC Cans	TO-15 - VOC SIM
15-IF-031212	P1201043-001	Air	3/13/2012	14:10	AS00187	-2.79	3.54	X	X	X
52-IF-031212	P1201043-002	Air	3/13/2012	14:10	AC01845	-4.19	3.67	X	X	X
10-IF-031212	P1201043-003	Air	3/13/2012	15:55	AC01842	-1.14	3.52	X	X	X
11-IF-031212	P1201043-004	Air	3/13/2012	16:30	AS00188	-2.57	3.67	X	X	X
12-IF-031312	P1201043-005	Air	3/14/2012	17:10	AS00185	-3.74	3.69	X	X	X
13-IF-031312	P1201043-006	Air	3/14/2012	09:40	AS00190	-3.01	3.68	X	X	X
16-IF-031312	P1201043-007	Air	3/14/2012	12:00	AC01428	-3.45	3.74	X	X	X

Columbia Analytical Services

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1201043

CAS Contact:

Company Name & Address (Reporting Information)
Montana Department of Environmental Quality
PO Box 200901
1100 N. East Chance Gulch
Helena, MT 59620-0901

Project Name: Background Indoor Air Study

Project Number:

Project Manager: Chris Cote

P.O. # / Billing Information: Reference as: Background Indoor Air Study
Bill to Chris Cote at MDEQ

Phone: 406-841-5078 Fax: 406-841-5050

Email Address for Result Reporting: ccote2@mt.gov; Martichbj@cdm.com

Sampler (Print & Sign): Bob Roll & Pat Sebinski

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15	Analysis Method: TO-15 SIM	Analysis Method: MA-APH	Comments e.g. Actual Preservative or specific instructions
15-IF-031212	1-2.62	3/13/12	14:10	AS00187	FCA00419	-24	-6.5		X	X	X	Analyze
52-IF-031212	2-4.03	3/13/12	14:10	AC01945	FCA00317	-27	-7.0		X	X	X	Project
10-IF-031212	3-0.45	3/13/12	15:55	AC01942	FCA00413	-28	-1.5		X	X	X	Specific
11-IF-031212	5-2.40	3/13/12	16:30	AS00188	FCA00017	-28	-4.5		X	X	X	list of
12-IF-031312	6-3.56	3/14/12	17:10	AS00185	FCA00387	-27	-6.5		X	X	X	compounds
13-IF-031312	9-2.84	3/14/12	9:40	AS00190	FCA00019	-28	-5.0		X	X	X	to project
16-IF-031312	7-3.26	3/14/12	12:00	AC01428	FCA00374	-27	-5.5		X	X	X	specific
												reporting
												limits

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) X
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: CSV and EXCEL Format

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Robert Roll	3/15/12	1100		3/16/12	1015
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____°C

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Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201043

Project: Background Indoor Air Study

Sample(s) received on: 3/16/12 Date opened: 3/16/12 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201043-001.01	6.0 L Silonite Can					
P1201043-002.01	6.0 L Ambient Can					
P1201043-003.01	6.0 L Ambient Can					
P1201043-004.01	6.0 L Silonite Can					
P1201043-005.01	6.0 L Silonite Can					
P1201043-006.01	6.0 L Silonite Can					
P1201043-007.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **15-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-001

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00187

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.79 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.53

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**46**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	15	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.7	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **52-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-002

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01845

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**41**	35	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**19**	18	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.8	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **10-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-003

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01842

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.14 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.34

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**32**	27	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**100**	13	
C_9 - C_{10} Aromatic Hydrocarbons	ND	6.7	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **11-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-004

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan/Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00188

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.57 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.51

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**43**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	15	
C_9 - C_{10} Aromatic Hydrocarbons	**8.6**	7.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **12-IF-031312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-005

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00185

Date Collected: 3/14/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.68

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**60**	34	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	17	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **13-IF-031312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-006

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00190

Date Collected: 3/14/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.01 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.57

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**33**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	16	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.9	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **16-IF-031312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-007

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan/Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01428

Date Collected: 3/14/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.45 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.64

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**210**	33	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	16	
C_9 - C_{10} Aromatic Hydrocarbons	**11**	8.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P120324-MB

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**22.5**	**92**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**23.3**	**93**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**43.0**	**89**	70-130	

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **52-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-002DUP

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01845

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

Compound	Sample Result µg/m³	Duplicate Sample Result µg/m³	Average µg/m³	% RPD	RPD Limit	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	41.3	48.0	44.65	**15**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	18.8	24.6	21.7	**27**	30	
C_9 - C_{10} Aromatic Hydrocarbons	ND	ND	-	**-**	30	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **15-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00187

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.79 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.7**	0.77	**2.2**	0.44	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.77	**0.41**	0.15	
74-87-3	Chloromethane	ND	0.77	ND	0.37	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.77	ND	0.11	
75-01-4	Vinyl Chloride	ND	0.77	ND	0.30	
106-99-0	1,3-Butadiene	ND	0.77	ND	0.35	
74-83-9	Bromomethane	ND	0.77	ND	0.20	
75-00-3	Chloroethane	ND	0.77	ND	0.29	
64-17-5	Ethanol	**480**	7.7	**260**	4.1	
75-05-8	Acetonitrile	ND	0.77	ND	0.46	
107-02-8	Acrolein	ND	3.1	ND	1.3	
67-64-1	Acetone	**32**	7.7	**14**	3.2	
75-69-4	Trichlorofluoromethane	**2.6**	0.77	**0.46**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**17**	1.5	**6.8**	0.62	
107-13-1	Acrylonitrile	ND	0.77	ND	0.35	
75-35-4	1,1-Dichloroethene	ND	0.77	ND	0.19	
75-09-2	Methylene Chloride	ND	0.77	ND	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.77	ND	0.24	
76-13-1	Trichlorotrifluoroethane	ND	0.77	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.7	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.77	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.77	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.77	ND	0.21	
108-05-4	Vinyl Acetate	ND	7.7	ND	2.2	
78-93-3	2-Butanone (MEK)	ND	7.7	ND	2.6	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **15-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-001

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00187

Initial Pressure (psig): -2.79 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.77	ND	0.19	
141-78-6	Ethyl Acetate	**9.5**	1.5	**2.6**	0.42	
110-54-3	n-Hexane	ND	0.77	ND	0.22	
67-66-3	Chloroform	ND	0.77	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.77	ND	0.26	
107-06-2	1,2-Dichloroethane	ND	0.77	ND	0.19	
71-55-6	1,1,1-Trichloroethane	**1.4**	0.77	**0.25**	0.14	
71-43-2	Benzene	**0.78**	0.77	**0.25**	0.24	
56-23-5	Carbon Tetrachloride	ND	0.77	ND	0.12	
110-82-7	Cyclohexane	ND	1.5	ND	0.44	
78-87-5	1,2-Dichloropropane	ND	0.77	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.77	ND	0.11	
79-01-6	Trichloroethene	ND	0.77	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.77	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.37	
142-82-5	n-Heptane	ND	0.77	ND	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.77	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.77	ND	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.77	ND	0.17	
79-00-5	1,1,2-Trichloroethane	ND	0.77	ND	0.14	
108-88-3	Toluene	**9.8**	0.77	**2.6**	0.20	
591-78-6	2-Hexanone	ND	0.77	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.77	ND	0.090	
106-93-4	1,2-Dibromoethane	ND	0.77	ND	0.10	
123-86-4	n-Butyl Acetate	**2.0**	0.77	**0.42**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **15-IF-031212** CAS Sample ID: P1201043-001
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00187

Initial Pressure (psig): -2.79 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.77	ND	0.16	
127-18-4	Tetrachloroethene	ND	0.77	ND	0.11	
108-90-7	Chlorobenzene	ND	0.77	ND	0.17	
100-41-4	Ethylbenzene	ND	0.77	ND	0.18	
179601-23-1	m,p-Xylenes	**1.6**	1.5	**0.37**	0.35	
75-25-2	Bromoform	ND	0.77	ND	0.074	
100-42-5	Styrene	ND	0.77	ND	0.18	
95-47-6	o-Xylene	ND	0.77	ND	0.18	
111-84-2	n-Nonane	ND	0.77	ND	0.15	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.77	ND	0.11	
98-82-8	Cumene	ND	0.77	ND	0.16	
80-56-8	alpha-Pinene	**1.5**	0.77	**0.27**	0.14	
103-65-1	n-Propylbenzene	ND	0.77	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.77	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.77	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	ND	0.77	ND	0.16	
100-44-7	Benzyl Chloride	ND	0.77	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.77	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.77	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.77	ND	0.13	
5989-27-5	d-Limonene	**16**	0.77	**2.9**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.77	ND	0.079	
120-82-1	1,2,4-Trichlorobenzene	ND	0.77	ND	0.10	
91-20-3	Naphthalene	ND	0.77	ND	0.15	
87-68-3	Hexachlorobutadiene	ND	0.77	ND	0.072	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **52-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01845

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.4**	0.88	**2.0**	0.51	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.88	**0.40**	0.18	
74-87-3	Chloromethane	ND	0.88	ND	0.42	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.88	ND	0.13	
75-01-4	Vinyl Chloride	ND	0.88	ND	0.34	
106-99-0	1,3-Butadiene	ND	0.88	ND	0.40	
74-83-9	Bromomethane	ND	0.88	ND	0.23	
75-00-3	Chloroethane	ND	0.88	ND	0.33	
64-17-5	Ethanol	**480**	8.8	**250**	4.6	
75-05-8	Acetonitrile	ND	0.88	ND	0.52	
107-02-8	Acrolein	ND	3.5	ND	1.5	
67-64-1	Acetone	**31**	8.8	**13**	3.7	
75-69-4	Trichlorofluoromethane	**2.6**	0.88	**0.45**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**15**	1.8	**6.2**	0.71	
107-13-1	Acrylonitrile	ND	0.88	ND	0.40	
75-35-4	1,1-Dichloroethene	ND	0.88	ND	0.22	
75-09-2	Methylene Chloride	ND	0.88	ND	0.25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.88	ND	0.28	
76-13-1	Trichlorotrifluoroethane	ND	0.88	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.8	ND	2.8	
156-60-5	trans-1,2-Dichloroethene	ND	0.88	ND	0.22	
75-34-3	1,1-Dichloroethane	ND	0.88	ND	0.22	
1634-04-4	Methyl tert-Butyl Ether	ND	0.88	ND	0.24	
108-05-4	Vinyl Acetate	ND	8.8	ND	2.5	
78-93-3	2-Butanone (MEK)	ND	8.8	ND	3.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **52-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-002

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01845

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.88	ND	0.22	
141-78-6	Ethyl Acetate	**9.7**	1.8	**2.7**	0.49	
110-54-3	n-Hexane	ND	0.88	ND	0.25	
67-66-3	Chloroform	ND	0.88	ND	0.18	
109-99-9	Tetrahydrofuran (THF)	ND	0.88	ND	0.30	
107-06-2	1,2-Dichloroethane	ND	0.88	ND	0.22	
71-55-6	1,1,1-Trichloroethane	**1.4**	0.88	**0.26**	0.16	
71-43-2	Benzene	ND	0.88	ND	0.27	
56-23-5	Carbon Tetrachloride	ND	0.88	ND	0.14	
110-82-7	Cyclohexane	ND	1.8	ND	0.51	
78-87-5	1,2-Dichloropropane	ND	0.88	ND	0.19	
75-27-4	Bromodichloromethane	ND	0.88	ND	0.13	
79-01-6	Trichloroethene	ND	0.88	ND	0.16	
123-91-1	1,4-Dioxane	ND	0.88	ND	0.24	
80-62-6	Methyl Methacrylate	ND	1.8	ND	0.43	
142-82-5	n-Heptane	ND	0.88	ND	0.21	
10061-01-5	cis-1,3-Dichloropropene	ND	0.88	ND	0.19	
108-10-1	4-Methyl-2-pentanone	ND	0.88	ND	0.21	
10061-02-6	trans-1,3-Dichloropropene	ND	0.88	ND	0.19	
79-00-5	1,1,2-Trichloroethane	ND	0.88	ND	0.16	
108-88-3	Toluene	**10**	0.88	**2.6**	0.23	
591-78-6	2-Hexanone	ND	0.88	ND	0.21	
124-48-1	Dibromochloromethane	ND	0.88	ND	0.10	
106-93-4	1,2-Dibromoethane	ND	0.88	ND	0.11	
123-86-4	n-Butyl Acetate	**2.1**	0.88	**0.44**	0.18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **52-IF-031212** CAS Sample ID: P1201043-002
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01845

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.88	ND	0.19	
127-18-4	Tetrachloroethene	ND	0.88	ND	0.13	
108-90-7	Chlorobenzene	ND	0.88	ND	0.19	
100-41-4	Ethylbenzene	ND	0.88	ND	0.20	
179601-23-1	m,p-Xylenes	ND	1.8	ND	0.40	
75-25-2	Bromoform	ND	0.88	ND	0.085	
100-42-5	Styrene	ND	0.88	ND	0.21	
95-47-6	o-Xylene	ND	0.88	ND	0.20	
111-84-2	n-Nonane	ND	0.88	ND	0.17	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.88	ND	0.13	
98-82-8	Cumene	ND	0.88	ND	0.18	
80-56-8	alpha-Pinene	**1.6**	0.88	**0.28**	0.16	
103-65-1	n-Propylbenzene	ND	0.88	ND	0.18	
622-96-8	4-Ethyltoluene	ND	0.88	ND	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.88	ND	0.18	
95-63-6	1,2,4-Trimethylbenzene	ND	0.88	ND	0.18	
100-44-7	Benzyl Chloride	ND	0.88	ND	0.17	
541-73-1	1,3-Dichlorobenzene	ND	0.88	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.88	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.88	ND	0.15	
5989-27-5	d-Limonene	**18**	0.88	**3.2**	0.16	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.88	ND	0.091	
120-82-1	1,2,4-Trichlorobenzene	ND	0.88	ND	0.12	
91-20-3	Naphthalene	ND	0.88	ND	0.17	
87-68-3	Hexachlorobutadiene	ND	0.88	ND	0.082	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **10-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01842

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.14 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.34

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**6.7**	0.67	**3.9**	0.39	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	0.67	**0.39**	0.14	
74-87-3	Chloromethane	ND	0.67	ND	0.32	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.67	ND	0.096	
75-01-4	Vinyl Chloride	ND	0.67	ND	0.26	
106-99-0	1,3-Butadiene	ND	0.67	ND	0.30	
74-83-9	Bromomethane	ND	0.67	ND	0.17	
75-00-3	Chloroethane	ND	0.67	ND	0.25	
64-17-5	Ethanol	**190**	6.7	**99**	3.6	
75-05-8	Acetonitrile	ND	0.67	ND	0.40	
107-02-8	Acrolein	ND	2.7	ND	1.2	
67-64-1	Acetone	**25**	6.7	**11**	2.8	
75-69-4	Trichlorofluoromethane	**1.0**	0.67	**0.19**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	**36**	1.3	**15**	0.55	
107-13-1	Acrylonitrile	ND	0.67	ND	0.31	
75-35-4	1,1-Dichloroethene	ND	0.67	ND	0.17	
75-09-2	Methylene Chloride	ND	0.67	ND	0.19	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.67	ND	0.21	
76-13-1	Trichlorotrifluoroethane	ND	0.67	ND	0.087	
75-15-0	Carbon Disulfide	ND	6.7	ND	2.2	
156-60-5	trans-1,2-Dichloroethene	ND	0.67	ND	0.17	
75-34-3	1,1-Dichloroethane	ND	0.67	ND	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	0.67	ND	0.19	
108-05-4	Vinyl Acetate	ND	6.7	ND	1.9	
78-93-3	2-Butanone (MEK)	ND	6.7	ND	2.3	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **10-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-003

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01842

Initial Pressure (psig): -1.14 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.34

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.67	ND	0.17	
141-78-6	Ethyl Acetate	**3.7**	1.3	**1.0**	0.37	
110-54-3	n-Hexane	**1.0**	0.67	**0.29**	0.19	
67-66-3	Chloroform	ND	0.67	ND	0.14	
109-99-9	Tetrahydrofuran (THF)	ND	0.67	ND	0.23	
107-06-2	1,2-Dichloroethane	ND	0.67	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.67	ND	0.12	
71-43-2	Benzene	**0.81**	0.67	**0.25**	0.21	
56-23-5	Carbon Tetrachloride	ND	0.67	ND	0.11	
110-82-7	Cyclohexane	ND	1.3	ND	0.39	
78-87-5	1,2-Dichloropropane	ND	0.67	ND	0.15	
75-27-4	Bromodichloromethane	ND	0.67	ND	0.10	
79-01-6	Trichloroethene	ND	0.67	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.67	ND	0.19	
80-62-6	Methyl Methacrylate	ND	1.3	ND	0.33	
142-82-5	n-Heptane	**0.79**	0.67	**0.19**	0.16	
10061-01-5	cis-1,3-Dichloropropene	ND	0.67	ND	0.15	
108-10-1	4-Methyl-2-pentanone	ND	0.67	ND	0.16	
10061-02-6	trans-1,3-Dichloropropene	ND	0.67	ND	0.15	
79-00-5	1,1,2-Trichloroethane	ND	0.67	ND	0.12	
108-88-3	Toluene	**6.6**	0.67	**1.8**	0.18	
591-78-6	2-Hexanone	ND	0.67	ND	0.16	
124-48-1	Dibromochloromethane	ND	0.67	ND	0.079	
106-93-4	1,2-Dibromoethane	ND	0.67	ND	0.087	
123-86-4	n-Butyl Acetate	**0.84**	0.67	**0.18**	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **10-IF-031212** CAS Sample ID: P1201043-003
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01842

Initial Pressure (psig): -1.14 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.34

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.67	ND	0.14	
127-18-4	Tetrachloroethene	ND	0.67	ND	0.099	
108-90-7	Chlorobenzene	ND	0.67	ND	0.15	
100-41-4	Ethylbenzene	ND	0.67	ND	0.15	
179601-23-1	m,p-Xylenes	**1.5**	1.3	**0.34**	0.31	
75-25-2	Bromoform	ND	0.67	ND	0.065	
100-42-5	Styrene	ND	0.67	ND	0.16	
95-47-6	o-Xylene	ND	0.67	ND	0.15	
111-84-2	n-Nonane	ND	0.67	ND	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.67	ND	0.098	
98-82-8	Cumene	ND	0.67	ND	0.14	
80-56-8	alpha-Pinene	**1.5**	0.67	**0.26**	0.12	
103-65-1	n-Propylbenzene	ND	0.67	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.67	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.67	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.67	ND	0.14	
100-44-7	Benzyl Chloride	ND	0.67	ND	0.13	
541-73-1	1,3-Dichlorobenzene	ND	0.67	ND	0.11	
106-46-7	1,4-Dichlorobenzene	ND	0.67	ND	0.11	
95-50-1	1,2-Dichlorobenzene	ND	0.67	ND	0.11	
5989-27-5	d-Limonene	**10**	0.67	**1.8**	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.67	ND	0.069	
120-82-1	1,2,4-Trichlorobenzene	ND	0.67	ND	0.090	
91-20-3	Naphthalene	ND	0.67	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.67	ND	0.063	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **11-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan/Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00188

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12 & 3/26/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -2.57 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.51

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**5.7**	0.76	**3.3**	0.44	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	0.76	**0.39**	0.15	
74-87-3	Chloromethane	ND	0.76	ND	0.37	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.76	ND	0.11	
75-01-4	Vinyl Chloride	ND	0.76	ND	0.30	
106-99-0	1,3-Butadiene	ND	0.76	ND	0.34	
74-83-9	Bromomethane	ND	0.76	ND	0.19	
75-00-3	Chloroethane	ND	0.76	ND	0.29	
64-17-5	Ethanol	**5,900**	150	**3,100**	80	**D**
75-05-8	Acetonitrile	ND	0.76	ND	0.45	
107-02-8	Acrolein	ND	3.0	ND	1.3	
67-64-1	Acetone	**62**	7.6	**26**	3.2	
75-69-4	Trichlorofluoromethane	**1.1**	0.76	**0.19**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**58**	1.5	**24**	0.61	
107-13-1	Acrylonitrile	ND	0.76	ND	0.35	
75-35-4	1,1-Dichloroethene	ND	0.76	ND	0.19	
75-09-2	Methylene Chloride	ND	0.76	ND	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.76	ND	0.24	
76-13-1	Trichlorotrifluoroethane	ND	0.76	ND	0.099	
75-15-0	Carbon Disulfide	ND	7.6	ND	2.4	
156-60-5	trans-1,2-Dichloroethene	ND	0.76	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.76	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.76	ND	0.21	
108-05-4	Vinyl Acetate	ND	7.6	ND	2.1	
78-93-3	2-Butanone (MEK)	ND	7.6	ND	2.6	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **11-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-004

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan/Elsa Moctezuma Date Analyzed: 3/24/12 & 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AS00188

Initial Pressure (psig): -2.57 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.51

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.76	ND	0.19	
141-78-6	Ethyl Acetate	**16**	1.5	**4.4**	0.42	
110-54-3	n-Hexane	**0.80**	0.76	**0.23**	0.21	
67-66-3	Chloroform	**1.3**	0.76	**0.27**	0.15	
109-99-9	Tetrahydrofuran (THF)	ND	0.76	ND	0.26	
107-06-2	1,2-Dichloroethane	ND	0.76	ND	0.19	
71-55-6	1,1,1-Trichloroethane	ND	0.76	ND	0.14	
71-43-2	Benzene	ND	0.76	ND	0.24	
56-23-5	Carbon Tetrachloride	ND	0.76	ND	0.12	
110-82-7	Cyclohexane	ND	1.5	ND	0.44	
78-87-5	1,2-Dichloropropane	ND	0.76	ND	0.16	
75-27-4	Bromodichloromethane	ND	0.76	ND	0.11	
79-01-6	Trichloroethene	ND	0.76	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.76	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.37	
142-82-5	n-Heptane	ND	0.76	ND	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.76	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.76	ND	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.76	ND	0.17	
79-00-5	1,1,2-Trichloroethane	ND	0.76	ND	0.14	
108-88-3	Toluene	**1.5**	0.76	**0.41**	0.20	
591-78-6	2-Hexanone	ND	0.76	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.76	ND	0.089	
106-93-4	1,2-Dibromoethane	ND	0.76	ND	0.098	
123-86-4	n-Butyl Acetate	ND	0.76	ND	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **11-IF-031212** CAS Sample ID: P1201043-004
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan/Elsa Moctezuma Date Analyzed: 3/24/12 & 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AS00188

Initial Pressure (psig): -2.57 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.51

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.76	ND	0.16	
127-18-4	Tetrachloroethene	ND	0.76	ND	0.11	
108-90-7	Chlorobenzene	ND	0.76	ND	0.16	
100-41-4	Ethylbenzene	ND	0.76	ND	0.17	
179601-23-1	m,p-Xylenes	ND	1.5	ND	0.35	
75-25-2	Bromoform	ND	0.76	ND	0.073	
100-42-5	Styrene	**0.87**	0.76	**0.21**	0.18	
95-47-6	o-Xylene	ND	0.76	ND	0.17	
111-84-2	n-Nonane	ND	0.76	ND	0.14	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.76	ND	0.11	
98-82-8	Cumene	ND	0.76	ND	0.15	
80-56-8	alpha-Pinene	**4.0**	0.76	**0.71**	0.14	
103-65-1	n-Propylbenzene	ND	0.76	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.76	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	**0.85**	0.76	**0.17**	0.15	
95-63-6	1,2,4-Trimethylbenzene	**1.5**	0.76	**0.31**	0.15	
100-44-7	Benzyl Chloride	ND	0.76	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.76	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.76	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.76	ND	0.13	
5989-27-5	d-Limonene	**9.0**	0.76	**1.6**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.76	ND	0.078	
120-82-1	1,2,4-Trichlorobenzene	ND	0.76	ND	0.10	
91-20-3	Naphthalene	ND	0.76	ND	0.14	
87-68-3	Hexachlorobutadiene	ND	0.76	ND	0.071	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **12-IF-031312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00185

Date Collected: 3/14/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**2.8**	0.84	**1.6**	0.49	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.84	**0.41**	0.17	
74-87-3	Chloromethane	ND	0.84	ND	0.41	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.84	ND	0.12	
75-01-4	Vinyl Chloride	ND	0.84	ND	0.33	
106-99-0	1,3-Butadiene	ND	0.84	ND	0.38	
74-83-9	Bromomethane	ND	0.84	ND	0.22	
75-00-3	Chloroethane	ND	0.84	ND	0.32	
64-17-5	Ethanol	**86**	8.4	**46**	4.5	
75-05-8	Acetonitrile	ND	0.84	ND	0.50	
107-02-8	Acrolein	ND	3.4	ND	1.5	
67-64-1	Acetone	**27**	8.4	**11**	3.5	
75-69-4	Trichlorofluoromethane	**3.9**	0.84	**0.69**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**8.6**	1.7	**3.5**	0.68	
107-13-1	Acrylonitrile	ND	0.84	ND	0.39	
75-35-4	1,1-Dichloroethene	ND	0.84	ND	0.21	
75-09-2	Methylene Chloride	ND	0.84	ND	0.24	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.84	ND	0.27	
76-13-1	Trichlorotrifluoroethane	ND	0.84	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.4	ND	2.7	
156-60-5	trans-1,2-Dichloroethene	ND	0.84	ND	0.21	
75-34-3	1,1-Dichloroethane	ND	0.84	ND	0.21	
1634-04-4	Methyl tert-Butyl Ether	ND	0.84	ND	0.23	
108-05-4	Vinyl Acetate	ND	8.4	ND	2.4	
78-93-3	2-Butanone (MEK)	ND	8.4	ND	2.8	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **12-IF-031312** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-005

Test Code: EPA TO-15 Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00185

Initial Pressure (psig): -3.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.84	ND	0.21	
141-78-6	Ethyl Acetate	**4.1**	1.7	**1.1**	0.47	
110-54-3	n-Hexane	**1.9**	0.84	**0.53**	0.24	
67-66-3	Chloroform	ND	0.84	ND	0.17	
109-99-9	Tetrahydrofuran (THF)	ND	0.84	ND	0.28	
107-06-2	1,2-Dichloroethane	**2.4**	0.84	**0.59**	0.21	
71-55-6	1,1,1-Trichloroethane	ND	0.84	ND	0.15	
71-43-2	Benzene	**1.8**	0.84	**0.55**	0.26	
56-23-5	Carbon Tetrachloride	ND	0.84	ND	0.13	
110-82-7	Cyclohexane	ND	1.7	ND	0.49	
78-87-5	1,2-Dichloropropane	ND	0.84	ND	0.18	
75-27-4	Bromodichloromethane	ND	0.84	ND	0.13	
79-01-6	Trichloroethene	ND	0.84	ND	0.16	
123-91-1	1,4-Dioxane	ND	0.84	ND	0.23	
80-62-6	Methyl Methacrylate	ND	1.7	ND	0.41	
142-82-5	n-Heptane	**0.87**	0.84	**0.21**	0.21	
10061-01-5	cis-1,3-Dichloropropene	ND	0.84	ND	0.19	
108-10-1	4-Methyl-2-pentanone	ND	0.84	ND	0.21	
10061-02-6	trans-1,3-Dichloropropene	ND	0.84	ND	0.19	
79-00-5	1,1,2-Trichloroethane	ND	0.84	ND	0.15	
108-88-3	Toluene	**5.4**	0.84	**1.4**	0.22	
591-78-6	2-Hexanone	ND	0.84	ND	0.21	
124-48-1	Dibromochloromethane	ND	0.84	ND	0.099	
106-93-4	1,2-Dibromoethane	ND	0.84	ND	0.11	
123-86-4	n-Butyl Acetate	ND	0.84	ND	0.18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **12-IF-031312** CAS Sample ID: P1201043-005
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00185

Initial Pressure (psig): -3.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.84	ND	0.18	
127-18-4	Tetrachloroethene	ND	0.84	ND	0.12	
108-90-7	Chlorobenzene	ND	0.84	ND	0.18	
100-41-4	Ethylbenzene	**0.85**	0.84	**0.20**	0.19	
179601-23-1	m,p-Xylenes	**2.9**	1.7	**0.66**	0.39	
75-25-2	Bromoform	ND	0.84	ND	0.081	
100-42-5	Styrene	ND	0.84	ND	0.20	
95-47-6	o-Xylene	**0.90**	0.84	**0.21**	0.19	
111-84-2	n-Nonane	ND	0.84	ND	0.16	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.84	ND	0.12	
98-82-8	Cumene	ND	0.84	ND	0.17	
80-56-8	alpha-Pinene	**1.1**	0.84	**0.19**	0.15	
103-65-1	n-Propylbenzene	ND	0.84	ND	0.17	
622-96-8	4-Ethyltoluene	ND	0.84	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.84	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	**1.0**	0.84	**0.21**	0.17	
100-44-7	Benzyl Chloride	ND	0.84	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.84	ND	0.14	
106-46-7	1,4-Dichlorobenzene	ND	0.84	ND	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.84	ND	0.14	
5989-27-5	d-Limonene	**5.8**	0.84	**1.0**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.84	ND	0.087	
120-82-1	1,2,4-Trichlorobenzene	ND	0.84	ND	0.11	
91-20-3	Naphthalene	ND	0.84	ND	0.16	
87-68-3	Hexachlorobutadiene	ND	0.84	ND	0.079	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **13-IF-031312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00190

Date Collected: 3/14/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.01 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**6.9**	0.79	**4.0**	0.46	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.79	**0.40**	0.16	
74-87-3	Chloromethane	ND	0.79	ND	0.38	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.79	ND	0.11	
75-01-4	Vinyl Chloride	ND	0.79	ND	0.31	
106-99-0	1,3-Butadiene	ND	0.79	ND	0.35	
74-83-9	Bromomethane	ND	0.79	ND	0.20	
75-00-3	Chloroethane	ND	0.79	ND	0.30	
64-17-5	Ethanol	**570**	7.9	**310**	4.2	
75-05-8	Acetonitrile	ND	0.79	ND	0.47	
107-02-8	Acrolein	**4.8**	3.1	**2.1**	1.4	
67-64-1	Acetone	**35**	7.9	**15**	3.3	
75-69-4	Trichlorofluoromethane	**1.1**	0.79	**0.19**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**40**	1.6	**16**	0.64	
107-13-1	Acrylonitrile	ND	0.79	ND	0.36	
75-35-4	1,1-Dichloroethene	ND	0.79	ND	0.20	
75-09-2	Methylene Chloride	ND	0.79	ND	0.23	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.79	ND	0.25	
76-13-1	Trichlorotrifluoroethane	ND	0.79	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.9	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.79	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.79	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.79	ND	0.22	
108-05-4	Vinyl Acetate	ND	7.9	ND	2.2	
78-93-3	2-Butanone (MEK)	ND	7.9	ND	2.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **13-IF-031312** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-006

Test Code: EPA TO-15 Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00190

Initial Pressure (psig): -3.01 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.79	ND	0.20	
141-78-6	Ethyl Acetate	**4.5**	1.6	**1.2**	0.44	
110-54-3	n-Hexane	ND	0.79	ND	0.22	
67-66-3	Chloroform	ND	0.79	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.79	ND	0.27	
107-06-2	1,2-Dichloroethane	ND	0.79	ND	0.19	
71-55-6	1,1,1-Trichloroethane	ND	0.79	ND	0.14	
71-43-2	Benzene	ND	0.79	ND	0.25	
56-23-5	Carbon Tetrachloride	ND	0.79	ND	0.12	
110-82-7	Cyclohexane	ND	1.6	ND	0.46	
78-87-5	1,2-Dichloropropane	ND	0.79	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.79	ND	0.12	
79-01-6	Trichloroethene	ND	0.79	ND	0.15	
123-91-1	1,4-Dioxane	ND	0.79	ND	0.22	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.38	
142-82-5	n-Heptane	**1.1**	0.79	**0.28**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.79	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.79	ND	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.79	ND	0.17	
79-00-5	1,1,2-Trichloroethane	ND	0.79	ND	0.14	
108-88-3	Toluene	**8.4**	0.79	**2.2**	0.21	
591-78-6	2-Hexanone	ND	0.79	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.79	ND	0.092	
106-93-4	1,2-Dibromoethane	ND	0.79	ND	0.10	
123-86-4	n-Butyl Acetate	**1.4**	0.79	**0.30**	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **13-IF-031312** CAS Sample ID: P1201043-006
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00190

Initial Pressure (psig): -3.01 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	**1.3**	0.79	**0.28**	0.17	
127-18-4	Tetrachloroethene	ND	0.79	ND	0.12	
108-90-7	Chlorobenzene	ND	0.79	ND	0.17	
100-41-4	Ethylbenzene	ND	0.79	ND	0.18	
179601-23-1	m,p-Xylenes	ND	1.6	ND	0.36	
75-25-2	Bromoform	ND	0.79	ND	0.076	
100-42-5	Styrene	ND	0.79	ND	0.18	
95-47-6	o-Xylene	ND	0.79	ND	0.18	
111-84-2	n-Nonane	ND	0.79	ND	0.15	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.79	ND	0.11	
98-82-8	Cumene	ND	0.79	ND	0.16	
80-56-8	alpha-Pinene	**4.0**	0.79	**0.72**	0.14	
103-65-1	n-Propylbenzene	ND	0.79	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.79	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.79	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	ND	0.79	ND	0.16	
100-44-7	Benzyl Chloride	ND	0.79	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.79	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.79	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.79	ND	0.13	
5989-27-5	d-Limonene	**50**	0.79	**8.9**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.79	ND	0.081	
120-82-1	1,2,4-Trichlorobenzene	ND	0.79	ND	0.11	
91-20-3	Naphthalene	ND	0.79	ND	0.15	
87-68-3	Hexachlorobutadiene	ND	0.79	ND	0.074	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **16-IF-031312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-007

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan/Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01428

Date Collected: 3/14/12
Date Received: 3/16/12
Date Analyzed: 3/24/12 & 3/26/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -3.45 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**11**	0.82	**6.1**	0.48	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.82	**0.40**	0.17	
74-87-3	Chloromethane	ND	0.82	ND	0.40	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.82	ND	0.12	
75-01-4	Vinyl Chloride	ND	0.82	ND	0.32	
106-99-0	1,3-Butadiene	ND	0.82	ND	0.37	
74-83-9	Bromomethane	ND	0.82	ND	0.21	
75-00-3	Chloroethane	ND	0.82	ND	0.31	
64-17-5	Ethanol	**1,800**	160	**980**	87	**D**
75-05-8	Acetonitrile	ND	0.82	ND	0.49	
107-02-8	Acrolein	**3.5**	3.3	**1.5**	1.4	
67-64-1	Acetone	**80**	8.2	**34**	3.5	
75-69-4	Trichlorofluoromethane	**1.1**	0.82	**0.20**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**30**	1.6	**12**	0.67	
107-13-1	Acrylonitrile	ND	0.82	ND	0.38	
75-35-4	1,1-Dichloroethene	ND	0.82	ND	0.21	
75-09-2	Methylene Chloride	ND	0.82	ND	0.24	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.82	ND	0.26	
76-13-1	Trichlorotrifluoroethane	ND	0.82	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.2	ND	2.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.82	ND	0.21	
75-34-3	1,1-Dichloroethane	ND	0.82	ND	0.20	
1634-04-4	Methyl tert-Butyl Ether	ND	0.82	ND	0.23	
108-05-4	Vinyl Acetate	ND	8.2	ND	2.3	
78-93-3	2-Butanone (MEK)	ND	8.2	ND	2.8	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **16-IF-031312** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-007

Test Code: EPA TO-15 Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan/Elsa Moctezuma Date Analyzed: 3/24/12 & 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01428

Initial Pressure (psig): -3.45 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.82	ND	0.21	
141-78-6	Ethyl Acetate	**5.1**	1.6	**1.4**	0.46	
110-54-3	n-Hexane	**7.7**	0.82	**2.2**	0.23	
67-66-3	Chloroform	**2.0**	0.82	**0.41**	0.17	
109-99-9	Tetrahydrofuran (THF)	ND	0.82	ND	0.28	
107-06-2	1,2-Dichloroethane	ND	0.82	ND	0.20	
71-55-6	1,1,1-Trichloroethane	ND	0.82	ND	0.15	
71-43-2	Benzene	**7.6**	0.82	**2.4**	0.26	
56-23-5	Carbon Tetrachloride	ND	0.82	ND	0.13	
110-82-7	Cyclohexane	ND	1.6	ND	0.48	
78-87-5	1,2-Dichloropropane	ND	0.82	ND	0.18	
75-27-4	Bromodichloromethane	ND	0.82	ND	0.12	
79-01-6	Trichloroethene	ND	0.82	ND	0.15	
123-91-1	1,4-Dioxane	ND	0.82	ND	0.23	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.40	
142-82-5	n-Heptane	**3.2**	0.82	**0.79**	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	0.82	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	0.82	ND	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	0.82	ND	0.18	
79-00-5	1,1,2-Trichloroethane	ND	0.82	ND	0.15	
108-88-3	Toluene	**30**	0.82	**7.9**	0.22	
591-78-6	2-Hexanone	ND	0.82	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.82	ND	0.096	
106-93-4	1,2-Dibromoethane	ND	0.82	ND	0.11	
123-86-4	n-Butyl Acetate	**0.83**	0.82	**0.17**	0.17	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **16-IF-031312** CAS Sample ID: P1201043-007
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/16/12
Analyst: Lusine Hakobyan/Elsa Moctezuma Date Analyzed: 3/24/12 & 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01428

Initial Pressure (psig): -3.45 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	**1.0**	0.82	**0.22**	0.18	
127-18-4	Tetrachloroethene	ND	0.82	ND	0.12	
108-90-7	Chlorobenzene	ND	0.82	ND	0.18	
100-41-4	Ethylbenzene	**3.0**	0.82	**0.70**	0.19	
179601-23-1	m,p-Xylenes	**12**	1.6	**2.7**	0.38	
75-25-2	Bromoform	ND	0.82	ND	0.079	
100-42-5	Styrene	ND	0.82	ND	0.19	
95-47-6	o-Xylene	**3.2**	0.82	**0.73**	0.19	
111-84-2	n-Nonane	**1.1**	0.82	**0.20**	0.16	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.82	ND	0.12	
98-82-8	Cumene	ND	0.82	ND	0.17	
80-56-8	alpha-Pinene	**5.0**	0.82	**0.90**	0.15	
103-65-1	n-Propylbenzene	ND	0.82	ND	0.17	
622-96-8	4-Ethyltoluene	ND	0.82	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.82	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	**2.1**	0.82	**0.44**	0.17	
100-44-7	Benzyl Chloride	ND	0.82	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.82	ND	0.14	
106-46-7	1,4-Dichlorobenzene	ND	0.82	ND	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.82	ND	0.14	
5989-27-5	d-Limonene	**16**	0.82	**2.9**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.82	ND	0.085	
120-82-1	1,2,4-Trichlorobenzene	ND	0.82	ND	0.11	
91-20-3	Naphthalene	ND	0.82	ND	0.16	
87-68-3	Hexachlorobutadiene	ND	0.82	ND	0.077	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **Method Blank** CAS Sample ID: P120324-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120326-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120326-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201043
Client Sample ID: **Method Blank** CAS Sample ID: P120326-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
91-20-3	Naphthalene	ND	0.50	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201043

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 3/13 - 3/14/12
Date(s) Received: 3/16/12
Date(s) Analyzed: 3/24 - 3/26/12

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120324-MB	**102**	**100**	**99**	70-130	
Method Blank	P120326-MB	**104**	**99**	**96**	70-130	
Lab Control Sample	P120324-LCS	**102**	**100**	**100**	70-130	
Lab Control Sample	P120326-LCS	**105**	**98**	**100**	70-130	
15-IF-031212	P1201043-001	**102**	**100**	**97**	70-130	
52-IF-031212	P1201043-002	**101**	**100**	**98**	70-130	
52-IF-031212	P1201043-002DUP	**102**	**99**	**95**	70-130	
10-IF-031212	P1201043-003	**102**	**99**	**96**	70-130	
11-IF-031212	P1201043-004	**102**	**99**	**97**	70-130	
12-IF-031312	P1201043-005	**102**	**99**	**99**	70-130	
13-IF-031312	P1201043-006	**103**	**97**	**98**	70-130	
16-IF-031312	P1201043-007	**102**	**99**	**99**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**183**	**92**	54-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**156**	**80**	55-112	
74-87-3	Chloromethane	190	**155**	**82**	66-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**154**	**77**	64-113	
75-01-4	Vinyl Chloride	194	**154**	**79**	68-115	
106-99-0	1,3-Butadiene	204	**182**	**89**	74-142	
74-83-9	Bromomethane	194	**160**	**82**	72-124	
75-00-3	Chloroethane	196	**157**	**80**	69-115	
64-17-5	Ethanol	928	**800**	**86**	67-127	
75-05-8	Acetonitrile	194	**178**	**92**	63-126	
107-02-8	Acrolein	198	**164**	**83**	62-127	
67-64-1	Acetone	1,010	**833**	**82**	67-106	
75-69-4	Trichlorofluoromethane	202	**161**	**80**	66-121	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**304**	**80**	56-112	
107-13-1	Acrylonitrile	198	**183**	**92**	78-128	
75-35-4	1,1-Dichloroethene	212	**181**	**85**	74-116	
75-09-2	Methylene Chloride	206	**168**	**82**	69-103	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**199**	**96**	76-142	
76-13-1	Trichlorotrifluoroethane	206	**175**	**85**	69-118	
75-15-0	Carbon Disulfide	208	**169**	**81**	71-112	
156-60-5	trans-1,2-Dichloroethene	196	**172**	**88**	73-121	
75-34-3	1,1-Dichloroethane	200	**176**	**88**	71-118	
1634-04-4	Methyl tert-Butyl Ether	198	**177**	**89**	72-115	
108-05-4	Vinyl Acetate	952	**902**	**95**	51-150	
78-93-3	2-Butanone (MEK)	206	**187**	**91**	80-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	206	**179**	**87**	73-117	
141-78-6	Ethyl Acetate	398	**357**	**90**	79-126	
110-54-3	n-Hexane	198	**163**	**82**	68-109	
67-66-3	Chloroform	214	**176**	**82**	67-118	
109-99-9	Tetrahydrofuran (THF)	202	**175**	**87**	57-130	
107-06-2	1,2-Dichloroethane	200	**175**	**88**	62-121	
71-55-6	1,1,1-Trichloroethane	198	**169**	**85**	70-116	
71-43-2	Benzene	198	**170**	**86**	66-103	
56-23-5	Carbon Tetrachloride	202	**178**	**88**	68-123	
110-82-7	Cyclohexane	390	**323**	**83**	73-111	
78-87-5	1,2-Dichloropropane	198	**166**	**84**	74-114	
75-27-4	Bromodichloromethane	198	**172**	**87**	75-120	
79-01-6	Trichloroethene	194	**157**	**81**	65-109	
123-91-1	1,4-Dioxane	200	**173**	**87**	74-120	
80-62-6	Methyl Methacrylate	400	**361**	**90**	80-124	
142-82-5	n-Heptane	196	**171**	**87**	75-114	
10061-01-5	cis-1,3-Dichloropropene	188	**167**	**89**	79-120	
108-10-1	4-Methyl-2-pentanone	204	**183**	**90**	79-128	
10061-02-6	trans-1,3-Dichloropropene	210	**193**	**92**	83-131	
79-00-5	1,1,2-Trichloroethane	196	**168**	**86**	76-116	
108-88-3	Toluene	202	**167**	**83**	64-115	
591-78-6	2-Hexanone	222	**196**	**88**	73-120	
124-48-1	Dibromochloromethane	206	**186**	**90**	72-137	
106-93-4	1,2-Dibromoethane	200	**169**	**85**	70-126	
123-86-4	n-Butyl Acetate	220	**191**	**87**	65-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	200	**182**	**91**	72-118	
127-18-4	Tetrachloroethene	184	**148**	**80**	63-123	
108-90-7	Chlorobenzene	202	**165**	**82**	65-117	
100-41-4	Ethylbenzene	198	**164**	**83**	69-118	
179601-23-1	m,p-Xylenes	392	**336**	**86**	68-119	
75-25-2	Bromoform	208	**177**	**85**	79-150	
100-42-5	Styrene	200	**177**	**89**	74-127	
95-47-6	o-Xylene	194	**164**	**85**	68-118	
111-84-2	n-Nonane	196	**168**	**86**	72-116	
79-34-5	1,1,2,2-Tetrachloroethane	192	**159**	**83**	72-135	
98-82-8	Cumene	190	**161**	**85**	68-119	
80-56-8	alpha-Pinene	186	**163**	**88**	70-123	
103-65-1	n-Propylbenzene	192	**160**	**83**	69-119	
622-96-8	4-Ethyltoluene	198	**165**	**83**	68-121	
108-67-8	1,3,5-Trimethylbenzene	200	**169**	**85**	67-118	
95-63-6	1,2,4-Trimethylbenzene	194	**168**	**87**	66-122	
100-44-7	Benzyl Chloride	200	**192**	**96**	73-144	
541-73-1	1,3-Dichlorobenzene	200	**155**	**78**	64-122	
106-46-7	1,4-Dichlorobenzene	206	**153**	**74**	65-125	
95-50-1	1,2-Dichlorobenzene	198	**154**	**78**	63-128	
5989-27-5	d-Limonene	200	**182**	**91**	72-126	
96-12-8	1,2-Dibromo-3-chloropropane	196	**171**	**87**	72-139	
120-82-1	1,2,4-Trichlorobenzene	196	**157**	**80**	65-139	
91-20-3	Naphthalene	172	**141**	**82**	60-142	
87-68-3	Hexachlorobutadiene	202	**161**	**80**	58-137	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120326-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**191**	**96**	54-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**157**	**80**	55-112	
74-87-3	Chloromethane	190	**153**	**81**	66-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**155**	**78**	64-113	
75-01-4	Vinyl Chloride	194	**154**	**79**	68-115	
106-99-0	1,3-Butadiene	204	**183**	**90**	74-142	
74-83-9	Bromomethane	194	**160**	**82**	72-124	
75-00-3	Chloroethane	196	**159**	**81**	69-115	
64-17-5	Ethanol	928	**796**	**86**	67-127	
75-05-8	Acetonitrile	194	**182**	**94**	63-126	
107-02-8	Acrolein	198	**166**	**84**	62-127	
67-64-1	Acetone	1,010	**839**	**83**	67-106	
75-69-4	Trichlorofluoromethane	202	**163**	**81**	66-121	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**293**	**77**	56-112	
107-13-1	Acrylonitrile	198	**185**	**93**	78-128	
75-35-4	1,1-Dichloroethene	212	**181**	**85**	74-116	
75-09-2	Methylene Chloride	206	**166**	**81**	69-103	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**203**	**98**	76-142	
76-13-1	Trichlorotrifluoroethane	206	**173**	**84**	69-118	
75-15-0	Carbon Disulfide	208	**170**	**82**	71-112	
156-60-5	trans-1,2-Dichloroethene	196	**172**	**88**	73-121	
75-34-3	1,1-Dichloroethane	200	**178**	**89**	71-118	
1634-04-4	Methyl tert-Butyl Ether	198	**178**	**90**	72-115	
108-05-4	Vinyl Acetate	952	**885**	**93**	51-150	
78-93-3	2-Butanone (MEK)	206	**186**	**90**	80-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120326-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	206	**180**	**87**	73-117	
141-78-6	Ethyl Acetate	398	**356**	**89**	79-126	
110-54-3	n-Hexane	198	**166**	**84**	68-109	
67-66-3	Chloroform	214	**177**	**83**	67-118	
109-99-9	Tetrahydrofuran (THF)	202	**173**	**86**	57-130	
107-06-2	1,2-Dichloroethane	200	**179**	**90**	62-121	
71-55-6	1,1,1-Trichloroethane	198	**171**	**86**	70-116	
71-43-2	Benzene	198	**170**	**86**	66-103	
56-23-5	Carbon Tetrachloride	202	**178**	**88**	68-123	
110-82-7	Cyclohexane	390	**323**	**83**	73-111	
78-87-5	1,2-Dichloropropane	198	**167**	**84**	74-114	
75-27-4	Bromodichloromethane	198	**173**	**87**	75-120	
79-01-6	Trichloroethene	194	**156**	**80**	65-109	
123-91-1	1,4-Dioxane	200	**172**	**86**	74-120	
80-62-6	Methyl Methacrylate	400	**360**	**90**	80-124	
142-82-5	n-Heptane	196	**171**	**87**	75-114	
10061-01-5	cis-1,3-Dichloropropene	188	**169**	**90**	79-120	
108-10-1	4-Methyl-2-pentanone	204	**189**	**93**	79-128	
10061-02-6	trans-1,3-Dichloropropene	210	**195**	**93**	83-131	
79-00-5	1,1,2-Trichloroethane	196	**169**	**86**	76-116	
108-88-3	Toluene	202	**161**	**80**	64-115	
591-78-6	2-Hexanone	222	**195**	**88**	73-120	
124-48-1	Dibromochloromethane	206	**178**	**86**	72-137	
106-93-4	1,2-Dibromoethane	200	**162**	**81**	70-126	
123-86-4	n-Butyl Acetate	220	**189**	**86**	65-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120326-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/26/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	200	**176**	**88**	72-118	
127-18-4	Tetrachloroethene	184	**141**	**77**	63-123	
108-90-7	Chlorobenzene	202	**158**	**78**	65-117	
100-41-4	Ethylbenzene	198	**161**	**81**	69-118	
179601-23-1	m,p-Xylenes	392	**325**	**83**	68-119	
75-25-2	Bromoform	208	**169**	**81**	79-150	
100-42-5	Styrene	200	**169**	**85**	74-127	
95-47-6	o-Xylene	194	**158**	**81**	68-118	
111-84-2	n-Nonane	196	**166**	**85**	72-116	
79-34-5	1,1,2,2-Tetrachloroethane	192	**155**	**81**	72-135	
98-82-8	Cumene	190	**156**	**82**	68-119	
80-56-8	alpha-Pinene	186	**157**	**84**	70-123	
103-65-1	n-Propylbenzene	192	**156**	**81**	69-119	
622-96-8	4-Ethyltoluene	198	**159**	**80**	68-121	
108-67-8	1,3,5-Trimethylbenzene	200	**163**	**82**	67-118	
95-63-6	1,2,4-Trimethylbenzene	194	**163**	**84**	66-122	
100-44-7	Benzyl Chloride	200	**185**	**93**	73-144	
541-73-1	1,3-Dichlorobenzene	200	**148**	**74**	64-122	
106-46-7	1,4-Dichlorobenzene	206	**146**	**71**	65-125	
95-50-1	1,2-Dichlorobenzene	198	**148**	**75**	63-128	
5989-27-5	d-Limonene	200	**177**	**89**	72-126	
96-12-8	1,2-Dibromo-3-chloropropane	196	**164**	**84**	72-139	
120-82-1	1,2,4-Trichlorobenzene	196	**150**	**77**	65-139	
91-20-3	Naphthalene	172	**134**	**78**	60-142	
87-68-3	Hexachlorobutadiene	202	**152**	**75**	58-137	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **52-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01845

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	Duplicate Sample Result ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Propene	3.36	1.95	3.17	1.84	3.265	**6**	25	
Dichlorodifluoromethane (CFC 12)	1.97	0.398	1.95	0.394	1.96	**1**	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	478	254	477	253	477.5	**0.2**	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	30.5	12.9	30.5	12.9	30.5	**0**	25	
Trichlorofluoromethane	2.55	0.455	2.56	0.456	2.555	**0.4**	25	
2-Propanol (Isopropyl Alcohol)	15.2	6.20	15.6	6.36	15.4	**3**	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **52-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01845

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	9.65	2.68	9.51	2.64	9.58	**1**	25	
n-Hexane	ND	ND	ND	ND	-	-	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	ND	ND	ND	ND	-	-	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	1.42	0.260	1.40	0.256	1.41	**1**	25	
Benzene	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	9.98	2.65	9.86	2.62	9.92	**1**	25	
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
n-Butyl Acetate	2.10	0.443	2.08	0.439	2.09	**1**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **52-IF-031212**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201043
CAS Sample ID: P1201043-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01845

Date Collected: 3/13/12
Date Received: 3/16/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result **µg/m³**	Duplicate Sample Result **ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
n-Octane	ND	ND	ND	ND	-	-	25	
Tetrachloroethene	ND	ND	ND	ND	-	-	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	ND	ND	-	-	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
n-Nonane	ND	ND	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	1.56	0.280	1.58	0.284	1.57	**1**	25	
n-Propylbenzene	ND	ND	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	17.6	3.16	17.5	3.14	17.55	**0.6**	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Naphthalene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **15-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-001

Test Code: EPA TO-15 SIM Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/16/12
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00187

Initial Pressure (psig): -2.79 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.038	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.19**	0.038	**0.048**	0.0095	
71-43-2	Benzene	**0.76**	0.11	**0.24**	0.036	
79-01-6	Trichloroethene	ND	0.038	ND	0.0071	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.028	
127-18-4	Tetrachloroethene	**0.098**	0.038	**0.015**	0.0056	
100-41-4	Ethylbenzene	**0.53**	0.15	**0.12**	0.035	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.038	ND	0.0056	
91-20-3	Naphthalene	**0.24**	0.15	**0.046**	0.029	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **52-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-002

Test Code: EPA TO-15 SIM Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/16/12
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01845
Initial Pressure (psig): -4.19 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.044	ND	0.017	
107-06-2	1,2-Dichloroethane	**0.19**	0.044	**0.048**	0.011	
71-43-2	Benzene	**0.75**	0.13	**0.24**	0.041	
79-01-6	Trichloroethene	ND	0.044	ND	0.0081	
79-00-5	1,1,2-Trichloroethane	ND	0.18	ND	0.032	
127-18-4	Tetrachloroethene	**0.14**	0.044	**0.020**	0.0065	
100-41-4	Ethylbenzene	**0.54**	0.18	**0.12**	0.040	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.044	ND	0.0064	
91-20-3	Naphthalene	**0.28**	0.18	**0.053**	0.033	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **10-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-003

Test Code: EPA TO-15 SIM Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/16/12
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01842
Initial Pressure (psig): -1.14 Final Pressure (psig): 3.52

Canister Dilution Factor: 1.34

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.034	ND	0.013	
107-06-2	1,2-Dichloroethane	**0.088**	0.034	**0.022**	0.0083	
71-43-2	Benzene	**0.81**	0.10	**0.25**	0.031	
79-01-6	Trichloroethene	ND	0.034	ND	0.0062	
79-00-5	1,1,2-Trichloroethane	ND	0.13	ND	0.025	
127-18-4	Tetrachloroethene	**0.069**	0.034	**0.010**	0.0049	
100-41-4	Ethylbenzene	**0.48**	0.13	**0.11**	0.031	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.034	ND	0.0049	
91-20-3	Naphthalene	**0.21**	0.13	**0.039**	0.026	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **11-IF-031212** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-004

Test Code: EPA TO-15 SIM Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/16/12
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00188

Initial Pressure (psig): -2.57 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.51

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.038	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.085**	0.038	**0.021**	0.0093	
71-43-2	Benzene	**0.52**	0.11	**0.16**	0.035	
79-01-6	Trichloroethene	ND	0.038	ND	0.0070	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.028	
127-18-4	Tetrachloroethene	**0.074**	0.038	**0.011**	0.0056	
100-41-4	Ethylbenzene	**0.20**	0.15	**0.045**	0.035	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.038	ND	0.0055	
91-20-3	Naphthalene	ND	0.15	ND	0.029	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **12-IF-031312** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-005

Test Code: EPA TO-15 SIM Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/16/12
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00185
Initial Pressure (psig): -3.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.68

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.042	ND	0.016	
107-06-2	1,2-Dichloroethane	**2.1**	0.042	**0.51**	0.010	
71-43-2	Benzene	**1.7**	0.13	**0.53**	0.039	
79-01-6	Trichloroethene	**0.094**	0.042	**0.018**	0.0078	
79-00-5	1,1,2-Trichloroethane	ND	0.17	ND	0.031	
127-18-4	Tetrachloroethene	**0.13**	0.042	**0.020**	0.0062	
100-41-4	Ethylbenzene	**0.79**	0.17	**0.18**	0.039	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.042	ND	0.0061	
91-20-3	Naphthalene	**0.23**	0.17	**0.043**	0.032	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **13-IF-031312** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-006

Test Code: EPA TO-15 SIM Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/16/12
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00190
Initial Pressure (psig): -3.01 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.039	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.17**	0.039	**0.043**	0.0097	
71-43-2	Benzene	**0.52**	0.12	**0.16**	0.037	
79-01-6	Trichloroethene	**0.042**	0.039	**0.0079**	0.0073	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.029	
127-18-4	Tetrachloroethene	**0.083**	0.039	**0.012**	0.0058	
100-41-4	Ethylbenzene	**0.21**	0.16	**0.048**	0.036	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.039	ND	0.0057	
91-20-3	Naphthalene	**0.46**	0.16	**0.087**	0.030	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **16-IF-031312** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201043-007

Test Code: EPA TO-15 SIM Date Collected: 3/14/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/16/12
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01428
Initial Pressure (psig): -3.45 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.041	ND	0.016	
107-06-2	1,2-Dichloroethane	**0.12**	0.041	**0.029**	0.010	
71-43-2	Benzene	**7.3**	0.12	**2.3**	0.039	
79-01-6	Trichloroethene	ND	0.041	ND	0.0076	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.030	
127-18-4	Tetrachloroethene	**0.070**	0.041	**0.010**	0.0060	
100-41-4	Ethylbenzene	**2.9**	0.16	**0.67**	0.038	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.041	ND	0.0060	
91-20-3	Naphthalene	**0.29**	0.16	**0.056**	0.031	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201043

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date(s) Collected: 3/13 - 3/14/12
Analyst: Karen Ryan Date(s) Received: 3/16/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 3/27/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120327-MB	**101**	**113**	**114**	70-130	
Lab Control Sample	P120327-LCS	**102**	**112**	**118**	70-130	
15-IF-031212	P1201043-001	**104**	**114**	**111**	70-130	
52-IF-031212	P1201043-002	**102**	**113**	**108**	70-130	
10-IF-031212	P1201043-003	**101**	**112**	**113**	70-130	
11-IF-031212	P1201043-004	**100**	**114**	**115**	70-130	
12-IF-031312	P1201043-005	**99**	**112**	**115**	70-130	
13-IF-031312	P1201043-006	**99**	**112**	**117**	70-130	
16-IF-031312	P1201043-007	**99**	**112**	**119**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201043
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**3.08**	**79**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**3.10**	**78**	51-140	
71-43-2	Benzene	3.96	**3.49**	**88**	56-125	
79-01-6	Trichloroethene	3.88	**2.95**	**76**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**2.95**	**75**	49-137	
127-18-4	Tetrachloroethene	3.68	**2.87**	**78**	58-134	
100-41-4	Ethylbenzene	3.96	**3.00**	**76**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**2.91**	**76**	53-148	
91-20-3	Naphthalene	3.44	**3.05**	**89**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Massachusetts APH **ICAL Method:** M8011412A.M **ICAL Date:** 1/14/12 **Instrument ID:** MS08

Hydrocarbon Ranges

	areas							masses					
C5-C8 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopentane	60478	112606	488243	2480105	4710733	9222808		0.520	1.04	5.20	26.0	52.0	104
n-Hexane	59953	110631	507126	2577865	4931102	9678199		0.490	0.98	4.90	24.5	49.0	98
Cyclohexane	63203	115230	548910	2874726	5524402	10890911		0.500	1.00	5.00	25.0	50.0	100
2,3-Dimethylpentane	68648	127222	585183	2998017	5742104	11319597		0.520	1.04	5.20	26.0	52.0	104
n-Heptane	66143	120286	558074	2884817	5509801	10873046		0.490	0.98	4.90	24.5	49.0	98
n-Octane	76169	137829	632891	3286017	6205035	12092514		0.505	1.01	5.05	25.3	50.5	101
area sum:	**394594**	**723804**	**3320427**	**17101547**	**32623177**	**64077075**	**sum:**	**3.025**	**6.050**	**30.25**	**151.30**	**302.50**	**605.00**
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
2,3-Dimethylheptane	78780	147724	682518	3501487	6691428	13148840		0.485	0.97	4.85	24.3	48.5	97
n-Nonane	77464	140680	662221	3417128	6555165	12940625		0.485	0.97	4.85	24.3	48.5	97
n-Decane	80593	147724	705259	3651028	7021424	13870530		0.490	0.98	4.90	24.5	49.0	98
Butylcyclohexane	88915	166782	776903	4026931	7749936	15415340		0.495	0.99	4.95	24.8	49.5	99
n-Undecane	80867	152557	719618	3772331	7263077	14385881		0.480	0.96	4.80	24.0	48.0	96
n-Dodecane	70045	143746	687255	3673524	7115012	14041583		0.500	1.00	5.00	25.0	50.0	100
area sum:	**476664**	**899213**	**4233774**	**22042429**	**42396042**	**83802799**	**sum:**	**2.935**	**5.870**	**29.35**	**146.90**	**293.50**	**587.00**
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopropylbenzene	10658	19169	87439	448287	849124	1695737		0.485	0.97	4.85	24.3	48.5	97
3-Ethyltoluene	11805	20564	97823	504510	977020	1973178		0.470	0.94	4.70	23.5	47.0	94
1,3,5-Trimethylbenzene	15759	29260	134073	700133	1353305	2726630		0.490	0.98	4.90	24.5	49.0	98
1,2,3-Trimethylbenzene	17195	31328	143473	757946	1493373	3063059		0.495	0.99	4.95	24.8	49.5	99
p-Isopropyltoluene	9490	18116	83401	440962	872799	1814314		0.460	0.92	4.60	23.0	46.0	92
area sum:	**64907**	**118437**	**546209**	**2851838**	**5545621**	**11272918**	**sum:**	**2.400**	**4.800**	**24.00**	**120.10**	**240.00**	**480.00**

Massachusetts APH **ICAL:** M8011412A.M **ICAL Date:** 1/14/12 **Instrument ID:** MS08

Hydrocarbon Ranges

areas

Internal Standards (TIC)	0.5	1	5	25	50	100
Bromochloromethane (IS1)	1312793	1307309	1293586	1289283	1284194	1283817
1,4-Difluorobenzene (IS2)	2547079	2541159	2512498	2475255	2422119	2352159
Chlorobenzene-d5 (IS3)	2929189	2913374	2880258	2895080	2878314	2908396
Internal Standards (EIC)						
Bromochloromethane (IS1)	249696	247899	245985	245585	244327	243561
1,4-Difluorobenzene (IS2)	1153657	1149947	1133233	1136223	1127203	1138730
Chlorobenzene-d5 (IS3)	1007702	1004638	991212	992925	982812	986950
Surrogates (TIC)	**0.5**	**1**	**5**	**25**	**50**	**100**
1,2-Dichloroethane-d4	1162497	1154617	1105630	1126201	1103958	1095945
Toluene-d8	3508018	3490493	3455382	3466688	3437986	3457323
p-Bromofluorobenzene	2298220	2284797	2197239	2227396	2192159	2197999

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RRFs

C5-C8 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	2.8268	2.6009	2.4215	2.4870	2.3919	2.3252	2.509	7.24
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	4.0291	3.8120	3.6383	3.7780	3.6744	3.6163	3.758	4.09
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	0.6709	0.6140	0.5740	0.5979	0.5878	0.5949	0.607	5.63

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **03241202.D**
Data File Path: **J:\MS08\Data\2012_03\24**
Operator: **EM**
Date Acquired: **3/24/12 1:17**
Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15/MAPH CCV STD**
Misc Info: **S25-03151201/S25-03161202**
Instrument Name: **MS08**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	15.89	1097014
16)	Chlorobenzene-d5 (IS3)	21.69	957299

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	8.19	2331141	2.445	147.5	**-2.53**	**-30**	**30**	Pass
4)	n-Hexane	13.09	2450350						
9)	Cyclohexane	15.82	2698497						
10)	2,3-Dimethylpentane	16.17	2863333	**Spike**	**ICAL**				
11)	n-Heptane	17.35	2745668	**Amt (ng)**	**RRF**				
14)	n-Octane	20.69	3146714	151.30	2.509				
			16235703						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	22.31	3331254	3.712	145.1	**-1.23**	**-30**	**30**	Pass
19)	n-Nonane	23.30	3243877						
25)	n-Decane	25.27	3468097						
28)	Butylcyclohexane	25.99	3790882	**Spike**	**ICAL**				
29)	n-Undecane	26.77	3564701	**Amt (ng)**	**RRF**				
30)	n-Dodecane	28.00	3481141	146.90	3.758				
			20879952						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	23.78	435563	0.589	116.6	**-2.92**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	24.52	480909						
24)	1,3,5-Trimethylbenzene	24.66	662082						
26)	p-Isopropyltoluene	25.68	417535	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	25.68	713901	**Amt (ng)**	**RRF**				
			2709990	120.1	0.607				

MH 3/24/12

Response Factor Report MS08

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Dec 12 09:45:45 2011
Response Via : Initial Calibration

Calibration Files
0.1 =12091118.D 0.2 =12091119.D 0.5 =12091120.D 1.0 =12091121.D 5.0 =12091122.D 25 =12091123.D
50 =12091124.D 100 =12091125.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------									
2)	T	Propene	2.487	1.965	1.952	1.692	2.194	2.303	2.185	2.036	2.102	11.62
3)	T	Dichlorodifluo...	3.545	2.805	2.940	2.748	2.432	2.361	2.278	2.199	2.664	16.73
4)	T	Chloromethane	3.290	2.811	2.875	2.512	2.176	2.286	1.977	1.664	2.449	21.62
5)	T	1,2-Dichloro-1...	1.901	1.661	1.575	1.458	1.359	1.333	1.200	1.190	1.460	16.68
6)	T	Vinyl Chloride	2.906	2.590	2.631	2.374	2.145	2.129	1.950	1.939	2.333	15.07
7)	T	1,3-Butadiene	2.145	1.788	1.790	1.718	1.581	1.689	1.621	1.616	1.743	10.33
8)	T	Bromomethane	1.687	1.328	1.349	1.212	1.094	1.142	1.111	1.092	1.252	16.21
9)	T	Chloroethane	1.671	1.259	1.333	1.193	1.101	1.091	1.046	1.044	1.217	17.29
10)	T	Ethanol	2.040	1.345	1.186	1.085	1.022	1.096	1.076	1.064	1.239	27.34
11)	T	Acetonitrile	4.365	2.973	2.723	2.546	2.480	2.562	2.482	2.468	2.825	22.85
12)	T	Acrolein	1.328	0.931	0.907	0.861	0.772	0.814	0.789	0.779	0.897	20.48
13)	T	Acetone	1.645	1.316	1.249	1.129	0.994	1.015	0.981	0.964	1.161	20.26
14)	T	Trichlorofluor...	2.776	2.385	2.496	2.272	2.097	2.135	2.042	2.011	2.277	11.59
15)	T	2-Propanol (Is...		4.463	4.536	4.168	2.920	2.763	2.577	2.672	3.443	26.09
16)	T	Acrylonitrile	2.701	1.907	1.878	1.783	1.745	1.813	1.765	1.738	1.916	16.85
17)	T	1,1-Dichloroet...	1.458	1.418	1.452	1.263	1.206	1.223	1.172	1.152	1.293	9.95
18)	T	2-Methyl-2-Pro...	4.464	3.710	3.939	3.616	3.558	3.584			3.812	9.14
19)	T	Methylene Chlo...			1.958	1.578	1.294	1.273	1.220	1.201	1.421	20.88
20)	T	3-Chloro-1-pro...	2.347	2.260	2.345	2.220	2.150	2.296	2.230	2.191	2.255	3.15
21)	T	Trichlorotrifl...	1.348	1.244	1.299	1.193	1.089	1.098	1.062	1.035	1.171	10.01
22)	T	Carbon Disulfide		6.210	5.678	5.057	4.654	4.699	4.488	4.424	5.030	13.40
23)	T	trans-1,2-Dich...	2.436	2.237	2.206	2.142	1.951	1.953	1.883	1.835	2.080	10.00
24)	T	1,1-Dichloroet...	2.896	2.757	2.747	2.500	2.307	2.379	2.288	2.236	2.514	10.07
25)	T	Methyl tert-Bu...	5.128	4.611	4.650	4.307	4.119	4.185	4.042	3.984	4.378	8.93
26)	T	Vinyl Acetate	0.430	0.368	0.423	0.399	0.393	0.410	0.402	0.398	0.403	4.70
27)	T	2-Butanone (MEK)	1.265	1.003	1.038	0.972	0.927	0.964	0.928	0.794	0.986	13.56
28)	T	cis-1,2-Dichlo...	2.442	2.056	2.101	1.938	1.826	1.836	1.764	1.720	1.960	12.05
29)	T	Diisopropyl Ether	1.446	1.223	1.323	1.262	1.171	1.188	1.153	1.148	1.239	8.26
30)	T	Ethyl Acetate	0.611	0.554	0.573	0.545	0.517	0.535	0.520	0.516	0.546	6.02
31)	T	n-Hexane	3.541	3.006	3.181	2.805	2.582	2.633	2.545	2.543	2.855	12.70

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.679	2.408	2.409	2.204	1.983	2.054	1.974	1.937	2.206	12.18
33)	S	1,2-Dichloroet...	1.586	1.577	1.582	1.590	1.535	1.533	1.520	1.504	1.553	2.19
34)	T	Tetrahydrofura...	1.274	0.932	1.100	0.938	0.910	0.879	0.830	0.821	0.961	15.96
35)	T	Ethyl tert-But...	1.999	1.832	2.033	1.818	1.732	1.757	1.708	1.687	1.821	7.18
36)	T	1,2-Dichloroet...	2.099	1.992	1.976	1.806	1.683	1.700	1.599	1.531	1.798	11.39
37)	IR	1,4-Difluorobenzen...	----------	----------	----------	ISTD	----------	----------	----------	----------	----------	
38)	T	1,1,1-Trichlor...	0.531	0.465	0.486	0.453	0.419	0.434	0.413	0.403	0.451	9.46
39)	T	Isopropyl Acetate	0.227	0.205	0.220	0.206	0.194	0.201	0.192	0.188	0.204	6.71
40)	T	1-Butanol		0.348	0.319	0.300	0.320	0.335	0.324	0.318	0.323	4.66
41)	T	Benzene	1.633	1.385	1.359	1.227	1.136	1.158	1.101	1.070	1.258	15.11
42)	T	Carbon Tetrach...	0.394	0.356	0.369	0.340	0.334	0.352	0.337	0.333	0.352	6.03
43)	T	Cyclohexane	0.666	0.576	0.588	0.539	0.492	0.500	0.479	0.469	0.539	12.59
44)	T	tert-Amyl Meth...	1.092	0.926	0.998	0.937	0.900	0.918	0.881	0.858	0.939	7.95
45)	T	1,2-Dichloropr...	0.397	0.361	0.368	0.324	0.312	0.316	0.300	0.293	0.334	11.12
46)	T	Bromodichlorom...	0.458	0.387	0.392	0.378	0.362	0.378	0.362	0.353	0.384	8.57
47)	T	Trichloroethene	0.466	0.375	0.379	0.344	0.323	0.328	0.316	0.309	0.355	14.62
48)	T	1,4-Dioxane	0.305	0.282	0.288	0.248	0.245	0.246	0.237	0.230	0.260	10.55
49)	T	2,2,4-Trimethy...	1.964	1.629	1.686	1.546	1.447	1.461	1.387	1.337	1.557	12.98
50)	T	Methyl Methacr...	0.156	0.139	0.150	0.135	0.136	0.142	0.136	0.135	0.141	5.53
51)	T	n-Heptane	0.427	0.373	0.385	0.364	0.341	0.344	0.332	0.324	0.361	9.35
52)	T	cis-1,3-Dichlo...	0.571	0.502	0.521	0.491	0.482	0.500	0.481	0.471	0.502	6.33
53)	T	4-Methyl-2-pen...	0.359	0.295	0.308	0.303	0.297	0.303	0.289	0.284	0.305	7.68
54)	T	trans-1,3-Dich...	0.476	0.413	0.443	0.421	0.429	0.453	0.437	0.427	0.437	4.59
55)	T	1,1,2-Trichlor...	0.340	0.301	0.310	0.284	0.276	0.285	0.271	0.265	0.292	8.44
56)	IR	Chlorobenzene-d5 (...	----------	----------	----------	ISTD	----------	----------	----------	----------	----------	
57)	S	Toluene-d8 (SS2)	2.305	2.306	2.305	2.309	2.306	2.300	2.310	2.304	2.306	0.14
58)	T	Toluene	3.623	2.920	3.025	2.738	2.571	2.574	2.473	2.421	2.793	14.19
59)	T	2-Hexanone	2.049	1.429	1.515	1.403	1.395	1.422	1.367	1.337	1.490	15.57
60)	T	Dibromochlorom...	0.696	0.618	0.636	0.636	0.612	0.648	0.629	0.625	0.638	4.14
61)	T	1,2-Dibromoethane	0.831	0.730	0.718	0.658	0.641	0.662	0.638	0.628	0.688	9.97
62)	T	n-Butyl Acetate	2.338	1.850	1.857	1.721	1.704	1.765	1.737	1.737	1.839	11.40
63)	T	n-Octane	0.785	0.652	0.714	0.643	0.602	0.611	0.580	0.572	0.645	11.28
64)	T	Tetrachloroethene	1.090	0.904	0.904	0.826	0.767	0.779	0.756	0.755	0.848	13.63
65)	T	Chlorobenzene	2.375	1.868	1.886	1.744	1.610	1.637	1.574	1.548	1.780	15.30
66)	T	Ethylbenzene	3.846	3.171	3.188	2.956	2.803	2.848	2.743	2.680	3.030	12.51
67)	T	m- & p-Xylenes	3.081	2.499	2.611	2.392	2.216	2.273	2.170	2.112	2.419	13.08
68)	T	Bromoform	0.622	0.494	0.556	0.541	0.551	0.598	0.589	0.594	0.568	7.19
69)	T	Styrene	2.478	1.895	1.937	1.800	1.735	1.803	1.726	1.675	1.881	13.64
70)	T	o-Xylene	3.279	2.708	2.726	2.479	2.331	2.373	2.283	2.224	2.550	13.65

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	2.005	1.753	1.847	1.675	1.581	1.597	1.518	1.470	1.681	10.69
72)	T	1,1,2,2-Tetrac...	1.348	1.164	1.262	1.150	1.083	1.121	1.085	1.066	1.160	8.48
73)	S	Bromofluoroben...	0.774	0.771	0.779	0.781	0.775	0.778	0.782	0.780	0.777	0.50
74)	T	Cumene	4.522	3.495	3.524	3.169	2.962	3.002	2.884	2.831	3.299	16.98
75)	T	alpha-Pinene	1.782	1.636	1.734	1.601	1.537	1.578	1.518	1.498	1.611	6.35
76)	T	n-Propylbenzene	5.441	4.229	4.306	3.924	3.710	3.754	3.553	3.394	4.039	16.01
77)	T	3-Ethyltoluene	4.091	3.373	3.461	3.038	2.964	2.981	2.893	2.845	3.206	13.14
78)	T	4-Ethyltoluene	4.003	3.202	3.301	3.151	2.837	2.983	2.810	2.776	3.133	12.84
79)	T	1,3,5-Trimethy...	3.324	2.662	2.723	2.537	2.378	2.426	2.344	2.403	2.600	12.43
80)	T	alpha-Methylst...	1.742	1.386	1.449	1.371	1.390	1.402	1.354	1.399	1.436	8.80
81)	T	2-Ethyltoluene	4.143	3.362	3.430	3.169	2.975	3.048	2.919	2.985	3.254	12.43
82)	T	1,2,4-Trimethy...	3.356	2.663	2.791	2.551	2.433	2.513	2.454	2.548	2.664	11.37
83)	T	n-Decane	1.969	1.702	1.844	1.705	1.582	1.626	1.554	1.609	1.699	8.39
84)	T	Benzyl Chloride	2.373	1.648	1.772	1.688	1.799	2.058	2.054	2.190	1.948	13.35
85)	T	1,3-Dichlorobe...	2.498	1.658	1.649	1.455	1.377	1.409	1.374	1.436	1.607	23.49
86)	T	1,4-Dichlorobe...	2.655	1.785	1.618	1.492	1.380	1.428	1.388	1.449	1.649	25.99
87)	T	sec-Butylbenzene	4.527	3.773	3.816	3.471	3.264	3.328	3.214	3.176	3.571	12.80
88)	T	4-Isopropyltol...	4.426	3.674	3.683	3.416	3.254	3.356	3.253	3.366	3.554	10.98
89)	T	1,2,3-Trimethy...	3.266	2.650	2.852	2.588	2.471	2.573	2.506	2.619	2.691	9.63
90)	T	1,2-Dichlorobe...	2.173	1.589	1.545	1.435	1.332	1.387	1.370	1.415	1.531	17.89
91)	T	d-Limonene	1.124	0.998	1.106	1.069	1.064	1.072	1.040	1.065	1.067	3.58
92)	T	1,2-Dibromo-3-...	0.563	0.488	0.501	0.486	0.494	0.525	0.532	0.542	0.517	5.50
93)	T	n-Undecane	1.922	1.637	1.755	1.671	1.608	1.630	1.608	1.592	1.678	6.63
94)	T	1,2,4-Trichlor...		1.335	1.165	1.062	1.017	1.071	1.086	1.118	1.122	9.32
95)	T	Naphthalene		4.848	3.923	3.638	3.497	3.721	3.755	3.783	3.881	11.50
96)	T	n-Dodecane	1.866	1.599	1.669	1.586	1.545	1.575	1.553	1.509	1.613	6.99
97)	T	Hexachlorobuta...	0.841	0.749	0.730	0.673	0.635	0.664	0.663	0.676	0.704	9.50
98)	T	Cyclohexanone	1.172	0.979	1.021	0.969	0.952	0.962	0.931	0.903	0.986	8.37
99)	T	tert-Butylbenzene	3.486	2.799	2.880	2.658	2.449	2.533	2.453	2.528	2.723	12.71
100)	T	n-Butylbenzene	3.596	2.904	2.958	2.670	2.572	2.625	2.613	2.593	2.817	12.33

(#) = Out of Range

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\24\
Data File : 03241201.D
Acq On : 24 Mar 2012 00:34
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 24 08:11:33 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	83	-0.01
2	T	Propene	2.102	1.911	9.1	69	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.198	17.5	77	0.01
4	T	Chloromethane	2.449	2.091	14.6	76	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.164	20.3	73	0.00
6	T	Vinyl Chloride	2.333	1.919	17.7	75	0.00
7	T	1,3-Butadiene	1.743	1.594	8.5	78	0.00
8	T	Bromomethane	1.252	1.056	15.7	77	0.00
9	T	Chloroethane	1.217	1.019	16.3	78	0.00
10	T	Ethanol	1.239	1.162	6.2	88	-0.07
11	T	Acetonitrile	2.825	2.548	9.8	83	-0.05
12	T	Acrolein	0.897	0.744	17.1	76	-0.02
13	T	Acetone	1.161	0.998	14.0	82	-0.04
14	T	Trichlorofluoromethane	2.277	2.018	11.4	79	0.00
15	T	2-Propanol (Isopropanol)	3.443	3.218	6.5	97	-0.05
16	T	Acrylonitrile	1.916	1.760	8.1	81	-0.03
17	T	1,1-Dichloroethene	1.293	1.152	10.9	78	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.168	16.9	74	-0.03
19	T	Methylene Chloride	1.421	1.188	16.4	78	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.246	0.4	81	-0.01
21	T	Trichlorotrifluoroethane	1.171	1.027	12.3	78	0.00
22	T	Carbon Disulfide	5.030	4.402	12.5	78	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.877	9.8	80	0.00
24	T	1,1-Dichloroethane	2.514	2.309	8.2	81	-0.01
25	T	Methyl tert-Butyl Ether	4.378	4.054	7.4	81	0.00
26	T	Vinyl Acetate	0.403	0.395	2.0	80	-0.03
27	T	2-Butanone (MEK)	0.986	0.934	5.3	81	-0.02
28	T	cis-1,2-Dichloroethene	1.960	1.765	9.9	80	-0.01
29	T	Diisopropyl Ether	1.239	1.143	7.7	80	0.00
30	T	Ethyl Acetate	0.546	0.519	4.9	81	-0.02
31	T	n-Hexane	2.855	2.469	13.5	78	0.00
32	T	Chloroform	2.206	1.955	11.4	79	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.606	-3.4	87	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.863	10.2	82	0.00
35	T	Ethyl tert-Butyl Ether	1.821	1.683	7.6	80	0.00
36	T	1,2-Dichloroethane	1.798	1.636	9.0	80	-0.01
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	86	0.00
38	T	1,1,1-Trichloroethane	0.451	0.399	11.5	79	0.00

MH 3/24/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\24\
Data File : 03241201.D
Acq On : 24 Mar 2012 00:34
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 24 08:11:33 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.187	8.3	80	-0.02
40	T	1-Butanol	0.323	0.343	-6.2	88	-0.05
41	T	Benzene	1.258	1.072	14.8	80	-0.01
42	T	Carbon Tetrachloride	0.352	0.318	9.7	78	-0.01
43	T	Cyclohexane	0.539	0.465	13.7	80	-0.01
44	T	tert-Amyl Methyl Ether	0.939	0.851	9.4	80	0.00
45	T	1,2-Dichloropropane	0.334	0.293	12.3	80	-0.01
46	T	Bromodichloromethane	0.384	0.350	8.9	80	0.00
47	T	Trichloroethene	0.355	0.296	16.6	78	-0.01
48	T	1,4-Dioxane	0.260	0.235	9.6	82	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.379	11.4	81	0.00
50	T	Methyl Methacrylate	0.141	0.132	6.4	81	-0.02
51	T	n-Heptane	0.361	0.325	10.0	81	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.468	6.8	81	0.00
53	T	4-Methyl-2-pentanone	0.305	0.289	5.2	82	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.422	3.4	80	0.00
55	T	1,1,2-Trichloroethane	0.292	0.259	11.3	78	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	86	0.00
57	S	Toluene-d8 (SS2)	2.306	2.302	0.2	86	0.00
58	T	Toluene	2.793	2.399	14.1	80	0.00
59	T	2-Hexanone	1.490	1.370	8.1	83	-0.01
60	T	Dibromochloromethane	0.638	0.588	7.8	78	0.00
61	T	1,2-Dibromoethane	0.688	0.601	12.6	78	0.00
62	T	n-Butyl Acetate	1.839	1.689	8.2	82	-0.01
63	T	n-Octane	0.645	0.606	6.0	85	0.00
64	T	Tetrachloroethene	0.848	0.706	16.7	78	0.00
65	T	Chlorobenzene	1.780	1.511	15.1	79	0.00
66	T	Ethylbenzene	3.030	2.603	14.1	78	0.00
67	T	m- & p-Xylenes	2.419	2.148	11.2	81	-0.01
68	T	Bromoform	0.568	0.547	3.7	78	0.00
69	T	Styrene	1.881	1.716	8.8	82	-0.01
70	T	o-Xylene	2.550	2.246	11.9	81	-0.01
71	T	n-Nonane	1.681	1.511	10.1	81	0.00
72	T	1,1,2,2-Tetrachloroethane	1.160	1.028	11.4	79	-0.01
73	S	Bromofluorobenzene (SS3)	0.777	0.795	-2.3	88	0.00
74	T	Cumene	3.299	2.937	11.0	84	0.00
75	T	alpha-Pinene	1.611	1.440	10.6	78	0.00
76	T	n-Propylbenzene	4.039	3.517	12.9	80	0.00

LH 3/24/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\24\
Data File : 03241201.D
Acq On : 24 Mar 2012 00:34
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 24 08:11:33 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.756	14.0	79	0.00
78	T	4-Ethyltoluene	3.133	2.746	12.4	79	-0.01
79	T	1,3,5-Trimethylbenzene	2.600	2.260	13.1	80	-0.01
80	T	alpha-Methylstyrene	1.436	1.296	9.7	79	-0.01
81	T	2-Ethyltoluene	3.254	2.808	13.7	79	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.335	12.3	80	-0.01
83	T	n-Decane	1.699	1.527	10.1	81	-0.01
84	T	Benzyl Chloride	1.948	2.052	-5.3	86	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.288	19.9	79	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.298	21.3	78	-0.01
87	T	sec-Butylbenzene	3.571	3.106	13.0	80	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.122	12.2	80	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.373	11.8	79	0.00
90	T	1,2-Dichlorobenzene	1.531	1.255	18.0	78	-0.01
91	T	d-Limonene	1.067	0.988	7.4	79	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.478	7.5	78	-0.01
93	T	n-Undecane	1.678	1.536	8.5	81	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.967	13.8	77	-0.01
95	T	Naphthalene	3.881	3.454	11.0	80	0.00
96	T	n-Dodecane	1.613	1.520	5.8	83	0.00
97	T	Hexachlorobutadiene	0.704	0.595	15.5	77	0.00
98	T	Cyclohexanone	0.986	0.960	2.6	86	-0.02
99	T	tert-Butylbenzene	2.723	2.380	12.6	81	-0.01
100	T	n-Butylbenzene	2.817	2.441	13.3	80	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

VH 3/24/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\26\
Data File : 03261201.D
Acq On : 26 Mar 2012 8:12
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 26 10:52:52 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	84	-0.01
2	T	Propene	2.102	1.914	8.9	70	0.01
3	T	Dichlorodifluoromethane (CF	2.664	2.234	16.1	80	0.01
4	T	Chloromethane	2.449	2.138	12.7	79	0.01
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.163	20.3	74	0.00
6	T	Vinyl Chloride	2.333	1.948	16.5	77	0.00
7	T	1,3-Butadiene	1.743	1.643	5.7	82	0.00
8	T	Bromomethane	1.252	1.073	14.3	79	0.00
9	T	Chloroethane	1.217	1.032	15.2	80	0.00
10	T	Ethanol	1.239	1.177	5.0	91	-0.06
11	T	Acetonitrile	2.825	2.611	7.6	86	-0.04
12	T	Acrolein	0.897	0.758	15.5	79	-0.02
13	T	Acetone	1.161	1.022	12.0	85	-0.04
14	T	Trichlorofluoromethane	2.277	2.061	9.5	81	0.00
15	T	2-Propanol (Isopropanol)	3.443	3.491	-1.4	107	-0.04
16	T	Acrylonitrile	1.916	1.792	6.5	83	-0.03
17	T	1,1-Dichloroethene	1.293	1.150	11.1	79	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.044	20.1	72	-0.02
19	T	Methylene Chloride	1.421	1.194	16.0	79	0.00
20	T	3-Chloro-1-propene (Allyl C	2.255	2.342	-3.9	86	-0.01
21	T	Trichlorotrifluoroethane	1.171	1.029	12.1	79	0.00
22	T	Carbon Disulfide	5.030	4.487	10.8	81	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.929	7.3	83	0.00
24	T	1,1-Dichloroethane	2.514	2.351	6.5	83	-0.01
25	T	Methyl tert-Butyl Ether	4.378	4.109	6.1	83	0.00
26	T	Vinyl Acetate	0.403	0.398	1.2	82	-0.03
27	T	2-Butanone (MEK)	0.986	0.944	4.3	83	-0.02
28	T	cis-1,2-Dichloroethene	1.960	1.798	8.3	83	-0.01
29	T	Diisopropyl Ether	1.239	1.141	7.9	81	0.00
30	T	Ethyl Acetate	0.546	0.526	3.7	83	-0.02
31	T	n-Hexane	2.855	2.516	11.9	81	0.00
32	T	Chloroform	2.206	1.991	9.7	82	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.635	-5.3	90	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.875	8.9	84	0.00
35	T	Ethyl tert-Butyl Ether	1.821	1.692	7.1	81	-0.01
36	T	1,2-Dichloroethane	1.798	1.684	6.3	84	-0.01
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
38	T	1,1,1-Trichloroethane	0.451	0.401	11.1	81	0.00

EM 3/26/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\26\
Data File : 03261201.D
Acq On : 26 Mar 2012 8:12
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 26 10:52:52 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.190	6.9	83	-0.02
40	T	1-Butanol	0.323	0.349	-8.0	92	-0.05
41	T	Benzene	1.258	1.071	14.9	81	-0.01
42	T	Carbon Tetrachloride	0.352	0.319	9.4	80	-0.01
43	T	Cyclohexane	0.539	0.465	13.7	82	-0.01
44	T	tert-Amyl Methyl Ether	0.939	0.856	8.8	82	-0.01
45	T	1,2-Dichloropropane	0.334	0.294	12.0	82	-0.01
46	T	Bromodichloromethane	0.384	0.349	9.1	81	0.00
47	T	Trichloroethene	0.355	0.294	17.2	79	-0.01
48	T	1,4-Dioxane	0.260	0.234	10.0	83	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.386	11.0	83	-0.01
50	T	Methyl Methacrylate	0.141	0.133	5.7	82	-0.02
51	T	n-Heptane	0.361	0.327	9.4	84	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.470	6.4	83	0.00
53	T	4-Methyl-2-pentanone	0.305	0.294	3.6	85	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.425	2.7	82	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.259	11.3	80	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	89	0.00
57	S	Toluene-d8 (SS2)	2.306	2.288	0.8	88	0.00
58	T	Toluene	2.793	2.371	15.1	82	0.00
59	T	2-Hexanone	1.490	1.390	6.7	87	-0.02
60	T	Dibromochloromethane	0.638	0.586	8.2	80	0.00
61	T	1,2-Dibromoethane	0.688	0.597	13.2	80	-0.01
62	T	n-Butyl Acetate	1.839	1.708	7.1	86	-0.01
63	T	n-Octane	0.645	0.610	5.4	88	-0.01
64	T	Tetrachloroethene	0.848	0.690	18.6	78	0.00
65	T	Chlorobenzene	1.780	1.493	16.1	81	0.00
66	T	Ethylbenzene	3.030	2.671	11.8	83	0.00
67	T	m- & p-Xylenes	2.419	2.135	11.7	83	-0.02
68	T	Bromoform	0.568	0.534	6.0	79	-0.01
69	T	Styrene	1.881	1.689	10.2	83	-0.01
70	T	o-Xylene	2.550	2.229	12.6	83	-0.01
71	T	n-Nonane	1.681	1.513	10.0	84	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.030	11.2	81	-0.02
73	S	Bromofluorobenzene (SS3)	0.777	0.764	1.7	87	0.00
74	T	Cumene	3.299	2.910	11.8	86	0.00
75	T	alpha-Pinene	1.611	1.440	10.6	81	0.00
76	T	n-Propylbenzene	4.039	3.488	13.6	82	0.00

3/26/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\26\
Data File : 03261201.D
Acq On : 26 Mar 2012 8:12
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 26 10:52:52 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.755	14.1	82	-0.01
78	T	4-Ethyltoluene	3.133	2.693	14.0	80	-0.01
79	T	1,3,5-Trimethylbenzene	2.600	2.250	13.5	82	-0.01
80	T	alpha-Methylstyrene	1.436	1.270	11.6	80	-0.01
81	T	2-Ethyltoluene	3.254	2.799	14.0	81	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.317	13.0	82	-0.02
83	T	n-Decane	1.699	1.524	10.3	83	-0.01
84	T	Benzyl Chloride	1.948	2.075	-6.5	89	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.267	21.2	80	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.269	23.0	79	-0.02
87	T	sec-Butylbenzene	3.571	3.090	13.5	82	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.089	13.1	81	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.373	11.8	82	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.237	19.2	79	-0.01
91	T	d-Limonene	1.067	0.991	7.1	82	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.479	7.4	81	-0.01
93	T	n-Undecane	1.678	1.541	8.2	84	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.944	15.9	78	-0.01
95	T	Naphthalene	3.881	3.423	11.8	81	-0.01
96	T	n-Dodecane	1.613	1.536	4.8	86	0.00
97	T	Hexachlorobutadiene	0.704	0.581	17.5	77	0.00
98	T	Cyclohexanone	0.986	0.965	2.1	89	-0.02
99	T	tert-Butylbenzene	2.723	2.359	13.4	82	-0.01
100	T	n-Butylbenzene	2.817	2.442	13.3	82	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Cm 3/26/12

Response Factor Report MS07

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
1)	I	Bromochloromethan	ISTD										
2)	T	Dichlorodifluorom	3.784	3.527	3.467	3.822	3.279	2.986	2.875	3.155	2.920	3.313	10.83
3)	T	Chloromethane		1.470	0.956	1.190	0.904	0.778	0.569	0.897	0.827	0.949	28.81
4)	T	Vinyl Chloride	2.802	2.749	2.588	3.044	2.597	2.406	2.314	2.588	2.446	2.615	8.57
5)	T	Bromomethane	1.894	1.496	1.211	1.613	1.335	1.208	1.105	1.433	1.367	1.407	17.11
6)	T	Chloroethane	1.511	1.416	1.357	1.517	1.295	1.237	1.195	1.312	1.224	1.340	8.92
7)	T	Acetone				1.548	1.214	1.122	1.080	1.193	1.090	1.208	14.52
8)	T	Trichlorofluorome	3.051	2.887	2.831	3.145	2.692	2.565	2.447	2.691	2.536	2.761	8.59
9)	T	1,1-Dichloroethen	1.591	1.440	1.366	1.547	1.322	1.229	1.214	1.385	1.295	1.376	9.52
10)	T	Methylene Chlorid		2.134	1.795	1.866	1.536	1.426	1.404	1.494	1.411	1.633	16.43
11)	T	Trichlorotrifluor	1.408	1.325	1.295	1.376	1.169	1.081	1.062	1.170	1.097	1.220	10.87
12)	T	trans-1,2-Dichlor	1.972	1.710	1.589	1.762	1.505	1.406	1.393	1.512	1.439	1.588	12.18
13)	T	1,1-Dichloroethan	3.265	3.020	3.016	3.383	2.925	2.756	2.681	2.937	2.841	2.980	7.60
14)	T	Methyl tert-Butyl	5.168	4.740	4.762	5.045	4.335	4.137	4.166	4.690	4.471	4.613	7.90
15)	T	cis-1,2-Dichloroe	1.885	1.626	1.630	1.776	1.524	1.434	1.388	1.575	1.482	1.591	10.09
16)	T	Chloroform			3.041	3.257	2.586	2.390	2.280	2.524	2.374	2.636	14.03
17)	S	1,2-Dichloroethan	2.000	2.002	2.032	2.018	1.989	1.973	1.960	1.938	1.932	1.983	1.75
18)	T	1,2-Dichloroethan	2.582	2.460	2.375	2.604	2.222	2.090	1.988	2.222	2.094	2.293	9.73
19)	T	1,1,1-Trichloroet	2.587	2.431	2.340	2.573	2.191	2.059	2.007	2.278	2.150	2.291	9.18
20)	T	Benzene			7.536	7.534	6.055	5.665	5.395	5.903	5.468	6.222	14.88
21)	T	Carbon Tetrachlor	2.280	1.842	1.769	1.950	1.676	1.579	1.549	1.771	1.692	1.790	12.41
22)	I	1,4-Difluorobenze	ISTD										
23)	T	1,2-Dichloropropa	0.417	0.397	0.373	0.409	0.354	0.331	0.319	0.358	0.336	0.366	9.68
24)	T	Bromodichlorometh	0.491	0.464	0.436	0.489	0.420	0.398	0.394	0.447	0.416	0.439	8.26
25)	T	Trichloroethene	0.418	0.379	0.349	0.390	0.324	0.305	0.287	0.326	0.307	0.343	12.96
26)	T	1,4-Dioxane	0.324	0.290	0.270	0.278	0.242	0.231	0.227	0.258	0.243	0.263	11.99
27)	T	cis-1,3-Dichlorop	0.567	0.523	0.508	0.540	0.499	0.484	0.488	0.559	0.522	0.521	5.67
28)	T	trans-1,3-Dichlor	0.457	0.434	0.431	0.444	0.419	0.409	0.417	0.505	0.482	0.444	7.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
29)	T	1,1,2-Trichloroet	0.315	0.296	0.286	0.305	0.263	0.248	0.242	0.274	0.257	0.276	9.32
30)	S	Toluene-d8 (SS2)	1.053	1.071	1.054	1.047	1.051	1.052	1.071	1.060	1.049	1.056	0.84
31)	T	Toluene	1.782	1.541	1.420	1.485	1.269	1.198	1.177	1.307	1.186	1.374	14.76
32)	T	1,2-Dibromoethane	0.379	0.362	0.345	0.362	0.323	0.307	0.304	0.351	0.331	0.340	7.65
33)	T	Tetrachloroethene	0.423	0.394	0.371	0.400	0.341	0.320	0.311	0.347	0.326	0.359	11.03
34)	I	Chlorobenzene-d5	ISTD										
35)	T	Chlorobenzene	4.581	4.172	4.017	4.308	3.688	3.469	3.311	3.705	3.345	3.844	11.68
36)	T	Ethylbenzene	7.604	7.082	6.707	7.235	6.297	6.070	5.915	6.682	5.878	6.608	9.30
37)	T	m,p-Xylene	5.861	5.347	5.132	5.536	4.930	4.777	4.719	5.268	4.558	5.125	8.24
38)	T	o-Xylene	6.505	5.826	5.526	5.889	5.188	4.995	4.950	5.594	4.932	5.490	9.67
39)	T	1,1,2,2-Tetrachlo	2.655	2.674	2.710	2.646	2.437	2.371	2.298	2.761	2.498	2.561	6.40
40)	S	Bromofluorobenzen	1.712	1.701	1.695	1.697	1.683	1.680	1.670	1.642	1.593	1.675	2.20
41)	T	1,3-Dichlorobenze	3.304	3.261	3.222	3.204	2.835	2.719	2.608	3.138	2.846	3.015	8.71
42)	T	1,4-Dichlorobenze	3.470	3.303	3.208	3.208	2.803	2.671	2.579	3.174	2.891	3.034	10.13
43)	T	1,2-Dichlorobenze	3.271	3.123	3.112	3.026	2.662	2.536	2.418	3.053	2.772	2.886	10.31
44)	T	1,2,4-Trichlorobe	2.184	2.118	2.169	1.753	1.641	1.608	1.575	2.139	1.978	1.907	13.66
45)	T	Naphthalene	6.857	6.355	6.704	5.143	5.107	5.172	5.297	8.126	7.328	6.232	17.82
46)	T	Hexachlorobutadie	1.486	1.423	1.403	1.217	1.055	1.013	0.975	1.227	1.145	1.216	15.40

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\27\
Data File : 03271203.D
Acq On : 27 Mar 2012 12:37 pm
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 27 13:11:37 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	94	0.00
2	T	Dichlorodifluoromethane (CF	3.313	2.627	20.7	76	0.00
3	T	Chloromethane	0.949	0.752	20.8	78	0.00
4	T	Vinyl Chloride	2.615	2.114	19.2	77	0.00
5	T	Bromomethane	1.407	1.229	12.7	87	0.00
6	T	Chloroethane	1.340	1.087	18.9	79	0.00
7	T	Acetone	1.208	1.101	8.9	86	0.00
8	T	Trichlorofluoromethane	2.761	2.220	19.6	78	0.00
9	T	1,1-Dichloroethene	1.376	1.159	15.8	83	0.00
10	T	Methylene Chloride	1.633	1.304	20.1	80	0.00
11	T	Trichlorotrifluoroethane	1.220	1.044	14.4	84	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.286	19.0	81	0.00
13	T	1,1-Dichloroethane	2.980	2.440	18.1	79	0.00
14	T	Methyl tert-Butyl Ether	4.613	3.724	19.3	81	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.352	15.0	84	0.00
16	T	Chloroform	2.636	2.203	16.4	80	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.936	2.4	92	0.00
18	T	1,2-Dichloroethane	2.293	1.762	23.2	75	0.00
19	T	1,1,1-Trichloroethane	2.291	1.897	17.2	82	0.00
20	T	Benzene	6.222	5.363	13.8	84	0.00
21	T	Carbon Tetrachloride	1.790	1.447	19.2	82	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	103	0.00
23	T	1,2-Dichloropropane	0.366	0.276	24.6	80	0.00
24	T	Bromodichloromethane	0.439	0.326	25.7	80	0.00
25	T	Trichloroethene	0.343	0.263	23.3	84	0.00
26	T	1,4-Dioxane	0.263	0.203	22.8	87	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.407	21.9	84	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.346	22.1	85	0.00
29	T	1,1,2-Trichloroethane	0.276	0.213	22.8	83	0.00
30	S	Toluene-d8 (SS2)	1.056	1.183	-12.0	116	0.00
31	T	Toluene	1.374	1.058	23.0	86	0.00
32	T	1,2-Dibromoethane	0.340	0.270	20.6	86	0.00
33	T	Tetrachloroethene	0.359	0.293	18.4	89	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	103	0.00
35	T	Chlorobenzene	3.844	3.159	17.8	88	0.00
36	T	Ethylbenzene	6.608	5.258	20.4	86	0.00
37	T	m,p-Xylene	5.125	4.158	18.9	87	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\27\
Data File : 03271203.D
Acq On : 27 Mar 2012 12:37 pm
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 27 13:11:37 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	4.453	18.9	89	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.083	18.7	88	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.976	-18.0	121	0.00
41	T	1,3-Dichlorobenzene	3.015	2.675	11.3	97	0.00
42	T	1,4-Dichlorobenzene	3.034	2.637	13.1	97	0.00
43	T	1,2-Dichlorobenzene	2.886	2.578	10.7	100	0.00
44	T	1,2,4-Trichlorobenzene	1.907	1.894	0.7	119	0.00
45	T	Naphthalene	6.232	6.662	-6.9	135	0.00
46	T	Hexachlorobutadiene	1.216	1.119	8.0	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

KR 3/27/12

LABORATORY REPORT

April 3, 2012

Christopher Cote
Montana DEQ
1100 N. Last Chance Gulch
Helena, MT 59601

RE: Background Indoor Air Study

Dear Christopher:

Enclosed are the results of the samples submitted to our laboratory on March 20, 2012. For your reference, these analyses have been assigned our service request number P1201074.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-11-2; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA015272011-1; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

For Kate Aguilera
Project Manager

Client: Montana DEQ CAS Project No: P1201074
Project: Background Indoor Air Study

CASE NARRATIVE

The samples were received intact under chain of custody on March 20, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009.

Volatile Organic Compound Analysis

The samples were also analyzed in Scan and SIM mode for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

DETAIL SUMMARY REPORT

Client: Montana DEQ
Service Request: P1201074
Project ID: Background Indoor Air Study

Date Received: 3/20/2012
Time Received: 10:05

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC Cans	TO-15 - VOC SIM
51-1F-030512	P1201074-001	Air	3/5/2012	20:30	AC01472	-4.07	3.59	X	X	X
04-1F-031312	P1201074-002	Air	3/13/2012	16:32	AC01828	-4.19	3.58	X	X	X

Columbia Analytical Services

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1201074

Company Name & Address (Reporting Information)	MT DEQ, PO Box 200901, Helena MT 59620
Project Name	Background Indoor Air Study
Project Number	
Project Manager	Chris Cote
P.O. # / Billing Information	reference as: Background Indoor Air Study; Bill to Chris Cote, MDEQ
Phone	406 841 5078
Fax	406-841-5050
Email Address for Result Reporting	ccote2@mt.gov Martichladman
Sampler (Print & Sign)	

CAS Contact: Nicole Pannone

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO 15 TO15 SIM	APH	Comments e.g. Actual Preservative or specific instructions
51-1F-030512	①-4.17	3/5/12	830P						X	X	Analyze
04-1F-031312	②-4.30	~~3/5/12~~ 3/13/12 AM	432P	AL01820	FC A00780	25.5	9.0		X	X	Project specific list of compounds to project specific reporting limits

4 of 42

Report Tier Levels - please select

Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) X
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: GV + Excell

Project Requirements (MRLs, QAPP)

	Date	Time		Date	Time
Relinquished by: (Signature)	3/13/12	315P	Received by: (Signature)	3/14/12	1035
Relinquished by: (Signature)			Received by: (Signature)		

Cooler / Blank Temperature ____°C

COC AIR REV 3-11

Columbia Analytical Services
Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201074

Project: Background Indoor Air Study

Sample(s) received on: 3/20/12 Date opened: 3/20/12 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201074-001.01	6.0 L Ambient Can					
P1201074-002.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **51-1F-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201074
CAS Sample ID: P1201074-001

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan/Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01472

Date Collected: 3/5/12
Date Received: 3/20/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.07 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.72

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**180**	34	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**40**	17	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **04-1F-031312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201074
CAS Sample ID: P1201074-002

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01828

Date Collected: 3/13/12
Date Received: 3/20/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.74

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	35	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**21**	17	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.7	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201074
CAS Sample ID: P120324-MB

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**22.5**	**92**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**23.3**	**93**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**43.0**	**89**	70-130	

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **51-1F-030512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201074
CAS Sample ID: P1201074-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Lusine Hakobyan/Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01472

Date Collected: 3/5/12
Date Received: 3/20/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -4.07 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**5.9**	0.86	**3.4**	0.50	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.86	**0.42**	0.17	
74-87-3	Chloromethane	ND	0.86	ND	0.42	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.86	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.86	ND	0.39	
74-83-9	Bromomethane	ND	0.86	ND	0.22	
75-00-3	Chloroethane	ND	0.86	ND	0.33	
64-17-5	Ethanol	**1,800**	86	**940**	46	**D**
75-05-8	Acetonitrile	ND	0.86	ND	0.51	
107-02-8	Acrolein	**3.8**	3.4	**1.7**	1.5	
67-64-1	Acetone	**76**	8.6	**32**	3.6	
75-69-4	Trichlorofluoromethane	**1.1**	0.86	**0.20**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**34**	1.7	**14**	0.70	
107-13-1	Acrylonitrile	ND	0.86	ND	0.40	
75-35-4	1,1-Dichloroethene	ND	0.86	ND	0.22	
75-09-2	Methylene Chloride	ND	0.86	ND	0.25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.86	ND	0.27	
76-13-1	Trichlorotrifluoroethane	ND	0.86	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.6	ND	2.8	
156-60-5	trans-1,2-Dichloroethene	ND	0.86	ND	0.22	
75-34-3	1,1-Dichloroethane	ND	0.86	ND	0.21	
1634-04-4	Methyl tert-Butyl Ether	ND	0.86	ND	0.24	
108-05-4	Vinyl Acetate	**18**	8.6	**5.1**	2.4	
78-93-3	2-Butanone (MEK)	ND	8.6	ND	2.9	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **51-1F-030512** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201074-001

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/20/12
Analyst: Lusine Hakobyan/Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01472

Initial Pressure (psig): -4.07 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.86	ND	0.22	
141-78-6	Ethyl Acetate	**24**	1.7	**6.6**	0.48	
110-54-3	n-Hexane	**6.8**	0.86	**1.9**	0.24	
67-66-3	Chloroform	ND	0.86	ND	0.18	
109-99-9	Tetrahydrofuran (THF)	ND	0.86	ND	0.29	
71-55-6	1,1,1-Trichloroethane	ND	0.86	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.86	ND	0.14	
110-82-7	Cyclohexane	ND	1.7	ND	0.50	
78-87-5	1,2-Dichloropropane	ND	0.86	ND	0.19	
75-27-4	Bromodichloromethane	ND	0.86	ND	0.13	
123-91-1	1,4-Dioxane	ND	0.86	ND	0.24	
80-62-6	Methyl Methacrylate	**3.2**	1.7	**0.79**	0.42	
142-82-5	n-Heptane	**2.7**	0.86	**0.66**	0.21	
10061-01-5	cis-1,3-Dichloropropene	ND	0.86	ND	0.19	
108-10-1	4-Methyl-2-pentanone	ND	0.86	ND	0.21	
10061-02-6	trans-1,3-Dichloropropene	ND	0.86	ND	0.19	
108-88-3	Toluene	**29**	0.86	**7.7**	0.23	
591-78-6	2-Hexanone	**1.0**	0.86	**0.25**	0.21	
124-48-1	Dibromochloromethane	ND	0.86	ND	0.10	
106-93-4	1,2-Dibromoethane	ND	0.86	ND	0.11	
123-86-4	n-Butyl Acetate	**3.0**	0.86	**0.64**	0.18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201074
Client Sample ID: **51-1F-030512** CAS Sample ID: P1201074-001
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/20/12
Analyst: Lusine Hakobyan/Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01472

Initial Pressure (psig): -4.07 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	**1.2**	0.86	**0.25**	0.18	
108-90-7	Chlorobenzene	ND	0.86	ND	0.19	
179601-23-1	m,p-Xylenes	**6.3**	1.7	**1.4**	0.40	
75-25-2	Bromoform	ND	0.86	ND	0.083	
100-42-5	Styrene	**2.1**	0.86	**0.49**	0.20	
95-47-6	o-Xylene	**2.0**	0.86	**0.45**	0.20	
111-84-2	n-Nonane	ND	0.86	ND	0.16	
98-82-8	Cumene	ND	0.86	ND	0.18	
80-56-8	alpha-Pinene	**10**	0.86	**1.8**	0.15	
103-65-1	n-Propylbenzene	ND	0.86	ND	0.18	
622-96-8	4-Ethyltoluene	ND	0.86	ND	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.86	ND	0.18	
95-63-6	1,2,4-Trimethylbenzene	**1.4**	0.86	**0.28**	0.18	
100-44-7	Benzyl Chloride	ND	0.86	ND	0.17	
541-73-1	1,3-Dichlorobenzene	ND	0.86	ND	0.14	
106-46-7	1,4-Dichlorobenzene	ND	0.86	ND	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.86	ND	0.14	
5989-27-5	d-Limonene	**160**	0.86	**29**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.86	ND	0.089	
120-82-1	1,2,4-Trichlorobenzene	ND	0.86	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.86	ND	0.081	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **04-1F-031312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201074
CAS Sample ID: P1201074-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01828

Date Collected: 3/13/12
Date Received: 3/20/12
Date Analyzed: 3/24/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**7.4**	0.87	**4.3**	0.51	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.87	**0.42**	0.18	
74-87-3	Chloromethane	ND	0.87	ND	0.42	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.87	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.87	ND	0.39	
74-83-9	Bromomethane	ND	0.87	ND	0.22	
75-00-3	Chloroethane	ND	0.87	ND	0.33	
64-17-5	Ethanol	**200**	8.7	**110**	4.6	
75-05-8	Acetonitrile	ND	0.87	ND	0.52	
107-02-8	Acrolein	ND	3.5	ND	1.5	
67-64-1	Acetone	**24**	8.7	**10**	3.7	
75-69-4	Trichlorofluoromethane	**1.1**	0.87	**0.19**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**45**	1.7	**18**	0.71	
107-13-1	Acrylonitrile	ND	0.87	ND	0.40	
75-35-4	1,1-Dichloroethene	ND	0.87	ND	0.22	
75-09-2	Methylene Chloride	ND	0.87	ND	0.25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.87	ND	0.28	
76-13-1	Trichlorotrifluoroethane	ND	0.87	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.7	ND	2.8	
156-60-5	trans-1,2-Dichloroethene	ND	0.87	ND	0.22	
75-34-3	1,1-Dichloroethane	ND	0.87	ND	0.22	
1634-04-4	Methyl tert-Butyl Ether	ND	0.87	ND	0.24	
108-05-4	Vinyl Acetate	ND	8.7	ND	2.5	
78-93-3	2-Butanone (MEK)	ND	8.7	ND	3.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **04-1F-031312** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201074-002

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/20/12
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01828

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.87	ND	0.22	
141-78-6	Ethyl Acetate	**3.5**	1.7	**0.98**	0.48	
110-54-3	n-Hexane	ND	0.87	ND	0.25	
67-66-3	Chloroform	ND	0.87	ND	0.18	
109-99-9	Tetrahydrofuran (THF)	ND	0.87	ND	0.30	
71-55-6	1,1,1-Trichloroethane	ND	0.87	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.87	ND	0.14	
110-82-7	Cyclohexane	ND	1.7	ND	0.51	
78-87-5	1,2-Dichloropropane	ND	0.87	ND	0.19	
75-27-4	Bromodichloromethane	ND	0.87	ND	0.13	
123-91-1	1,4-Dioxane	ND	0.87	ND	0.24	
80-62-6	Methyl Methacrylate	ND	1.7	ND	0.43	
142-82-5	n-Heptane	ND	0.87	ND	0.21	
10061-01-5	cis-1,3-Dichloropropene	ND	0.87	ND	0.19	
108-10-1	4-Methyl-2-pentanone	ND	0.87	ND	0.21	
10061-02-6	trans-1,3-Dichloropropene	ND	0.87	ND	0.19	
108-88-3	Toluene	ND	0.87	ND	0.23	
591-78-6	2-Hexanone	ND	0.87	ND	0.21	
124-48-1	Dibromochloromethane	ND	0.87	ND	0.10	
106-93-4	1,2-Dibromoethane	ND	0.87	ND	0.11	
123-86-4	n-Butyl Acetate	ND	0.87	ND	0.18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201074
Client Sample ID: **04-1F-031312** CAS Sample ID: P1201074-002
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/20/12
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01828

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.87	ND	0.19	
108-90-7	Chlorobenzene	ND	0.87	ND	0.19	
179601-23-1	m,p-Xylenes	ND	1.7	ND	0.40	
75-25-2	Bromoform	ND	0.87	ND	0.084	
100-42-5	Styrene	ND	0.87	ND	0.20	
95-47-6	o-Xylene	ND	0.87	ND	0.20	
111-84-2	n-Nonane	ND	0.87	ND	0.17	
98-82-8	Cumene	ND	0.87	ND	0.18	
80-56-8	alpha-Pinene	**1.1**	0.87	**0.20**	0.16	
103-65-1	n-Propylbenzene	ND	0.87	ND	0.18	
622-96-8	4-Ethyltoluene	ND	0.87	ND	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.87	ND	0.18	
95-63-6	1,2,4-Trimethylbenzene	ND	0.87	ND	0.18	
100-44-7	Benzyl Chloride	ND	0.87	ND	0.17	
541-73-1	1,3-Dichlorobenzene	ND	0.87	ND	0.14	
106-46-7	1,4-Dichlorobenzene	**36**	0.87	**6.0**	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.87	ND	0.14	
5989-27-5	d-Limonene	**33**	0.87	**6.0**	0.16	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.87	ND	0.090	
120-82-1	1,2,4-Trichlorobenzene	ND	0.87	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.87	ND	0.082	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201074
Client Sample ID: **Method Blank** CAS Sample ID: P120324-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201074

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 3/5 - 3/13/12
Analyst: Elsa Moctezuma Date(s) Received: 3/20/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 3/24/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120324-MB	**102**	**100**	**99**	70-130	
Lab Control Sample	P120324-LCS	**102**	**100**	**100**	70-130	
51-1F-030512	P1201074-001	**103**	**99**	**98**	70-130	
04-1F-031312	P1201074-002	**102**	**99**	**98**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**183**	**92**	54-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**156**	**80**	55-112	
74-87-3	Chloromethane	190	**155**	**82**	66-122	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**154**	**77**	64-113	
106-99-0	1,3-Butadiene	204	**182**	**89**	74-142	
74-83-9	Bromomethane	194	**160**	**82**	72-124	
75-00-3	Chloroethane	196	**157**	**80**	69-115	
64-17-5	Ethanol	928	**800**	**86**	67-127	
75-05-8	Acetonitrile	194	**178**	**92**	63-126	
107-02-8	Acrolein	198	**164**	**83**	62-127	
67-64-1	Acetone	1,010	**833**	**82**	67-106	
75-69-4	Trichlorofluoromethane	202	**161**	**80**	66-121	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**304**	**80**	56-112	
107-13-1	Acrylonitrile	198	**183**	**92**	78-128	
75-35-4	1,1-Dichloroethene	212	**181**	**85**	74-116	
75-09-2	Methylene Chloride	206	**168**	**82**	69-103	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**199**	**96**	76-142	
76-13-1	Trichlorotrifluoroethane	206	**175**	**85**	69-118	
75-15-0	Carbon Disulfide	208	**169**	**81**	71-112	
156-60-5	trans-1,2-Dichloroethene	196	**172**	**88**	73-121	
75-34-3	1,1-Dichloroethane	200	**176**	**88**	71-118	
1634-04-4	Methyl tert-Butyl Ether	198	**177**	**89**	72-115	
108-05-4	Vinyl Acetate	952	**902**	**95**	51-150	
78-93-3	2-Butanone (MEK)	206	**187**	**91**	80-130	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	206	**179**	**87**	73-117	
141-78-6	Ethyl Acetate	398	**357**	**90**	79-126	
110-54-3	n-Hexane	198	**163**	**82**	68-109	
67-66-3	Chloroform	214	**176**	**82**	67-118	
109-99-9	Tetrahydrofuran (THF)	202	**175**	**87**	57-130	
71-55-6	1,1,1-Trichloroethane	198	**169**	**85**	70-116	
56-23-5	Carbon Tetrachloride	202	**178**	**88**	68-123	
110-82-7	Cyclohexane	390	**323**	**83**	73-111	
78-87-5	1,2-Dichloropropane	198	**166**	**84**	74-114	
75-27-4	Bromodichloromethane	198	**172**	**87**	75-120	
123-91-1	1,4-Dioxane	200	**173**	**87**	74-120	
80-62-6	Methyl Methacrylate	400	**361**	**90**	80-124	
142-82-5	n-Heptane	196	**171**	**87**	75-114	
10061-01-5	cis-1,3-Dichloropropene	188	**167**	**89**	79-120	
108-10-1	4-Methyl-2-pentanone	204	**183**	**90**	79-128	
10061-02-6	trans-1,3-Dichloropropene	210	**193**	**92**	83-131	
108-88-3	Toluene	202	**167**	**83**	64-115	
591-78-6	2-Hexanone	222	**196**	**88**	73-120	
124-48-1	Dibromochloromethane	206	**186**	**90**	72-137	
106-93-4	1,2-Dibromoethane	200	**169**	**85**	70-126	
123-86-4	n-Butyl Acetate	220	**191**	**87**	65-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120324-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/24/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	200	**182**	**91**	72-118	
108-90-7	Chlorobenzene	202	**165**	**82**	65-117	
179601-23-1	m,p-Xylenes	392	**336**	**86**	68-119	
75-25-2	Bromoform	208	**177**	**85**	79-150	
100-42-5	Styrene	200	**177**	**89**	74-127	
95-47-6	o-Xylene	194	**164**	**85**	68-118	
111-84-2	n-Nonane	196	**168**	**86**	72-116	
98-82-8	Cumene	190	**161**	**85**	68-119	
80-56-8	alpha-Pinene	186	**163**	**88**	70-123	
103-65-1	n-Propylbenzene	192	**160**	**83**	69-119	
622-96-8	4-Ethyltoluene	198	**165**	**83**	68-121	
108-67-8	1,3,5-Trimethylbenzene	200	**169**	**85**	67-118	
95-63-6	1,2,4-Trimethylbenzene	194	**168**	**87**	66-122	
100-44-7	Benzyl Chloride	200	**192**	**96**	73-144	
541-73-1	1,3-Dichlorobenzene	200	**155**	**78**	64-122	
106-46-7	1,4-Dichlorobenzene	206	**153**	**74**	65-125	
95-50-1	1,2-Dichlorobenzene	198	**154**	**78**	63-128	
5989-27-5	d-Limonene	200	**182**	**91**	72-126	
96-12-8	1,2-Dibromo-3-chloropropane	196	**171**	**87**	72-139	
120-82-1	1,2,4-Trichlorobenzene	196	**157**	**80**	65-139	
87-68-3	Hexachlorobutadiene	202	**161**	**80**	58-137	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **51-1F-030512** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201074-001

Test Code: EPA TO-15 SIM Date Collected: 3/5/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/20/12
Analyst: Karen Ryan Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01472
Initial Pressure (psig): -4.07 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.043	ND	0.017	
107-06-2	1,2-Dichloroethane	**0.20**	0.043	**0.050**	0.011	
71-43-2	Benzene	**3.5**	0.13	**1.1**	0.040	
79-01-6	Trichloroethene	**0.47**	0.043	**0.088**	0.0080	
79-00-5	1,1,2-Trichloroethane	ND	0.17	ND	0.032	
127-18-4	Tetrachloroethene	**0.13**	0.043	**0.020**	0.0063	
100-41-4	Ethylbenzene	**2.2**	0.17	**0.52**	0.040	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.043	ND	0.0063	
91-20-3	Naphthalene	**0.21**	0.17	**0.039**	0.033	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **04-1F-031312** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201074-002

Test Code: EPA TO-15 SIM Date Collected: 3/13/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/20/12
Analyst: Karen Ryan Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01828

Initial Pressure (psig): -4.19 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.74

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.044	ND	0.017	
107-06-2	1,2-Dichloroethane	**0.13**	0.044	**0.033**	0.011	
71-43-2	Benzene	**0.38**	0.13	**0.12**	0.041	
79-01-6	Trichloroethene	ND	0.044	ND	0.0081	
79-00-5	1,1,2-Trichloroethane	ND	0.17	ND	0.032	
127-18-4	Tetrachloroethene	**0.28**	0.044	**0.041**	0.0064	
100-41-4	Ethylbenzene	ND	0.17	ND	0.040	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.044	ND	0.0063	
91-20-3	Naphthalene	**0.19**	0.17	**0.036**	0.033	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120328-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201074

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date(s) Collected: 3/5 - 3/13/12
Analyst: Karen Ryan Date(s) Received: 3/20/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 3/28/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120328-MB	**100**	**113**	**113**	70-130	
Lab Control Sample	P120328-LCS	**100**	**112**	**116**	70-130	
51-1F-030512	P1201074-001	**98**	**111**	**115**	70-130	
04-1F-031312	P1201074-002	**98**	**111**	**119**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201074
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120328-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**3.19**	**82**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**3.19**	**80**	51-140	
71-43-2	Benzene	3.96	**3.65**	**92**	56-125	
79-01-6	Trichloroethene	3.88	**3.08**	**79**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**3.10**	**79**	49-137	
127-18-4	Tetrachloroethene	3.68	**3.06**	**83**	58-134	
100-41-4	Ethylbenzene	3.96	**3.26**	**82**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**3.15**	**82**	53-148	
91-20-3	Naphthalene	3.44	**3.48**	**101**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Response Factor Report MS08

Method Path : J:\MS08\Methods\
Method File : M8011412A.M
Title : Massachusetts APH
Last Update : Tue Jan 31 15:28:17 2012
Response Via : Initial Calibration

Calibration Files
0.5 =01141202.D 1 =01141203.D 5 =01141204.D 25 =01141205.D
50 =01141206.D 100 =01141207.D

		Compound	0.5	1	5	25	50	100	Avg		%RSD
1)	I	Bromochloromethane...	----------ISTD----------								
2)	T	Bromochloromet...	5.258	5.274	5.259	5.250	5.256	5.271	5.261		0.17
3)	UN	Isopentane							0.000		-1.00
4)	UN	n-Hexane							0.000		-1.00
5)	S	1,2-Dichloroet...	1.611	1.608	1.551	1.598	1.567	1.556	1.582		1.70
6)	T	1,2-Dichloroet...	4.656	4.658	4.495	4.586	4.518	4.500	4.569		1.65
7)	I	1,4-Difluorobenzen...	----------ISTD----------								
8)	T	1,4-Difluorobe...	2.208	2.210	2.217	2.178	2.149	2.066	2.171		2.66
9)	UN	Cyclohexane							0.000		-1.00
10)	UN	2,3-Dimethylpe...							0.000		-1.00
11)	UN	n-Heptane							0.000		-1.00
12)	S	Toluene-d8 (SS2)	1.109	1.103	1.110	1.107	1.109	1.099	1.106		0.38
13)	T	Toluene-d8 (TIC)	3.041	3.035	3.049	3.051	3.050	3.036	3.044		0.24
14)	UN	n-Octane							0.000		-1.00
15)	T	C5-C8 Aliphati...	2.542	1.269	0.255	0.051	0.026	0.013	0.693	E1	148.16
16)	I	Chlorobenzene-d5 (...	----------ISTD----------								
17)	T	Chlorobenzene-...	2.907	2.900	2.906	2.916	2.929	2.947	2.917		0.60
18)	UN	2,3-Dimethylhe...							0.000		-1.00
19)	UN	n-Nonane							0.000		-1.00
20)	S	p-Bromofluorob...	0.431	0.430	0.420	0.427	0.421	0.420	0.425		1.26
21)	T	p-Bromofluorob...	2.281	2.274	2.217	2.243	2.230	2.227	2.245		1.17
22)	UN	Isopropylbenzene							0.000		-1.00
23)	UN	1-Methyl-3-eth...							0.000		-1.00
24)	UN	1,3,5-Trimethy...							0.000		-1.00
25)	UN	n-Decane							0.000		-1.00
26)	UN	p-Isopropyltol...							0.000		-1.00
27)	UN	1,2,3-Trimethy...							0.000		-1.00
28)	UN	Butylcyclohexane							0.000		-1.00
29)	UN	n-Undecane							0.000		-1.00
30)	UN	n-Dodecane							0.000		-1.00
31)	T	C9-C12 Aliphat...	1.899	0.947	0.185	0.037	0.019	0.009	0.516	E1	148.66
32)	T	C9-C10 Aromati...							0.000		-1.00
33)	T	C9-C10 Aromati...							0.000		-1.00
34)		C5C8_TIC_1	1.741	0.869	0.174	0.035	0.017	0.009	0.474	E2	148.17
35)		C5C8_TIC_2	1.741	0.869	0.174	0.035	0.017	0.009	0.474	E2	148.17
36)		C5C8_TIC_3	1.741	0.869	0.174	0.035	0.017	0.009	0.474	E2	148.17
37)		C5C8_TIC_4	1.741	0.869	0.174	0.035	0.017	0.009	0.474	E2	148.17
38)		C9C12_TIC_1	1.140	0.569	0.111	0.022	0.011	0.006	0.310	E2	148.66
39)		C9C12_TIC_2	1.140	0.569	0.111	0.022	0.011	0.006	0.310	E2	148.66
40)		C9C12_TIC_3	1.140	0.569	0.111	0.022	0.011	0.006	0.310	E2	148.66
41)		C9C12_TIC_4	1.140	0.569	0.111	0.022	0.011	0.006	0.310	E2	148.66
42)		C9C10_TIC_1							0.000		-1.00
43)		C9C10_TIC_2							0.000		-1.00

CM 1/31/12

Method Path : J:\MS08\Methods\
Method File : M8011412A.M
Title : Massachusetts APH
(#) = Out of Range

tom 1/31/12

Massachusetts APH ICAL Method: M8011412A.M ICAL Date: 1/14/12 Instrument ID: MS08

Hydrocarbon Ranges

	areas							masses					
C5-C8 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopentane	60478	112606	488243	2480105	4710733	9222808		0.520	1.04	5.20	26.0	52.0	104
n-Hexane	59953	110631	507126	2577865	4931102	9678199		0.490	0.98	4.90	24.5	49.0	98
Cyclohexane	63203	115230	548910	2874726	5524402	10890911		0.500	1.00	5.00	25.0	50.0	100
2,3-Dimethylpentane	68648	127222	585183	2998017	5742104	11319597		0.520	1.04	5.20	26.0	52.0	104
n-Heptane	66143	120286	558074	2884817	5509801	10873046		0.490	0.98	4.90	24.5	49.0	98
n-Octane	76169	137829	632891	3286017	6205035	12092514		0.505	1.01	5.05	25.3	50.5	101
area sum:	**394594**	**723804**	**3320427**	**17101547**	**32623177**	**64077075**	**sum:**	**3.025**	**6.050**	**30.25**	**151.30**	**302.50**	**605.00**

C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
2,3-Dimethylheptane	78780	147724	682518	3501487	6691428	13148840		0.485	0.97	4.85	24.3	48.5	97
n-Nonane	77464	140680	662221	3417128	6555165	12940625		0.485	0.97	4.85	24.3	48.5	97
n-Decane	80593	147724	705259	3651028	7021424	13870530		0.490	0.98	4.90	24.5	49.0	98
Butylcyclohexane	88915	166782	776903	4026931	7749936	15415340		0.495	0.99	4.95	24.8	49.5	99
n-Undecane	80867	152557	719618	3772331	7263077	14385881		0.480	0.96	4.80	24.0	48.0	96
n-Dodecane	70045	143746	687255	3673524	7115012	14041583		0.500	1.00	5.00	25.0	50.0	100
area sum:	**476664**	**899213**	**4233774**	**22042429**	**42396042**	**83802799**	**sum:**	**2.935**	**5.870**	**29.35**	**146.90**	**293.50**	**587.00**

C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopropylbenzene	10658	19169	87439	448287	849124	1695737		0.485	0.97	4.85	24.3	48.5	97
3-Ethyltoluene	11805	20564	97823	504510	977020	1973178		0.470	0.94	4.70	23.5	47.0	94
1,3,5-Trimethylbenzene	15759	29260	134073	700133	1353305	2726630		0.490	0.98	4.90	24.5	49.0	98
1,2,3-Trimethylbenzene	17195	31328	143473	757946	1493373	3063059		0.495	0.99	4.95	24.8	49.5	99
p-Isopropyltoluene	9490	18116	83401	440962	872799	1814314		0.460	0.92	4.60	23.0	46.0	92
area sum:	**64907**	**118437**	**546209**	**2851838**	**5545621**	**11272918**	**sum:**	**2.400**	**4.800**	**24.00**	**120.10**	**240.00**	**480.00**

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Tom 1/31/12

Massachusetts APH ICAL: M8011412A.M ICAL Date: 1/14/12 Instrument ID: MS08

Hydrocarbon Ranges

areas

Internal Standards (TIC)	0.5	1	5	25	50	100
Bromochloromethane (IS1)	1312793	1307309	1293586	1289283	1284194	1283817
1,4-Difluorobenzene (IS2)	2547079	2541159	2512498	2475255	2422119	2352159
Chlorobenzene-d5 (IS3)	2929189	2913374	2880258	2895080	2878314	2908396
Internal Standards (EIC)						
Bromochloromethane (IS1)	249696	247899	245985	245585	244327	243561
1,4-Difluorobenzene (IS2)	1153657	1149947	1133233	1136223	1127203	1138730
Chlorobenzene-d5 (IS3)	1007702	1004638	991212	992925	982812	986950
Surrogates (TIC)	**0.5**	**1**	**5**	**25**	**50**	**100**
1,2-Dichloroethane-d4	1162497	1154617	1105630	1126201	1103958	1095945
Toluene-d8	3508018	3490493	3455382	3466688	3437986	3457323
p-Bromofluorobenzene	2298220	2284797	2197239	2227396	2192159	2197999

RRFs

C5-C8 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	2.8268	2.6009	2.4215	2.4870	2.3919	2.3252	2.509	7.24
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	4.0291	3.8120	3.6383	3.7780	3.6744	3.6163	3.758	4.09
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	0.6709	0.6140	0.5740	0.5979	0.5878	0.5949	0.607	5.63

Em 1/31/12

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **03241202.D**
Data File Path: **J:\MS08\Data\2012_03\24**
Operator: **EM**
Date Acquired: **3/24/12 1:17**
Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15/MAPH CCV STD**
Misc Info: **S25-03151201/S25-03161202**
Instrument Name: **MS08**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	15.89	1097014
16)	Chlorobenzene-d5 (IS3)	21.69	957299

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	8.19	2331141	2.445	147.5	**-2.53**	**-30**	**30**	Pass
4)	n-Hexane	13.09	2450350						
9)	Cyclohexane	15.82	2698497						
10)	2,3-Dimethylpentane	16.17	2863333	**Spike**	**ICAL**				
11)	n-Heptane	17.35	2745668	**Amt (ng)**	**RRF**				
14)	n-Octane	20.69	3146714	151.30	2.509				
			16235703						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	22.31	3331254	3.712	145.1	**-1.23**	**-30**	**30**	Pass
19)	n-Nonane	23.30	3243877						
25)	n-Decane	25.27	3468097						
28)	Butylcyclohexane	25.99	3790882	**Spike**	**ICAL**				
29)	n-Undecane	26.77	3564701	**Amt (ng)**	**RRF**				
30)	n-Dodecane	28.00	3481141	146.90	3.758				
			20879952						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	23.78	435563	0.589	116.6	**-2.92**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	24.52	480909						
24)	1,3,5-Trimethylbenzene	24.66	662082						
26)	p-Isopropyltoluene	25.68	417535	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	25.68	713901	**Amt (ng)**	**RRF**				
			2709990	120.1	0.607				

MH 3/24/12

Response Factor Report MS08

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Dec 12 09:45:45 2011
Response Via : Initial Calibration

Calibration Files
0.1 =12091118.D 0.2 =12091119.D 0.5 =12091120.D 1.0 =12091121.D 5.0 =12091122.D 25 =12091123.D
50 =12091124.D 100 =12091125.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------									
2)	T	Propene	2.487	1.965	1.952	1.692	2.194	2.303	2.185	2.036	2.102	11.62
3)	T	Dichlorodifluo...	3.545	2.805	2.940	2.748	2.432	2.361	2.278	2.199	2.664	16.73
4)	T	Chloromethane	3.290	2.811	2.875	2.512	2.176	2.286	1.977	1.664	2.449	21.62
5)	T	1,2-Dichloro-1...	1.901	1.661	1.575	1.458	1.359	1.333	1.200	1.190	1.460	16.68
6)	T	Vinyl Chloride	2.906	2.590	2.631	2.374	2.145	2.129	1.950	1.939	2.333	15.07
7)	T	1,3-Butadiene	2.145	1.788	1.790	1.718	1.581	1.689	1.621	1.616	1.743	10.33
8)	T	Bromomethane	1.687	1.328	1.349	1.212	1.094	1.142	1.111	1.092	1.252	16.21
9)	T	Chloroethane	1.671	1.259	1.333	1.193	1.101	1.091	1.046	1.044	1.217	17.29
10)	T	Ethanol	2.040	1.345	1.186	1.085	1.022	1.096	1.076	1.064	1.239	27.34
11)	T	Acetonitrile	4.365	2.973	2.723	2.546	2.480	2.562	2.482	2.468	2.825	22.85
12)	T	Acrolein	1.328	0.931	0.907	0.861	0.772	0.814	0.789	0.779	0.897	20.48
13)	T	Acetone	1.645	1.316	1.249	1.129	0.994	1.015	0.981	0.964	1.161	20.26
14)	T	Trichlorofluor...	2.776	2.385	2.496	2.272	2.097	2.135	2.042	2.011	2.277	11.59
15)	T	2-Propanol (Is...		4.463	4.536	4.168	2.920	2.763	2.577	2.672	3.443	26.09
16)	T	Acrylonitrile	2.701	1.907	1.878	1.783	1.745	1.813	1.765	1.738	1.916	16.85
17)	T	1,1-Dichloroet...	1.458	1.418	1.452	1.263	1.206	1.223	1.172	1.152	1.293	9.95
18)	T	2-Methyl-2-Pro...	4.464	3.710	3.939	3.616	3.558	3.584			3.812	9.14
19)	T	Methylene Chlo...			1.958	1.578	1.294	1.273	1.220	1.201	1.421	20.88
20)	T	3-Chloro-1-pro...	2.347	2.260	2.345	2.220	2.150	2.296	2.230	2.191	2.255	3.15
21)	T	Trichlorotrifl...	1.348	1.244	1.299	1.193	1.089	1.098	1.062	1.035	1.171	10.01
22)	T	Carbon Disulfide		6.210	5.678	5.057	4.654	4.699	4.488	4.424	5.030	13.40
23)	T	trans-1,2-Dich...	2.436	2.237	2.206	2.142	1.951	1.953	1.883	1.835	2.080	10.00
24)	T	1,1-Dichloroet...	2.896	2.757	2.747	2.500	2.307	2.379	2.288	2.236	2.514	10.07
25)	T	Methyl tert-Bu...	5.128	4.611	4.650	4.307	4.119	4.185	4.042	3.984	4.378	8.93
26)	T	Vinyl Acetate	0.430	0.368	0.423	0.399	0.393	0.410	0.402	0.398	0.403	4.70
27)	T	2-Butanone (MEK)	1.265	1.003	1.038	0.972	0.927	0.964	0.928	0.794	0.986	13.56
28)	T	cis-1,2-Dichlo...	2.442	2.056	2.101	1.938	1.826	1.836	1.764	1.720	1.960	12.05
29)	T	Diisopropyl Ether	1.446	1.223	1.323	1.262	1.171	1.188	1.153	1.148	1.239	8.26
30)	T	Ethyl Acetate	0.611	0.554	0.573	0.545	0.517	0.535	0.520	0.516	0.546	6.02
31)	T	n-Hexane	3.541	3.006	3.181	2.805	2.582	2.633	2.545	2.543	2.855	12.70

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.679	2.408	2.409	2.204	1.983	2.054	1.974	1.937	2.206	12.18
33)	S	1,2-Dichloroet...	1.586	1.577	1.582	1.590	1.535	1.533	1.520	1.504	1.553	2.19
34)	T	Tetrahydrofura...	1.274	0.932	1.100	0.938	0.910	0.879	0.830	0.821	0.961	15.96
35)	T	Ethyl tert-But...	1.999	1.832	2.033	1.818	1.732	1.757	1.708	1.687	1.821	7.18
36)	T	1,2-Dichloroet...	2.099	1.992	1.976	1.806	1.683	1.700	1.599	1.531	1.798	11.39
37)	IR	1,4-Difluorobenzen...	----------	ISTD	----------							
38)	T	1,1,1-Trichlor...	0.531	0.465	0.486	0.453	0.419	0.434	0.413	0.403	0.451	9.46
39)	T	Isopropyl Acetate	0.227	0.205	0.220	0.206	0.194	0.201	0.192	0.188	0.204	6.71
40)	T	1-Butanol		0.348	0.319	0.300	0.320	0.335	0.324	0.318	0.323	4.66
41)	T	Benzene	1.633	1.385	1.359	1.227	1.136	1.158	1.101	1.070	1.258	15.11
42)	T	Carbon Tetrach...	0.394	0.356	0.369	0.340	0.334	0.352	0.337	0.333	0.352	6.03
43)	T	Cyclohexane	0.666	0.576	0.588	0.539	0.492	0.500	0.479	0.469	0.539	12.59
44)	T	tert-Amyl Meth...	1.092	0.926	0.998	0.937	0.900	0.918	0.881	0.858	0.939	7.95
45)	T	1,2-Dichloropr...	0.397	0.361	0.368	0.324	0.312	0.316	0.300	0.293	0.334	11.12
46)	T	Bromodichlorom...	0.458	0.387	0.392	0.378	0.362	0.378	0.362	0.353	0.384	8.57
47)	T	Trichloroethene	0.466	0.375	0.379	0.344	0.323	0.328	0.316	0.309	0.355	14.62
48)	T	1,4-Dioxane	0.305	0.282	0.288	0.248	0.245	0.246	0.237	0.230	0.260	10.55
49)	T	2,2,4-Trimethy...	1.964	1.629	1.686	1.546	1.447	1.461	1.387	1.337	1.557	12.98
50)	T	Methyl Methacr...	0.156	0.139	0.150	0.135	0.136	0.142	0.136	0.135	0.141	5.53
51)	T	n-Heptane	0.427	0.373	0.385	0.364	0.341	0.344	0.332	0.324	0.361	9.35
52)	T	cis-1,3-Dichlo...	0.571	0.502	0.521	0.491	0.482	0.500	0.481	0.471	0.502	6.33
53)	T	4-Methyl-2-pen...	0.359	0.295	0.308	0.303	0.297	0.303	0.289	0.284	0.305	7.68
54)	T	trans-1,3-Dich...	0.476	0.413	0.443	0.421	0.429	0.453	0.437	0.427	0.437	4.59
55)	T	1,1,2-Trichlor...	0.340	0.301	0.310	0.284	0.276	0.285	0.271	0.265	0.292	8.44
56)	IR	Chlorobenzene-d5 (...	----------	ISTD	----------							
57)	S	Toluene-d8 (SS2)	2.305	2.306	2.305	2.309	2.306	2.300	2.310	2.304	2.306	0.14
58)	T	Toluene	3.623	2.920	3.025	2.738	2.571	2.574	2.473	2.421	2.793	14.19
59)	T	2-Hexanone	2.049	1.429	1.515	1.403	1.395	1.422	1.367	1.337	1.490	15.57
60)	T	Dibromochlorom...	0.696	0.618	0.636	0.636	0.612	0.648	0.629	0.625	0.638	4.14
61)	T	1,2-Dibromoethane	0.831	0.730	0.718	0.658	0.641	0.662	0.638	0.628	0.688	9.97
62)	T	n-Butyl Acetate	2.338	1.850	1.857	1.721	1.704	1.765	1.737	1.737	1.839	11.40
63)	T	n-Octane	0.785	0.652	0.714	0.643	0.602	0.611	0.580	0.572	0.645	11.28
64)	T	Tetrachloroethene	1.090	0.904	0.904	0.826	0.767	0.779	0.756	0.755	0.848	13.63
65)	T	Chlorobenzene	2.375	1.868	1.886	1.744	1.610	1.637	1.574	1.548	1.780	15.30
66)	T	Ethylbenzene	3.846	3.171	3.188	2.956	2.803	2.848	2.743	2.680	3.030	12.51
67)	T	m- & p-Xylenes	3.081	2.499	2.611	2.392	2.216	2.273	2.170	2.112	2.419	13.08
68)	T	Bromoform	0.622	0.494	0.556	0.541	0.551	0.598	0.589	0.594	0.568	7.19
69)	T	Styrene	2.478	1.895	1.937	1.800	1.735	1.803	1.726	1.675	1.881	13.64
70)	T	o-Xylene	3.279	2.708	2.726	2.479	2.331	2.373	2.283	2.224	2.550	13.65

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	2.005	1.753	1.847	1.675	1.581	1.597	1.518	1.470	1.681	10.69
72)	T	1,1,2,2-Tetrac...	1.348	1.164	1.262	1.150	1.083	1.121	1.085	1.066	1.160	8.48
73)	S	Bromofluoroben...	0.774	0.771	0.779	0.781	0.775	0.778	0.782	0.780	0.777	0.50
74)	T	Cumene	4.522	3.495	3.524	3.169	2.962	3.002	2.884	2.831	3.299	16.98
75)	T	alpha-Pinene	1.782	1.636	1.734	1.601	1.537	1.578	1.518	1.498	1.611	6.35
76)	T	n-Propylbenzene	5.441	4.229	4.306	3.924	3.710	3.754	3.553	3.394	4.039	16.01
77)	T	3-Ethyltoluene	4.091	3.373	3.461	3.038	2.964	2.981	2.893	2.845	3.206	13.14
78)	T	4-Ethyltoluene	4.003	3.202	3.301	3.151	2.837	2.983	2.810	2.776	3.133	12.84
79)	T	1,3,5-Trimethy...	3.324	2.662	2.723	2.537	2.378	2.426	2.344	2.403	2.600	12.43
80)	T	alpha-Methylst...	1.742	1.386	1.449	1.371	1.390	1.402	1.354	1.399	1.436	8.80
81)	T	2-Ethyltoluene	4.143	3.362	3.430	3.169	2.975	3.048	2.919	2.985	3.254	12.43
82)	T	1,2,4-Trimethy...	3.356	2.663	2.791	2.551	2.433	2.513	2.454	2.548	2.664	11.37
83)	T	n-Decane	1.969	1.702	1.844	1.705	1.582	1.626	1.554	1.609	1.699	8.39
84)	T	Benzyl Chloride	2.373	1.648	1.772	1.688	1.799	2.058	2.054	2.190	1.948	13.35
85)	T	1,3-Dichlorobe...	2.498	1.658	1.649	1.455	1.377	1.409	1.374	1.436	1.607	23.49
86)	T	1,4-Dichlorobe...	2.655	1.785	1.618	1.492	1.380	1.428	1.388	1.449	1.649	25.99
87)	T	sec-Butylbenzene	4.527	3.773	3.816	3.471	3.264	3.328	3.214	3.176	3.571	12.80
88)	T	4-Isopropyltol...	4.426	3.674	3.683	3.416	3.254	3.356	3.253	3.366	3.554	10.98
89)	T	1,2,3-Trimethy...	3.266	2.650	2.852	2.588	2.471	2.573	2.506	2.619	2.691	9.63
90)	T	1,2-Dichlorobe...	2.173	1.589	1.545	1.435	1.332	1.387	1.370	1.415	1.531	17.89
91)	T	d-Limonene	1.124	0.998	1.106	1.069	1.064	1.072	1.040	1.065	1.067	3.58
92)	T	1,2-Dibromo-3-...	0.563	0.488	0.501	0.486	0.494	0.525	0.532	0.542	0.517	5.50
93)	T	n-Undecane	1.922	1.637	1.755	1.671	1.608	1.630	1.608	1.592	1.678	6.63
94)	T	1,2,4-Trichlor...		1.335	1.165	1.062	1.017	1.071	1.086	1.118	1.122	9.32
95)	T	Naphthalene		4.848	3.923	3.638	3.497	3.721	3.755	3.783	3.881	11.50
96)	T	n-Dodecane	1.866	1.599	1.669	1.586	1.545	1.575	1.553	1.509	1.613	6.99
97)	T	Hexachlorobuta...	0.841	0.749	0.730	0.673	0.635	0.664	0.663	0.676	0.704	9.50
98)	T	Cyclohexanone	1.172	0.979	1.021	0.969	0.952	0.962	0.931	0.903	0.986	8.37
99)	T	tert-Butylbenzene	3.486	2.799	2.880	2.658	2.449	2.533	2.453	2.528	2.723	12.71
100)	T	n-Butylbenzene	3.596	2.904	2.958	2.670	2.572	2.625	2.613	2.593	2.817	12.33

(#) = Out of Range

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\24\
Data File : 03241201.D
Acq On : 24 Mar 2012 00:34
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 24 08:11:33 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	83	-0.01
2	T	Propene	2.102	1.911	9.1	69	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.198	17.5	77	0.01
4	T	Chloromethane	2.449	2.091	14.6	76	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.164	20.3	73	0.00
6	T	Vinyl Chloride	2.333	1.919	17.7	75	0.00
7	T	1,3-Butadiene	1.743	1.594	8.5	78	0.00
8	T	Bromomethane	1.252	1.056	15.7	77	0.00
9	T	Chloroethane	1.217	1.019	16.3	78	0.00
10	T	Ethanol	1.239	1.162	6.2	88	-0.07
11	T	Acetonitrile	2.825	2.548	9.8	83	-0.05
12	T	Acrolein	0.897	0.744	17.1	76	-0.02
13	T	Acetone	1.161	0.998	14.0	82	-0.04
14	T	Trichlorofluoromethane	2.277	2.018	11.4	79	0.00
15	T	2-Propanol (Isopropanol)	3.443	3.218	6.5	97	-0.05
16	T	Acrylonitrile	1.916	1.760	8.1	81	-0.03
17	T	1,1-Dichloroethene	1.293	1.152	10.9	78	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.168	16.9	74	-0.03
19	T	Methylene Chloride	1.421	1.188	16.4	78	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.246	0.4	81	-0.01
21	T	Trichlorotrifluoroethane	1.171	1.027	12.3	78	0.00
22	T	Carbon Disulfide	5.030	4.402	12.5	78	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.877	9.8	80	0.00
24	T	1,1-Dichloroethane	2.514	2.309	8.2	81	-0.01
25	T	Methyl tert-Butyl Ether	4.378	4.054	7.4	81	0.00
26	T	Vinyl Acetate	0.403	0.395	2.0	80	-0.03
27	T	2-Butanone (MEK)	0.986	0.934	5.3	81	-0.02
28	T	cis-1,2-Dichloroethene	1.960	1.765	9.9	80	-0.01
29	T	Diisopropyl Ether	1.239	1.143	7.7	80	0.00
30	T	Ethyl Acetate	0.546	0.519	4.9	81	-0.02
31	T	n-Hexane	2.855	2.469	13.5	78	0.00
32	T	Chloroform	2.206	1.955	11.4	79	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.606	-3.4	87	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.863	10.2	82	0.00
35	T	Ethyl tert-Butyl Ether	1.821	1.683	7.6	80	0.00
36	T	1,2-Dichloroethane	1.798	1.636	9.0	80	-0.01
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	86	0.00
38	T	1,1,1-Trichloroethane	0.451	0.399	11.5	79	0.00

HH 3/24/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\24\
Data File : 03241201.D
Acq On : 24 Mar 2012 00:34
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 24 08:11:33 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.187	8.3	80	-0.02
40	T	1-Butanol	0.323	0.343	-6.2	88	-0.05
41	T	Benzene	1.258	1.072	14.8	80	-0.01
42	T	Carbon Tetrachloride	0.352	0.318	9.7	78	-0.01
43	T	Cyclohexane	0.539	0.465	13.7	80	-0.01
44	T	tert-Amyl Methyl Ether	0.939	0.851	9.4	80	0.00
45	T	1,2-Dichloropropane	0.334	0.293	12.3	80	-0.01
46	T	Bromodichloromethane	0.384	0.350	8.9	80	0.00
47	T	Trichloroethene	0.355	0.296	16.6	78	-0.01
48	T	1,4-Dioxane	0.260	0.235	9.6	82	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.379	11.4	81	0.00
50	T	Methyl Methacrylate	0.141	0.132	6.4	81	-0.02
51	T	n-Heptane	0.361	0.325	10.0	81	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.468	6.8	81	0.00
53	T	4-Methyl-2-pentanone	0.305	0.289	5.2	82	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.422	3.4	80	0.00
55	T	1,1,2-Trichloroethane	0.292	0.259	11.3	78	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	86	0.00
57	S	Toluene-d8 (SS2)	2.306	2.302	0.2	86	0.00
58	T	Toluene	2.793	2.399	14.1	80	0.00
59	T	2-Hexanone	1.490	1.370	8.1	83	-0.01
60	T	Dibromochloromethane	0.638	0.588	7.8	78	0.00
61	T	1,2-Dibromoethane	0.688	0.601	12.6	78	0.00
62	T	n-Butyl Acetate	1.839	1.689	8.2	82	-0.01
63	T	n-Octane	0.645	0.606	6.0	85	0.00
64	T	Tetrachloroethene	0.848	0.706	16.7	78	0.00
65	T	Chlorobenzene	1.780	1.511	15.1	79	0.00
66	T	Ethylbenzene	3.030	2.603	14.1	78	0.00
67	T	m- & p-Xylenes	2.419	2.148	11.2	81	-0.01
68	T	Bromoform	0.568	0.547	3.7	78	0.00
69	T	Styrene	1.881	1.716	8.8	82	-0.01
70	T	o-Xylene	2.550	2.246	11.9	81	-0.01
71	T	n-Nonane	1.681	1.511	10.1	81	0.00
72	T	1,1,2,2-Tetrachloroethane	1.160	1.028	11.4	79	-0.01
73	S	Bromofluorobenzene (SS3)	0.777	0.795	-2.3	88	0.00
74	T	Cumene	3.299	2.937	11.0	84	0.00
75	T	alpha-Pinene	1.611	1.440	10.6	78	0.00
76	T	n-Propylbenzene	4.039	3.517	12.9	80	0.00

MM 3/24/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\24\
Data File : 03241201.D
Acq On : 24 Mar 2012 00:34
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-02271204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 24 08:11:33 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.756	14.0	79	0.00
78	T	4-Ethyltoluene	3.133	2.746	12.4	79	-0.01
79	T	1,3,5-Trimethylbenzene	2.600	2.260	13.1	80	-0.01
80	T	alpha-Methylstyrene	1.436	1.296	9.7	79	-0.01
81	T	2-Ethyltoluene	3.254	2.808	13.7	79	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.335	12.3	80	-0.01
83	T	n-Decane	1.699	1.527	10.1	81	-0.01
84	T	Benzyl Chloride	1.948	2.052	-5.3	86	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.288	19.9	79	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.298	21.3	78	-0.01
87	T	sec-Butylbenzene	3.571	3.106	13.0	80	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.122	12.2	80	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.373	11.8	79	0.00
90	T	1,2-Dichlorobenzene	1.531	1.255	18.0	78	-0.01
91	T	d-Limonene	1.067	0.988	7.4	79	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.478	7.5	78	-0.01
93	T	n-Undecane	1.678	1.536	8.5	81	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.967	13.8	77	-0.01
95	T	Naphthalene	3.881	3.454	11.0	80	0.00
96	T	n-Dodecane	1.613	1.520	5.8	83	0.00
97	T	Hexachlorobutadiene	0.704	0.595	15.5	77	0.00
98	T	Cyclohexanone	0.986	0.960	2.6	86	-0.02
99	T	tert-Butylbenzene	2.723	2.380	12.6	81	-0.01
100	T	n-Butylbenzene	2.817	2.441	13.3	80	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MH 3/24/12

Response Factor Report MS07

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
1)	I	Bromochloromethan	----------ISTD----------										
2)	T	Dichlorodifluorom	3.784	3.527	3.467	3.822	3.279	2.986	2.875	3.155	2.920	3.313	10.83
3)	T	Chloromethane		1.470	0.956	1.190	0.904	0.778	0.569	0.897	0.827	0.949	28.81
4)	T	Vinyl Chloride	2.802	2.749	2.588	3.044	2.597	2.406	2.314	2.588	2.446	2.615	8.57
5)	T	Bromomethane	1.894	1.496	1.211	1.613	1.335	1.208	1.105	1.433	1.367	1.407	17.11
6)	T	Chloroethane	1.511	1.416	1.357	1.517	1.295	1.237	1.195	1.312	1.224	1.340	8.92
7)	T	Acetone				1.548	1.214	1.122	1.080	1.193	1.090	1.208	14.52
8)	T	Trichlorofluorome	3.051	2.887	2.831	3.145	2.692	2.565	2.447	2.691	2.536	2.761	8.59
9)	T	1,1-Dichloroethen	1.591	1.440	1.366	1.547	1.322	1.229	1.214	1.385	1.295	1.376	9.52
10)	T	Methylene Chlorid		2.134	1.795	1.866	1.536	1.426	1.404	1.494	1.411	1.633	16.43
11)	T	Trichlorotrifluor	1.408	1.325	1.295	1.376	1.169	1.081	1.062	1.170	1.097	1.220	10.87
12)	T	trans-1,2-Dichlor	1.972	1.710	1.589	1.762	1.505	1.406	1.393	1.512	1.439	1.588	12.18
13)	T	1,1-Dichloroethan	3.265	3.020	3.016	3.383	2.925	2.756	2.681	2.937	2.841	2.980	7.60
14)	T	Methyl tert-Butyl	5.168	4.740	4.762	5.045	4.335	4.137	4.166	4.690	4.471	4.613	7.90
15)	T	cis-1,2-Dichloroe	1.885	1.626	1.630	1.776	1.524	1.434	1.388	1.575	1.482	1.591	10.09
16)	T	Chloroform			3.041	3.257	2.586	2.390	2.280	2.524	2.374	2.636	14.03
17)	S	1,2-Dichloroethan	2.000	2.002	2.032	2.018	1.989	1.973	1.960	1.938	1.932	1.983	1.75
18)	T	1,2-Dichloroethan	2.582	2.460	2.375	2.604	2.222	2.090	1.988	2.222	2.094	2.293	9.73
19)	T	1,1,1-Trichloroet	2.587	2.431	2.340	2.573	2.191	2.059	2.007	2.278	2.150	2.291	9.18
20)	T	Benzene			7.536	7.534	6.055	5.665	5.395	5.903	5.468	6.222	14.88
21)	T	Carbon Tetrachlor	2.280	1.842	1.769	1.950	1.676	1.579	1.549	1.771	1.692	1.790	12.41
22)	I	1,4-Difluorobenze	----------ISTD----------										
23)	T	1,2-Dichloropropa	0.417	0.397	0.373	0.409	0.354	0.331	0.319	0.358	0.336	0.366	9.68
24)	T	Bromodichlorometh	0.491	0.464	0.436	0.489	0.420	0.398	0.394	0.447	0.416	0.439	8.26
25)	T	Trichloroethene	0.418	0.379	0.349	0.390	0.324	0.305	0.287	0.326	0.307	0.343	12.96
26)	T	1,4-Dioxane	0.324	0.290	0.270	0.278	0.242	0.231	0.227	0.258	0.243	0.263	11.99
27)	T	cis-1,3-Dichlorop	0.567	0.523	0.508	0.540	0.499	0.484	0.488	0.559	0.522	0.521	5.67
28)	T	trans-1,3-Dichlor	0.457	0.434	0.431	0.444	0.419	0.409	0.417	0.505	0.482	0.444	7.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
29)	T	1,1,2-Trichloroet	0.315	0.296	0.286	0.305	0.263	0.248	0.242	0.274	0.257	0.276	9.32
30)	S	Toluene-d8 (SS2)	1.053	1.071	1.054	1.047	1.051	1.052	1.071	1.060	1.049	1.056	0.84
31)	T	Toluene	1.782	1.541	1.420	1.485	1.269	1.198	1.177	1.307	1.186	1.374	14.76
32)	T	1,2-Dibromoethane	0.379	0.362	0.345	0.362	0.323	0.307	0.304	0.351	0.331	0.340	7.65
33)	T	Tetrachloroethene	0.423	0.394	0.371	0.400	0.341	0.320	0.311	0.347	0.326	0.359	11.03
34)	I	Chlorobenzene-d5	ISTD										
35)	T	Chlorobenzene	4.581	4.172	4.017	4.308	3.688	3.469	3.311	3.705	3.345	3.844	11.68
36)	T	Ethylbenzene	7.604	7.082	6.707	7.235	6.297	6.070	5.915	6.682	5.878	6.608	9.30
37)	T	m,p-Xylene	5.861	5.347	5.132	5.536	4.930	4.777	4.719	5.268	4.558	5.125	8.24
38)	T	o-Xylene	6.505	5.826	5.526	5.889	5.188	4.995	4.950	5.594	4.932	5.490	9.67
39)	T	1,1,2,2-Tetrachlo	2.655	2.674	2.710	2.646	2.437	2.371	2.298	2.761	2.498	2.561	6.40
40)	S	Bromofluorobenzen	1.712	1.701	1.695	1.697	1.683	1.680	1.670	1.642	1.593	1.675	2.20
41)	T	1,3-Dichlorobenze	3.304	3.261	3.222	3.204	2.835	2.719	2.608	3.138	2.846	3.015	8.71
42)	T	1,4-Dichlorobenze	3.470	3.303	3.208	3.208	2.803	2.671	2.579	3.174	2.891	3.034	10.13
43)	T	1,2-Dichlorobenze	3.271	3.123	3.112	3.026	2.662	2.536	2.418	3.053	2.772	2.886	10.31
44)	T	1,2,4-Trichlorobe	2.184	2.118	2.169	1.753	1.641	1.608	1.575	2.139	1.978	1.907	13.66
45)	T	Naphthalene	6.857	6.355	6.704	5.143	5.107	5.172	5.297	8.126	7.328	6.232	17.82
46)	T	Hexachlorobutadie	1.486	1.423	1.403	1.217	1.055	1.013	0.975	1.227	1.145	1.216	15.40

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\28\
Data File : 03281203.D
Acq On : 28 Mar 2012 7:50 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 28 08:50:09 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	93	0.00
2	T	Dichlorodifluoromethane (CF	3.313	2.572	22.4	73	0.00
3	T	Chloromethane	0.949	0.733	22.8	76	0.00
4	T	Vinyl Chloride	2.615	2.066	21.0	74	0.00
5	T	Bromomethane	1.407	1.205	14.4	84	0.00
6	T	Chloroethane	1.340	1.060	20.9	77	0.00
7	T	Acetone	1.208	1.079	10.7	83	0.00
8	T	Trichlorofluoromethane	2.761	2.164	21.6	75	0.00
9	T	1,1-Dichloroethene	1.376	1.146	16.7	81	0.00
10	T	Methylene Chloride	1.633	1.283	21.4	78	0.00
11	T	Trichlorotrifluoroethane	1.220	1.053	13.7	84	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.270	20.0	79	0.00
13	T	1,1-Dichloroethane	2.980	2.388	19.9	76	0.00
14	T	Methyl tert-Butyl Ether	4.613	3.616	21.6	78	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.323	16.8	81	0.00
16	T	Chloroform	2.636	2.156	18.2	78	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.932	2.6	91	0.00
18	T	1,2-Dichloroethane	2.293	1.727	24.7	73	0.00
19	T	1,1,1-Trichloroethane	2.291	1.845	19.5	79	0.00
20	T	Benzene	6.222	5.286	15.0	82	0.00
21	T	Carbon Tetrachloride	1.790	1.409	21.3	79	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	102	0.00
23	T	1,2-Dichloropropane	0.366	0.270	26.2	78	0.00
24	T	Bromodichloromethane	0.439	0.322	26.7	78	0.00
25	T	Trichloroethene	0.343	0.258	24.8	82	0.00
26	T	1,4-Dioxane	0.263	0.197	25.1	83	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.390	25.1	80	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.337	24.1	82	0.00
29	T	1,1,2-Trichloroethane	0.276	0.208	24.6	81	0.00
30	S	Toluene-d8 (SS2)	1.056	1.185	-12.2	115	0.00
31	T	Toluene	1.374	1.045	23.9	84	0.00
32	T	1,2-Dibromoethane	0.340	0.264	22.4	84	0.00
33	T	Tetrachloroethene	0.359	0.286	20.3	86	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	98	0.00
35	T	Chlorobenzene	3.844	3.214	16.4	86	0.00
36	T	Ethylbenzene	6.608	5.251	20.5	82	0.00
37	T	m,p-Xylene	5.125	4.240	17.3	85	0.00

4/3/28/12

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\28\
Data File : 03281203.D
Acq On : 28 Mar 2012 7:50 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00069
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 28 08:50:09 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	4.614	16.0	87	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.098	18.1	85	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.968	-17.5	115	0.00
41	T	1,3-Dichlorobenzene	3.015	2.714	10.0	94	0.00
42	T	1,4-Dichlorobenzene	3.034	2.668	12.1	94	0.00
43	T	1,2-Dichlorobenzene	2.886	2.597	10.0	96	0.00
44	T	1,2,4-Trichlorobenzene	1.907	1.795	5.9	108	0.00
45	T	Naphthalene	6.232	6.258	-0.4	120	0.00
46	T	Hexachlorobutadiene	1.216	1.030	15.3	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

KR 3/28/12

LABORATORY REPORT

April 5, 2012

Christopher Cote
Montana DEQ
1100 N. Last Chance Gulch
Helena, MT 59601

RE: Background Indoor Air Study

Dear Christopher:

Enclosed are the results of the samples submitted to our laboratory on March 22, 2012. For your reference, these analyses have been assigned our service request number P1201121.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-11-2; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA015272011-1; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Kate Aguilera
Project Manager

Client: Montana DEQ CAS Project No: P1201121
Project: Background Indoor Air Study

CASE NARRATIVE

The samples were received intact under chain of custody on March 22, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009.

Volatile Organic Compound Analysis

The samples were also analyzed in Scan and SIM mode for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

The reporting limit is elevated sample "28-1F-031912". The chromatogram indicated the presence of non-target background components. The sample was diluted in order to prevent damage to the instrument and to achieve optimal resolution of the target analytes.

DETAIL SUMMARY REPORT

Client: Montana DEQ
Service Request: P1201121
Project ID: Background Indoor Air Study

Date Received: 3/22/2012
Time Received: 10:00

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC Cans	TO-15 - VOC SIM
19-1F-031412	P1201121-001	Air	3/15/2012	18:15	AC01817	-3.81	3.51	X	X	X
53-1F-031412	P1201121-002	Air	3/15/2012	18:15	AC01478	-1.95	3.66	X	X	X
21-1F-031512	P1201121-003	Air	3/16/2012	12:45	AC01566	-4.65	3.73	X	X	X
23-1F-031512	P1201121-004	Air	3/16/2012	17:51	AC00988	-4.67	3.62	X	X	X
17-1F-031712	P1201121-005	Air	3/16/2012	15:00	AC01790	-2.83	3.61	X	X	X
20-1F-031712	P1201121-006	Air	3/18/2012	11:56	AC01305	-1.78	3.86	X	X	X
28-1F-031912	P1201121-007	Air	3/20/2012	15:05	AC00721	-4.99	3.65	X	X	X
22-1F-031912	P1201121-008	Air	3/20/2012	12:10	AC01171	-2.96	3.64	X	X	X
26-1F-031912	P1201121-009	Air	3/20/2012	09:50	AC01783	-3.72	3.54	X	X	X

Columbia Analytical Services

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1201121

CAS Contact:

Company Name & Address (Reporting Information)
MT Dept Env. Quality
PO Box 200901
1100 N. Last Chance Gulch
Helena MT 59620-0901

Project Name: Background Indoor Air Study

Project Number:

Project Manager: Chris Cote

P.O. # / Billing Information: Reference as: Background Indoor Air Study
Bill to Chris Cote of MT DEQ

Phone: 406-841-5078 Fax: 406-841-5050

Email Address for Result Reporting: ccote2@mt.gov; Martichbj@cdm.com

Sampler (Print & Sign): Laura Alvey + Alan Schiff

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15	TO-15 SIM	MA-APH	Comments e.g. Actual Preservative or specific instructions
19-1F-031412	①-3.75	3/15/12	18:15	AC01817	FCA00327	-28.7	-7.0		X	X	X	Analyze
53-1F-031412	②-1.89	3/15/12	18:15	AC01478	FCA00412	-28.3	-4.0					project-
21-1F-031512	③-4.58	3/16/12	12:45	AC01566	FCA00463	-28.0	-10.0					specific
23-1F-031512	④-4.60	3/16/12	17:51	AC00988	FCA00467	-27.6	-8.4					list of
17-1F-031512	⑤-2.72	3/16/12	15:00	AC01790	FCA00069	-28.0	-4.5					compounds
20-1F-031712	⑥-1.69	3/18/12	11:56	AC01305	FCA00159	-28.5	-3.3					to project-
28-1F-031912	⑦-4.90	3/20/12	15:05	AC00721	FCA00478	-27.5	-9.0					specific
22-1F-031912	⑧-2.95	3/20/12	12:10	AC01171	FCA00411	-27.5	-5.0					reporting
26-1F-031912	⑨-3.70 -2.80 +8.67	3/20/12	9:50	AC01783	FCA00461	-29.0	-7.5					limits

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) X
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: CVS + Excel format

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/21/12	9:00 am		3/21/12	0935
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____°C

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Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201121

Project: Background Indoor Air Study

Sample(s) received on: 3/22/12 Date opened: 3/22/12 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201121-001.01	6.0 L Ambient Can					
P1201121-002.01	6.0 L Ambient Can					
P1201121-003.01	6.0 L Ambient Can					
P1201121-004.01	6.0 L Ambient Can					
P1201121-005.01	6.0 L Ambient Can					
P1201121-006.01	6.0 L Ambient Can					
P1201121-007.01	6.0 L Ambient Can					
P1201121-008.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201121

Project: Background Indoor Air Study

Sample(s) received on: 3/22/12 Date opened: 3/22/12 by: MZAMORA

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201121-009.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **19-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-001

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01817

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.81 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.67

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**41**	33	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	17	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **53-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-002

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01478

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**51**	29	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**20**	14	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **21-1F-031512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-003

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01566

Date Collected: 3/16/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.83

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**84**	37	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**67**	18	
C_9 - C_{10} Aromatic Hydrocarbons	**15**	9.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **23-1F-031512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-004

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00988

Date Collected: 3/16/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.67 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.83

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**73**	37	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**21**	18	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **17-1F-031712** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-005

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01790

Initial Pressure (psig): -2.83 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.54

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**190**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**27**	15	
C_9 - C_{10} Aromatic Hydrocarbons	**10**	7.7	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **20-1F-031712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-006

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01305

Date Collected: 3/18/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.78 Final Pressure (psig): 3.86

Canister Dilution Factor: 1.44

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**81**	29	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**74**	14	
C_9 - C_{10} Aromatic Hydrocarbons	**13**	7.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **28-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-007

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.30 Liter(s)
Test Notes:
Container ID: AC00721

Initial Pressure (psig): -4.99 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.89

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	130	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**190**	63	
C_9 - C_{10} Aromatic Hydrocarbons	ND	32	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **22-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-008

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01171

Initial Pressure (psig): -2.96 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.56

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**41**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**39**	16	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.8	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **26-1F-031912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-009

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01783

Date Collected: 3/20/12
Date Received: 3/22/12
Date Analyzed: 3/28/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.72 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.66

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	33	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**17**	17	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-MB

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**22.8**	**93**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**23.3**	**93**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**41.5**	**86**	70-130	

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **53-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-002DUP

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01478

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

Compound	Sample Result µg/m³	Duplicate Sample Result µg/m³	Average µg/m³	% RPD	RPD Limit	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	50.9	50.2	50.55	**1**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	19.6	19.8	19.7	**1**	30	
C_9 - C_{10} Aromatic Hydrocarbons	ND	ND	-	-	30	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **19-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01817

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.81 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.67

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**2.4**	0.84	**1.4**	0.49	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.84	**0.40**	0.17	
74-87-3	Chloromethane	ND	0.84	ND	0.40	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.84	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.84	ND	0.38	
74-83-9	Bromomethane	ND	0.84	ND	0.22	
75-00-3	Chloroethane	ND	0.84	ND	0.32	
64-17-5	Ethanol	**180**	8.4	**97**	4.4	
75-05-8	Acetonitrile	ND	0.84	ND	0.50	
107-02-8	Acrolein	ND	3.3	ND	1.5	
67-64-1	Acetone	**23**	8.4	**9.5**	3.5	
75-69-4	Trichlorofluoromethane	**1.3**	0.84	**0.23**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**12**	1.7	**4.7**	0.68	
107-13-1	Acrylonitrile	ND	0.84	ND	0.38	
75-35-4	1,1-Dichloroethene	ND	0.84	ND	0.21	
75-09-2	Methylene Chloride	**17**	0.84	**5.0**	0.24	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.84	ND	0.27	
76-13-1	Trichlorotrifluoroethane	ND	0.84	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.4	ND	2.7	
156-60-5	trans-1,2-Dichloroethene	ND	0.84	ND	0.21	
75-34-3	1,1-Dichloroethane	ND	0.84	ND	0.21	
1634-04-4	Methyl tert-Butyl Ether	ND	0.84	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **19-1F-031412** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-001

Test Code: EPA TO-15 Date Collected: 3/15/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01817

Initial Pressure (psig): -3.81 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.67

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.4	ND	2.4	
78-93-3	2-Butanone (MEK)	ND	8.4	ND	2.8	
156-59-2	cis-1,2-Dichloroethene	ND	0.84	ND	0.21	
141-78-6	Ethyl Acetate	**16**	1.7	**4.4**	0.46	
110-54-3	n-Hexane	ND	0.84	ND	0.24	
67-66-3	Chloroform	ND	0.84	ND	0.17	
109-99-9	Tetrahydrofuran (THF)	ND	0.84	ND	0.28	
71-55-6	1,1,1-Trichloroethane	ND	0.84	ND	0.15	
56-23-5	Carbon Tetrachloride	ND	0.84	ND	0.13	
110-82-7	Cyclohexane	ND	1.7	ND	0.49	
78-87-5	1,2-Dichloropropane	ND	0.84	ND	0.18	
75-27-4	Bromodichloromethane	ND	0.84	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.84	ND	0.23	
80-62-6	Methyl Methacrylate	ND	1.7	ND	0.41	
142-82-5	n-Heptane	ND	0.84	ND	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	0.84	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	0.84	ND	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	0.84	ND	0.18	
108-88-3	Toluene	**5.7**	0.84	**1.5**	0.22	
591-78-6	2-Hexanone	ND	0.84	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.84	ND	0.098	
106-93-4	1,2-Dibromoethane	ND	0.84	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **19-1F-031412** CAS Sample ID: P1201121-001
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/15/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01817

Initial Pressure (psig): -3.81 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.67

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**3.3**	0.84	**0.70**	0.18	
111-65-9	n-Octane	ND	0.84	ND	0.18	
108-90-7	Chlorobenzene	ND	0.84	ND	0.18	
179601-23-1	m,p-Xylenes	**1.9**	1.7	**0.45**	0.38	
75-25-2	Bromoform	ND	0.84	ND	0.081	
100-42-5	Styrene	ND	0.84	ND	0.20	
95-47-6	o-Xylene	ND	0.84	ND	0.19	
111-84-2	n-Nonane	**1.4**	0.84	**0.27**	0.16	
98-82-8	Cumene	ND	0.84	ND	0.17	
80-56-8	alpha-Pinene	**5.1**	0.84	**0.92**	0.15	
103-65-1	n-Propylbenzene	ND	0.84	ND	0.17	
622-96-8	4-Ethyltoluene	ND	0.84	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.84	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	ND	0.84	ND	0.17	
100-44-7	Benzyl Chloride	ND	0.84	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.84	ND	0.14	
106-46-7	1,4-Dichlorobenzene	ND	0.84	ND	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.84	ND	0.14	
5989-27-5	d-Limonene	**39**	0.84	**7.0**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.84	ND	0.086	
120-82-1	1,2,4-Trichlorobenzene	ND	0.84	ND	0.11	
87-68-3	Hexachlorobutadiene	ND	0.84	ND	0.078	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **53-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01478

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.72	ND	0.42	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.72	**0.40**	0.15	
74-87-3	Chloromethane	ND	0.72	ND	0.35	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.72	ND	0.10	
106-99-0	1,3-Butadiene	ND	0.72	ND	0.33	
74-83-9	Bromomethane	ND	0.72	ND	0.19	
75-00-3	Chloroethane	ND	0.72	ND	0.27	
64-17-5	Ethanol	**200**	7.2	**110**	3.8	
75-05-8	Acetonitrile	ND	0.72	ND	0.43	
107-02-8	Acrolein	ND	2.9	ND	1.3	
67-64-1	Acetone	**24**	7.2	**10**	3.0	
75-69-4	Trichlorofluoromethane	**1.3**	0.72	**0.24**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.4	ND	0.59	
107-13-1	Acrylonitrile	ND	0.72	ND	0.33	
75-35-4	1,1-Dichloroethene	ND	0.72	ND	0.18	
75-09-2	Methylene Chloride	**19**	0.72	**5.4**	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.72	ND	0.23	
76-13-1	Trichlorotrifluoroethane	ND	0.72	ND	0.094	
75-15-0	Carbon Disulfide	ND	7.2	ND	2.3	
156-60-5	trans-1,2-Dichloroethene	ND	0.72	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.72	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.72	ND	0.20	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **53-1F-031412** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-002

Test Code: EPA TO-15 Date Collected: 3/15/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01478

Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.2	ND	2.0	
78-93-3	2-Butanone (MEK)	ND	7.2	ND	2.4	
156-59-2	cis-1,2-Dichloroethene	ND	0.72	ND	0.18	
141-78-6	Ethyl Acetate	**16**	1.4	**4.5**	0.40	
110-54-3	n-Hexane	ND	0.72	ND	0.20	
67-66-3	Chloroform	ND	0.72	ND	0.15	
109-99-9	Tetrahydrofuran (THF)	ND	0.72	ND	0.24	
71-55-6	1,1,1-Trichloroethane	ND	0.72	ND	0.13	
56-23-5	Carbon Tetrachloride	ND	0.72	ND	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.42	
78-87-5	1,2-Dichloropropane	ND	0.72	ND	0.16	
75-27-4	Bromodichloromethane	ND	0.72	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.72	ND	0.20	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.35	
142-82-5	n-Heptane	ND	0.72	ND	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.72	ND	0.16	
108-10-1	4-Methyl-2-pentanone	ND	0.72	ND	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.72	ND	0.16	
108-88-3	Toluene	**5.5**	0.72	**1.5**	0.19	
591-78-6	2-Hexanone	ND	0.72	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.72	ND	0.085	
106-93-4	1,2-Dibromoethane	ND	0.72	ND	0.094	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **53-1F-031412** CAS Sample ID: P1201121-002
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/15/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01478

Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**2.6**	0.72	**0.56**	0.15	
111-65-9	n-Octane	ND	0.72	ND	0.15	
108-90-7	Chlorobenzene	ND	0.72	ND	0.16	
179601-23-1	m,p-Xylenes	**1.8**	1.4	**0.42**	0.33	
75-25-2	Bromoform	ND	0.72	ND	0.070	
100-42-5	Styrene	ND	0.72	ND	0.17	
95-47-6	o-Xylene	ND	0.72	ND	0.17	
111-84-2	n-Nonane	**1.4**	0.72	**0.27**	0.14	
98-82-8	Cumene	ND	0.72	ND	0.15	
80-56-8	alpha-Pinene	**5.2**	0.72	**0.93**	0.13	
103-65-1	n-Propylbenzene	ND	0.72	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.72	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.72	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	ND	0.72	ND	0.15	
100-44-7	Benzyl Chloride	ND	0.72	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.72	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.72	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.72	ND	0.12	
5989-27-5	d-Limonene	**47**	0.72	**8.5**	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.72	ND	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	0.72	ND	0.097	
87-68-3	Hexachlorobutadiene	ND	0.72	ND	0.068	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **21-1F-031512** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-003

Test Code: EPA TO-15 Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01566

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.83

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**10**	0.92	**6.1**	0.53	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.2**	0.92	**0.44**	0.19	
74-87-3	Chloromethane	ND	0.92	ND	0.44	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.92	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.92	ND	0.41	
74-83-9	Bromomethane	ND	0.92	ND	0.24	
75-00-3	Chloroethane	ND	0.92	ND	0.35	
64-17-5	Ethanol	**750**	9.2	**400**	4.9	
75-05-8	Acetonitrile	ND	0.92	ND	0.55	
107-02-8	Acrolein	**3.9**	3.7	**1.7**	1.6	
67-64-1	Acetone	**59**	9.2	**25**	3.9	
75-69-4	Trichlorofluoromethane	**2.3**	0.92	**0.41**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**53**	1.8	**22**	0.74	
107-13-1	Acrylonitrile	ND	0.92	ND	0.42	
75-35-4	1,1-Dichloroethene	ND	0.92	ND	0.23	
75-09-2	Methylene Chloride	**2.0**	0.92	**0.59**	0.26	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.92	ND	0.29	
76-13-1	Trichlorotrifluoroethane	ND	0.92	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.2	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	ND	0.92	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.92	ND	0.23	
1634-04-4	Methyl tert-Butyl Ether	ND	0.92	ND	0.25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **21-1F-031512** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-003

Test Code: EPA TO-15 Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01566

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.83

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.2	ND	2.6	
78-93-3	2-Butanone (MEK)	ND	9.2	ND	3.1	
156-59-2	cis-1,2-Dichloroethene	ND	0.92	ND	0.23	
141-78-6	Ethyl Acetate	**13**	1.8	**3.5**	0.51	
110-54-3	n-Hexane	**1.3**	0.92	**0.37**	0.26	
67-66-3	Chloroform	ND	0.92	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	**1.4**	0.92	**0.47**	0.31	
71-55-6	1,1,1-Trichloroethane	ND	0.92	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.92	ND	0.15	
110-82-7	Cyclohexane	ND	1.8	ND	0.53	
78-87-5	1,2-Dichloropropane	ND	0.92	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.92	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.92	ND	0.25	
80-62-6	Methyl Methacrylate	ND	1.8	ND	0.45	
142-82-5	n-Heptane	**4.1**	0.92	**1.0**	0.22	
10061-01-5	cis-1,3-Dichloropropene	ND	0.92	ND	0.20	
108-10-1	4-Methyl-2-pentanone	**2.1**	0.92	**0.52**	0.22	
10061-02-6	trans-1,3-Dichloropropene	ND	0.92	ND	0.20	
108-88-3	Toluene	**6.0**	0.92	**1.6**	0.24	
591-78-6	2-Hexanone	ND	0.92	ND	0.22	
124-48-1	Dibromochloromethane	ND	0.92	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.92	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **21-1F-031512** CAS Sample ID: P1201121-003
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01566

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.83

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**2.1**	0.92	**0.45**	0.19	
111-65-9	n-Octane	**1.1**	0.92	**0.23**	0.20	
108-90-7	Chlorobenzene	ND	0.92	ND	0.20	
179601-23-1	m,p-Xylenes	**11**	1.8	**2.6**	0.42	
75-25-2	Bromoform	ND	0.92	ND	0.089	
100-42-5	Styrene	ND	0.92	ND	0.21	
95-47-6	o-Xylene	**3.6**	0.92	**0.83**	0.21	
111-84-2	n-Nonane	**1.0**	0.92	**0.20**	0.17	
98-82-8	Cumene	ND	0.92	ND	0.19	
80-56-8	alpha-Pinene	**5.6**	0.92	**1.0**	0.16	
103-65-1	n-Propylbenzene	ND	0.92	ND	0.19	
622-96-8	4-Ethyltoluene	ND	0.92	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	**0.93**	0.92	**0.19**	0.19	
95-63-6	1,2,4-Trimethylbenzene	**2.9**	0.92	**0.58**	0.19	
100-44-7	Benzyl Chloride	ND	0.92	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.92	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.92	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.92	ND	0.15	
5989-27-5	d-Limonene	**45**	0.92	**8.0**	0.16	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.92	ND	0.095	
120-82-1	1,2,4-Trichlorobenzene	ND	0.92	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.92	ND	0.086	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **23-1F-031512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00988

Date Collected: 3/16/12
Date Received: 3/22/12
Date Analyzed: 3/27 - 3/28/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -4.67 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.83

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**4.0**	0.92	**2.3**	0.53	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	0.92	**0.39**	0.19	
74-87-3	Chloromethane	ND	0.92	ND	0.44	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.92	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.92	ND	0.41	
74-83-9	Bromomethane	ND	0.92	ND	0.24	
75-00-3	Chloroethane	ND	0.92	ND	0.35	
64-17-5	Ethanol	**1,400**	180	**750**	97	**D**
75-05-8	Acetonitrile	ND	0.92	ND	0.55	
107-02-8	Acrolein	ND	3.7	ND	1.6	
67-64-1	Acetone	**42**	9.2	**18**	3.9	
75-69-4	Trichlorofluoromethane	**1.1**	0.92	**0.19**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**27**	1.8	**11**	0.74	
107-13-1	Acrylonitrile	ND	0.92	ND	0.42	
75-35-4	1,1-Dichloroethene	ND	0.92	ND	0.23	
75-09-2	Methylene Chloride	**2.1**	0.92	**0.62**	0.26	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.92	ND	0.29	
76-13-1	Trichlorotrifluoroethane	ND	0.92	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.2	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	ND	0.92	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.92	ND	0.23	
1634-04-4	Methyl tert-Butyl Ether	ND	0.92	ND	0.25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **23-1F-031512** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-004

Test Code: EPA TO-15 Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27 - 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC00988

Initial Pressure (psig): -4.67 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.83

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.2	ND	2.6	
78-93-3	2-Butanone (MEK)	ND	9.2	ND	3.1	
156-59-2	cis-1,2-Dichloroethene	ND	0.92	ND	0.23	
141-78-6	Ethyl Acetate	**7.7**	1.8	**2.1**	0.51	
110-54-3	n-Hexane	ND	0.92	ND	0.26	
67-66-3	Chloroform	**3.0**	0.92	**0.62**	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.92	ND	0.31	
71-55-6	1,1,1-Trichloroethane	ND	0.92	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.92	ND	0.15	
110-82-7	Cyclohexane	ND	1.8	ND	0.53	
78-87-5	1,2-Dichloropropane	ND	0.92	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.92	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.92	ND	0.25	
80-62-6	Methyl Methacrylate	ND	1.8	ND	0.45	
142-82-5	n-Heptane	ND	0.92	ND	0.22	
10061-01-5	cis-1,3-Dichloropropene	ND	0.92	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.92	ND	0.22	
10061-02-6	trans-1,3-Dichloropropene	ND	0.92	ND	0.20	
108-88-3	Toluene	**2.6**	0.92	**0.69**	0.24	
591-78-6	2-Hexanone	ND	0.92	ND	0.22	
124-48-1	Dibromochloromethane	ND	0.92	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.92	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **23-1F-031512** CAS Sample ID: P1201121-004
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27 - 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC00988

Initial Pressure (psig): -4.67 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.83

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.92	ND	0.19	
111-65-9	n-Octane	ND	0.92	ND	0.20	
108-90-7	Chlorobenzene	ND	0.92	ND	0.20	
179601-23-1	m,p-Xylenes	ND	1.8	ND	0.42	
75-25-2	Bromoform	ND	0.92	ND	0.089	
100-42-5	Styrene	**1.1**	0.92	**0.25**	0.21	
95-47-6	o-Xylene	ND	0.92	ND	0.21	
111-84-2	n-Nonane	ND	0.92	ND	0.17	
98-82-8	Cumene	ND	0.92	ND	0.19	
80-56-8	alpha-Pinene	**2.0**	0.92	**0.35**	0.16	
103-65-1	n-Propylbenzene	ND	0.92	ND	0.19	
622-96-8	4-Ethyltoluene	ND	0.92	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.92	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	0.92	ND	0.19	
100-44-7	Benzyl Chloride	ND	0.92	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.92	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.92	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.92	ND	0.15	
5989-27-5	d-Limonene	**20**	0.92	**3.6**	0.16	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.92	ND	0.095	
120-82-1	1,2,4-Trichlorobenzene	ND	0.92	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.92	ND	0.086	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **17-1F-031712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01790

Date Collected: 3/16/12
Date Received: 3/22/12
Date Analyzed: 3/27 - 3/28/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -2.83 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**11**	0.77	**6.2**	0.45	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	0.77	**0.39**	0.16	
74-87-3	Chloromethane	ND	0.77	ND	0.37	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.77	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.77	ND	0.35	
74-83-9	Bromomethane	ND	0.77	ND	0.20	
75-00-3	Chloroethane	ND	0.77	ND	0.29	
64-17-5	Ethanol	**1,100**	150	**560**	82	**D**
75-05-8	Acetonitrile	ND	0.77	ND	0.46	
107-02-8	Acrolein	ND	3.1	ND	1.3	
67-64-1	Acetone	**68**	7.7	**29**	3.2	
75-69-4	Trichlorofluoromethane	**1.1**	0.77	**0.19**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**62**	1.5	**25**	0.63	
107-13-1	Acrylonitrile	ND	0.77	ND	0.35	
75-35-4	1,1-Dichloroethene	ND	0.77	ND	0.19	
75-09-2	Methylene Chloride	**5.1**	0.77	**1.5**	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.77	ND	0.25	
76-13-1	Trichlorotrifluoroethane	ND	0.77	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.7	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.77	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.77	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.77	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **17-1F-031712** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-005

Test Code: EPA TO-15 Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27 - 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01790

Initial Pressure (psig): -2.83 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.7	ND	2.2	
78-93-3	2-Butanone (MEK)	ND	7.7	ND	2.6	
156-59-2	cis-1,2-Dichloroethene	ND	0.77	ND	0.19	
141-78-6	Ethyl Acetate	**17**	1.5	**4.7**	0.43	
110-54-3	n-Hexane	**6.0**	0.77	**1.7**	0.22	
67-66-3	Chloroform	**2.4**	0.77	**0.50**	0.16	
109-99-9	Tetrahydrofuran (THF)	**1.9**	0.77	**0.66**	0.26	
71-55-6	1,1,1-Trichloroethane	ND	0.77	ND	0.14	
56-23-5	Carbon Tetrachloride	**1.5**	0.77	**0.23**	0.12	
110-82-7	Cyclohexane	**2.6**	1.5	**0.77**	0.45	
78-87-5	1,2-Dichloropropane	ND	0.77	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.77	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.77	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.38	
142-82-5	n-Heptane	**3.3**	0.77	**0.81**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.77	ND	0.17	
108-10-1	4-Methyl-2-pentanone	**1.1**	0.77	**0.28**	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.77	ND	0.17	
108-88-3	Toluene	**28**	0.77	**7.6**	0.20	
591-78-6	2-Hexanone	ND	0.77	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.77	ND	0.090	
106-93-4	1,2-Dibromoethane	ND	0.77	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **17-1F-031712** CAS Sample ID: P1201121-005
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27 - 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01790

Initial Pressure (psig): -2.83 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**4.0**	0.77	**0.85**	0.16	
111-65-9	n-Octane	**0.85**	0.77	**0.18**	0.16	
108-90-7	Chlorobenzene	ND	0.77	ND	0.17	
179601-23-1	m,p-Xylenes	**8.4**	1.5	**1.9**	0.35	
75-25-2	Bromoform	ND	0.77	ND	0.075	
100-42-5	Styrene	**2.9**	0.77	**0.68**	0.18	
95-47-6	o-Xylene	**2.8**	0.77	**0.64**	0.18	
111-84-2	n-Nonane	ND	0.77	ND	0.15	
98-82-8	Cumene	ND	0.77	ND	0.16	
80-56-8	alpha-Pinene	**26**	0.77	**4.7**	0.14	
103-65-1	n-Propylbenzene	ND	0.77	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.77	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.77	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.8**	0.77	**0.37**	0.16	
100-44-7	Benzyl Chloride	ND	0.77	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.77	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.77	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.77	ND	0.13	
5989-27-5	d-Limonene	**21**	0.77	**3.7**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.77	ND	0.080	
120-82-1	1,2,4-Trichlorobenzene	ND	0.77	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.77	ND	0.072	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **20-1F-031712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01305

Date Collected: 3/18/12
Date Received: 3/22/12
Date Analyzed: 3/27 - 3/28/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -1.78 Final Pressure (psig): 3.86

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**12**	0.72	**7.0**	0.42	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.2**	0.72	**0.45**	0.15	
74-87-3	Chloromethane	ND	0.72	ND	0.35	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.72	ND	0.10	
106-99-0	1,3-Butadiene	ND	0.72	ND	0.33	
74-83-9	Bromomethane	ND	0.72	ND	0.19	
75-00-3	Chloroethane	ND	0.72	ND	0.27	
64-17-5	Ethanol	**780**	140	**410**	76	**D**
75-05-8	Acetonitrile	ND	0.72	ND	0.43	
107-02-8	Acrolein	ND	2.9	ND	1.3	
67-64-1	Acetone	**41**	7.2	**17**	3.0	
75-69-4	Trichlorofluoromethane	**3.6**	0.72	**0.64**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**75**	1.4	**31**	0.59	
107-13-1	Acrylonitrile	ND	0.72	ND	0.33	
75-35-4	1,1-Dichloroethene	ND	0.72	ND	0.18	
75-09-2	Methylene Chloride	**1.0**	0.72	**0.30**	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.72	ND	0.23	
76-13-1	Trichlorotrifluoroethane	ND	0.72	ND	0.094	
75-15-0	Carbon Disulfide	ND	7.2	ND	2.3	
156-60-5	trans-1,2-Dichloroethene	ND	0.72	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.72	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.72	ND	0.20	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **20-1F-031712** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-006

Test Code: EPA TO-15 Date Collected: 3/18/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27 - 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01305

Initial Pressure (psig): -1.78 Final Pressure (psig): 3.86

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.2	ND	2.0	
78-93-3	2-Butanone (MEK)	ND	7.2	ND	2.4	
156-59-2	cis-1,2-Dichloroethene	ND	0.72	ND	0.18	
141-78-6	Ethyl Acetate	**3.1**	1.4	**0.87**	0.40	
110-54-3	n-Hexane	**2.2**	0.72	**0.62**	0.20	
67-66-3	Chloroform	ND	0.72	ND	0.15	
109-99-9	Tetrahydrofuran (THF)	**0.86**	0.72	**0.29**	0.24	
71-55-6	1,1,1-Trichloroethane	ND	0.72	ND	0.13	
56-23-5	Carbon Tetrachloride	ND	0.72	ND	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.42	
78-87-5	1,2-Dichloropropane	ND	0.72	ND	0.16	
75-27-4	Bromodichloromethane	ND	0.72	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.72	ND	0.20	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.35	
142-82-5	n-Heptane	**1.2**	0.72	**0.30**	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.72	ND	0.16	
108-10-1	4-Methyl-2-pentanone	**1.0**	0.72	**0.25**	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.72	ND	0.16	
108-88-3	Toluene	**11**	0.72	**3.0**	0.19	
591-78-6	2-Hexanone	ND	0.72	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.72	ND	0.085	
106-93-4	1,2-Dibromoethane	ND	0.72	ND	0.094	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **20-1F-031712** CAS Sample ID: P1201121-006
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/18/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27 - 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC01305

Initial Pressure (psig): -1.78 Final Pressure (psig): 3.86

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.72	ND	0.15	
111-65-9	n-Octane	**0.89**	0.72	**0.19**	0.15	
108-90-7	Chlorobenzene	ND	0.72	ND	0.16	
179601-23-1	m,p-Xylenes	**8.7**	1.4	**2.0**	0.33	
75-25-2	Bromoform	ND	0.72	ND	0.070	
100-42-5	Styrene	ND	0.72	ND	0.17	
95-47-6	o-Xylene	**2.5**	0.72	**0.59**	0.17	
111-84-2	n-Nonane	**3.0**	0.72	**0.57**	0.14	
98-82-8	Cumene	ND	0.72	ND	0.15	
80-56-8	alpha-Pinene	**4.7**	0.72	**0.84**	0.13	
103-65-1	n-Propylbenzene	ND	0.72	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.72	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.72	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	**1.8**	0.72	**0.37**	0.15	
100-44-7	Benzyl Chloride	ND	0.72	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.72	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.72	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.72	ND	0.12	
5989-27-5	d-Limonene	**230**	14	**41**	2.6	**D**
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.72	ND	0.075	
120-82-1	1,2,4-Trichlorobenzene	ND	0.72	ND	0.097	
87-68-3	Hexachlorobutadiene	ND	0.72	ND	0.068	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **28-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-007

Test Code: EPA TO-15 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.30 Liter(s)
Test Notes:
Container ID: AC00721

Initial Pressure (psig): -4.99 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.89

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**47**	3.2	**27**	1.8	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	3.2	ND	0.64	
74-87-3	Chloromethane	ND	3.2	ND	1.5	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	3.2	ND	0.45	
106-99-0	1,3-Butadiene	ND	3.2	ND	1.4	
74-83-9	Bromomethane	ND	3.2	ND	0.81	
75-00-3	Chloroethane	ND	3.2	ND	1.2	
64-17-5	Ethanol	**660**	32	**350**	17	
75-05-8	Acetonitrile	ND	3.2	ND	1.9	
107-02-8	Acrolein	ND	13	ND	5.5	
67-64-1	Acetone	**49**	32	**20**	13	
75-69-4	Trichlorofluoromethane	ND	3.2	ND	0.56	
67-63-0	2-Propanol (Isopropyl Alcohol)	**170**	6.3	**68**	2.6	
107-13-1	Acrylonitrile	ND	3.2	ND	1.5	
75-35-4	1,1-Dichloroethene	ND	3.2	ND	0.79	
75-09-2	Methylene Chloride	ND	3.2	ND	0.91	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	3.2	ND	1.0	
76-13-1	Trichlorotrifluoroethane	ND	3.2	ND	0.41	
75-15-0	Carbon Disulfide	ND	32	ND	10	
156-60-5	trans-1,2-Dichloroethene	ND	3.2	ND	0.79	
75-34-3	1,1-Dichloroethane	ND	3.2	ND	0.78	
1634-04-4	Methyl tert-Butyl Ether	ND	3.2	ND	0.87	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **28-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-007

Test Code: EPA TO-15 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.30 Liter(s)
Test Notes:
Container ID: AC00721

Initial Pressure (psig): -4.99 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.89

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	32	ND	8.9	
78-93-3	2-Butanone (MEK)	ND	32	ND	11	
156-59-2	cis-1,2-Dichloroethene	ND	3.2	ND	0.79	
141-78-6	Ethyl Acetate	ND	6.3	ND	1.7	
110-54-3	n-Hexane	ND	3.2	ND	0.89	
67-66-3	Chloroform	**4.0**	3.2	**0.82**	0.65	
109-99-9	Tetrahydrofuran (THF)	ND	3.2	ND	1.1	
71-55-6	1,1,1-Trichloroethane	ND	3.2	ND	0.58	
56-23-5	Carbon Tetrachloride	ND	3.2	ND	0.50	
110-82-7	Cyclohexane	ND	6.3	ND	1.8	
78-87-5	1,2-Dichloropropane	ND	3.2	ND	0.68	
75-27-4	Bromodichloromethane	ND	3.2	ND	0.47	
123-91-1	1,4-Dioxane	ND	3.2	ND	0.87	
80-62-6	Methyl Methacrylate	ND	6.3	ND	1.5	
142-82-5	n-Heptane	ND	3.2	ND	0.77	
10061-01-5	cis-1,3-Dichloropropene	ND	3.2	ND	0.69	
108-10-1	4-Methyl-2-pentanone	ND	3.2	ND	0.77	
10061-02-6	trans-1,3-Dichloropropene	ND	3.2	ND	0.69	
108-88-3	Toluene	**5.0**	3.2	**1.3**	0.84	
591-78-6	2-Hexanone	ND	3.2	ND	0.77	
124-48-1	Dibromochloromethane	ND	3.2	ND	0.37	
106-93-4	1,2-Dibromoethane	ND	3.2	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **28-1F-031912** CAS Sample ID: P1201121-007
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.30 Liter(s)
Test Notes:
Container ID: AC00721

Initial Pressure (psig): -4.99 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.89

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	3.2	ND	0.66	
111-65-9	n-Octane	ND	3.2	ND	0.67	
108-90-7	Chlorobenzene	ND	3.2	ND	0.68	
179601-23-1	m,p-Xylenes	ND	6.3	ND	1.5	
75-25-2	Bromoform	ND	3.2	ND	0.30	
100-42-5	Styrene	ND	3.2	ND	0.74	
95-47-6	o-Xylene	ND	3.2	ND	0.73	
111-84-2	n-Nonane	ND	3.2	ND	0.60	
98-82-8	Cumene	ND	3.2	ND	0.64	
80-56-8	alpha-Pinene	ND	3.2	ND	0.57	
103-65-1	n-Propylbenzene	ND	3.2	ND	0.64	
622-96-8	4-Ethyltoluene	ND	3.2	ND	0.64	
108-67-8	1,3,5-Trimethylbenzene	ND	3.2	ND	0.64	
95-63-6	1,2,4-Trimethylbenzene	ND	3.2	ND	0.64	
100-44-7	Benzyl Chloride	ND	3.2	ND	0.61	
541-73-1	1,3-Dichlorobenzene	ND	3.2	ND	0.52	
106-46-7	1,4-Dichlorobenzene	ND	3.2	ND	0.52	
95-50-1	1,2-Dichlorobenzene	ND	3.2	ND	0.52	
5989-27-5	d-Limonene	**120**	3.2	**21**	0.57	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.2	ND	0.33	
120-82-1	1,2,4-Trichlorobenzene	ND	3.2	ND	0.42	
87-68-3	Hexachlorobutadiene	ND	3.2	ND	0.30	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **22-1F-031912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-008

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01171

Date Collected: 3/20/12
Date Received: 3/22/12
Date Analyzed: 3/28/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.96 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**4.1**	0.78	**2.4**	0.45	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.78	**0.41**	0.16	
74-87-3	Chloromethane	ND	0.78	ND	0.38	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.78	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.78	ND	0.35	
74-83-9	Bromomethane	ND	0.78	ND	0.20	
75-00-3	Chloroethane	ND	0.78	ND	0.30	
64-17-5	Ethanol	**130**	7.8	**71**	4.1	
75-05-8	Acetonitrile	ND	0.78	ND	0.46	
107-02-8	Acrolein	ND	3.1	ND	1.4	
67-64-1	Acetone	**29**	7.8	**12**	3.3	
75-69-4	Trichlorofluoromethane	**1.2**	0.78	**0.21**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**24**	1.6	**10**	0.63	
107-13-1	Acrylonitrile	ND	0.78	ND	0.36	
75-35-4	1,1-Dichloroethene	ND	0.78	ND	0.20	
75-09-2	Methylene Chloride	**8.5**	0.78	**2.5**	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.78	ND	0.25	
76-13-1	Trichlorotrifluoroethane	ND	0.78	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.78	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.78	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.78	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **22-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-008

Test Code: EPA TO-15 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01171

Initial Pressure (psig): -2.96 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.8	ND	2.2	
78-93-3	2-Butanone (MEK)	ND	7.8	ND	2.6	
156-59-2	cis-1,2-Dichloroethene	ND	0.78	ND	0.20	
141-78-6	Ethyl Acetate	ND	1.6	ND	0.43	
110-54-3	n-Hexane	**1.8**	0.78	**0.50**	0.22	
67-66-3	Chloroform	ND	0.78	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.78	ND	0.26	
71-55-6	1,1,1-Trichloroethane	ND	0.78	ND	0.14	
56-23-5	Carbon Tetrachloride	ND	0.78	ND	0.12	
110-82-7	Cyclohexane	ND	1.6	ND	0.45	
78-87-5	1,2-Dichloropropane	ND	0.78	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.78	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.78	ND	0.22	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.38	
142-82-5	n-Heptane	**0.91**	0.78	**0.22**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.78	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.78	ND	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.78	ND	0.17	
108-88-3	Toluene	**4.5**	0.78	**1.2**	0.21	
591-78-6	2-Hexanone	ND	0.78	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.78	ND	0.092	
106-93-4	1,2-Dibromoethane	ND	0.78	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **22-1F-031912** CAS Sample ID: P1201121-008
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01171

Initial Pressure (psig): -2.96 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.78	ND	0.16	
111-65-9	n-Octane	ND	0.78	ND	0.17	
108-90-7	Chlorobenzene	ND	0.78	ND	0.17	
179601-23-1	m,p-Xylenes	ND	1.6	ND	0.36	
75-25-2	Bromoform	ND	0.78	ND	0.075	
100-42-5	Styrene	ND	0.78	ND	0.18	
95-47-6	o-Xylene	ND	0.78	ND	0.18	
111-84-2	n-Nonane	**2.8**	0.78	**0.54**	0.15	
98-82-8	Cumene	ND	0.78	ND	0.16	
80-56-8	alpha-Pinene	**0.98**	0.78	**0.18**	0.14	
103-65-1	n-Propylbenzene	ND	0.78	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.78	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.78	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**0.96**	0.78	**0.19**	0.16	
100-44-7	Benzyl Chloride	ND	0.78	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.78	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.78	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.78	ND	0.13	
5989-27-5	d-Limonene	**5.0**	0.78	**0.89**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.78	ND	0.081	
120-82-1	1,2,4-Trichlorobenzene	ND	0.78	ND	0.11	
87-68-3	Hexachlorobutadiene	ND	0.78	ND	0.073	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **26-1F-031912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-009

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01783

Date Collected: 3/20/12
Date Received: 3/22/12
Date Analyzed: 3/28/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.72 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**1.7**	0.83	**0.99**	0.48	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	0.83	**0.39**	0.17	
74-87-3	Chloromethane	ND	0.83	ND	0.40	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.83	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.83	ND	0.38	
74-83-9	Bromomethane	ND	0.83	ND	0.21	
75-00-3	Chloroethane	ND	0.83	ND	0.31	
64-17-5	Ethanol	**280**	8.3	**150**	4.4	
75-05-8	Acetonitrile	ND	0.83	ND	0.49	
107-02-8	Acrolein	ND	3.3	ND	1.4	
67-64-1	Acetone	**36**	8.3	**15**	3.5	
75-69-4	Trichlorofluoromethane	**5.3**	0.83	**0.95**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**11**	1.7	**4.4**	0.68	**M1**
107-13-1	Acrylonitrile	ND	0.83	ND	0.38	
75-35-4	1,1-Dichloroethene	ND	0.83	ND	0.21	
75-09-2	Methylene Chloride	**38**	0.83	**11**	0.24	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.83	ND	0.27	
76-13-1	Trichlorotrifluoroethane	ND	0.83	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.3	ND	2.7	
156-60-5	trans-1,2-Dichloroethene	ND	0.83	ND	0.21	
75-34-3	1,1-Dichloroethane	ND	0.83	ND	0.21	
1634-04-4	Methyl tert-Butyl Ether	ND	0.83	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
M1 = Matrix interference due to coelution with a non-target compound; results may be biased high.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **26-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-009

Test Code: EPA TO-15 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01783

Initial Pressure (psig): -3.72 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.3	ND	2.4	
78-93-3	2-Butanone (MEK)	**8.3**	8.3	**2.8**	2.8	
156-59-2	cis-1,2-Dichloroethene	ND	0.83	ND	0.21	
141-78-6	Ethyl Acetate	**3.5**	1.7	**0.97**	0.46	
110-54-3	n-Hexane	**0.89**	0.83	**0.25**	0.24	
67-66-3	Chloroform	ND	0.83	ND	0.17	
109-99-9	Tetrahydrofuran (THF)	ND	0.83	ND	0.28	
71-55-6	1,1,1-Trichloroethane	ND	0.83	ND	0.15	
56-23-5	Carbon Tetrachloride	ND	0.83	ND	0.13	
110-82-7	Cyclohexane	ND	1.7	ND	0.48	
78-87-5	1,2-Dichloropropane	ND	0.83	ND	0.18	
75-27-4	Bromodichloromethane	ND	0.83	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.83	ND	0.23	
80-62-6	Methyl Methacrylate	ND	1.7	ND	0.41	
142-82-5	n-Heptane	ND	0.83	ND	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	0.83	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	0.83	ND	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	0.83	ND	0.18	
108-88-3	Toluene	**2.1**	0.83	**0.57**	0.22	
591-78-6	2-Hexanone	ND	0.83	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.83	ND	0.097	
106-93-4	1,2-Dibromoethane	ND	0.83	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **26-1F-031912** CAS Sample ID: P1201121-009
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/22/12
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01783

Initial Pressure (psig): -3.72 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.83	ND	0.17	
111-65-9	n-Octane	ND	0.83	ND	0.18	
108-90-7	Chlorobenzene	ND	0.83	ND	0.18	
179601-23-1	m,p-Xylenes	ND	1.7	ND	0.38	
75-25-2	Bromoform	ND	0.83	ND	0.080	
100-42-5	Styrene	ND	0.83	ND	0.20	
95-47-6	o-Xylene	ND	0.83	ND	0.19	
111-84-2	n-Nonane	ND	0.83	ND	0.16	
98-82-8	Cumene	ND	0.83	ND	0.17	
80-56-8	alpha-Pinene	**1.2**	0.83	**0.21**	0.15	
103-65-1	n-Propylbenzene	ND	0.83	ND	0.17	
622-96-8	4-Ethyltoluene	ND	0.83	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.83	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	ND	0.83	ND	0.17	
100-44-7	Benzyl Chloride	ND	0.83	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.83	ND	0.14	
106-46-7	1,4-Dichlorobenzene	ND	0.83	ND	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.83	ND	0.14	
5989-27-5	d-Limonene	**3.2**	0.83	**0.58**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.83	ND	0.086	
120-82-1	1,2,4-Trichlorobenzene	ND	0.83	ND	0.11	
87-68-3	Hexachlorobutadiene	ND	0.83	ND	0.078	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **Method Blank** CAS Sample ID: P120327-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120328-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120328-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201121
Client Sample ID: **Method Blank** CAS Sample ID: P120328-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201121

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 3/15 - 3/20/12
Date(s) Received: 3/22/12
Date(s) Analyzed: 3/27 - 3/28/12

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120327-MB	**105**	**99**	**97**	70-130	
Method Blank	P120328-MB	**103**	**99**	**100**	70-130	
Lab Control Sample	P120327-LCS	**106**	**98**	**97**	70-130	
Lab Control Sample	P120328-LCS	**103**	**99**	**100**	70-130	
19-1F-031412	P1201121-001	**106**	**98**	**99**	70-130	
53-1F-031412	P1201121-002	**106**	**97**	**99**	70-130	
53-1F-031412	P1201121-002DUP	**105**	**99**	**96**	70-130	
21-1F-031512	P1201121-003	**103**	**100**	**96**	70-130	
23-1F-031512	P1201121-004	**102**	**99**	**98**	70-130	
17-1F-031712	P1201121-005	**102**	**98**	**98**	70-130	
20-1F-031712	P1201121-006	**103**	**99**	**99**	70-130	
28-1F-031912	P1201121-007	**102**	**99**	**101**	70-130	
22-1F-031912	P1201121-008	**102**	**99**	**100**	70-130	
26-1F-031912	P1201121-009	**102**	**99**	**100**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**187**	**94**	59-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**157**	**80**	63-115	
74-87-3	Chloromethane	190	**153**	**81**	59-124	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**153**	**77**	65-113	
106-99-0	1,3-Butadiene	204	**181**	**89**	60-138	
74-83-9	Bromomethane	194	**158**	**81**	69-129	
75-00-3	Chloroethane	196	**158**	**81**	60-120	
64-17-5	Ethanol	928	**777**	**84**	58-121	
75-05-8	Acetonitrile	194	**177**	**91**	64-129	
107-02-8	Acrolein	198	**163**	**82**	54-127	
67-64-1	Acetone	1,010	**830**	**82**	59-114	
75-69-4	Trichlorofluoromethane	202	**160**	**79**	66-108	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**293**	**77**	50-113	
107-13-1	Acrylonitrile	198	**183**	**92**	72-135	
75-35-4	1,1-Dichloroethene	212	**179**	**84**	70-117	
75-09-2	Methylene Chloride	206	**165**	**80**	61-108	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**200**	**96**	70-131	
76-13-1	Trichlorotrifluoroethane	206	**171**	**83**	70-113	
75-15-0	Carbon Disulfide	208	**168**	**81**	65-112	
156-60-5	trans-1,2-Dichloroethene	196	**173**	**88**	71-119	
75-34-3	1,1-Dichloroethane	200	**177**	**89**	71-116	
1634-04-4	Methyl tert-Butyl Ether	198	**177**	**89**	67-116	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**876**	**92**	59-142	
78-93-3	2-Butanone (MEK)	206	**184**	**89**	68-125	
156-59-2	cis-1,2-Dichloroethene	206	**179**	**87**	69-119	
141-78-6	Ethyl Acetate	398	**355**	**89**	63-130	
110-54-3	n-Hexane	198	**164**	**83**	57-120	
67-66-3	Chloroform	214	**176**	**82**	69-111	
109-99-9	Tetrahydrofuran (THF)	202	**171**	**85**	57-123	
71-55-6	1,1,1-Trichloroethane	198	**168**	**85**	73-119	
56-23-5	Carbon Tetrachloride	202	**175**	**87**	74-129	
110-82-7	Cyclohexane	390	**320**	**82**	70-113	
78-87-5	1,2-Dichloropropane	198	**166**	**84**	69-118	
75-27-4	Bromodichloromethane	198	**171**	**86**	75-124	
123-91-1	1,4-Dioxane	200	**169**	**85**	71-123	
80-62-6	Methyl Methacrylate	400	**354**	**89**	72-127	
142-82-5	n-Heptane	196	**168**	**86**	68-120	
10061-01-5	cis-1,3-Dichloropropene	188	**166**	**88**	71-130	
108-10-1	4-Methyl-2-pentanone	204	**185**	**91**	69-130	
10061-02-6	trans-1,3-Dichloropropene	210	**192**	**91**	76-133	
108-88-3	Toluene	202	**161**	**80**	67-111	
591-78-6	2-Hexanone	222	**193**	**87**	70-123	
124-48-1	Dibromochloromethane	206	**176**	**85**	75-129	
106-93-4	1,2-Dibromoethane	200	**162**	**81**	73-122	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120327-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/27/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**188**	**85**	68-132	
111-65-9	n-Octane	200	**176**	**88**	68-116	
108-90-7	Chlorobenzene	202	**157**	**78**	69-113	
179601-23-1	m,p-Xylenes	392	**323**	**82**	70-116	
75-25-2	Bromoform	208	**169**	**81**	69-127	
100-42-5	Styrene	200	**168**	**84**	71-125	
95-47-6	o-Xylene	194	**158**	**81**	70-116	
111-84-2	n-Nonane	196	**167**	**85**	68-116	
98-82-8	Cumene	190	**155**	**82**	70-116	
80-56-8	alpha-Pinene	186	**157**	**84**	71-119	
103-65-1	n-Propylbenzene	192	**155**	**81**	71-119	
622-96-8	4-Ethyltoluene	198	**159**	**80**	71-119	
108-67-8	1,3,5-Trimethylbenzene	200	**163**	**82**	71-121	
95-63-6	1,2,4-Trimethylbenzene	194	**163**	**84**	73-127	
100-44-7	Benzyl Chloride	200	**184**	**92**	65-137	
541-73-1	1,3-Dichlorobenzene	200	**148**	**74**	68-123	
106-46-7	1,4-Dichlorobenzene	206	**145**	**70**	65-120	
95-50-1	1,2-Dichlorobenzene	198	**147**	**74**	67-121	
5989-27-5	d-Limonene	200	**177**	**89**	67-130	
96-12-8	1,2-Dibromo-3-chloropropane	196	**162**	**83**	72-133	
120-82-1	1,2,4-Trichlorobenzene	196	**149**	**76**	62-133	
87-68-3	Hexachlorobutadiene	202	**152**	**75**	60-128	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120328-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	CAS Acceptance Limits	**Data Qualifier**
115-07-1	Propene	198	**180**	**91**	59-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**154**	**79**	63-115	
74-87-3	Chloromethane	190	**147**	**77**	59-124	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**152**	**76**	65-113	
106-99-0	1,3-Butadiene	204	**180**	**88**	60-138	
74-83-9	Bromomethane	194	**156**	**80**	69-129	
75-00-3	Chloroethane	196	**156**	**80**	60-120	
64-17-5	Ethanol	928	**755**	**81**	58-121	
75-05-8	Acetonitrile	194	**173**	**89**	64-129	
107-02-8	Acrolein	198	**158**	**80**	54-127	
67-64-1	Acetone	1,010	**805**	**80**	59-114	
75-69-4	Trichlorofluoromethane	202	**157**	**78**	66-108	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**289**	**76**	50-113	
107-13-1	Acrylonitrile	198	**179**	**90**	72-135	
75-35-4	1,1-Dichloroethene	212	**177**	**83**	70-117	
75-09-2	Methylene Chloride	206	**162**	**79**	61-108	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**192**	**92**	70-131	
76-13-1	Trichlorotrifluoroethane	206	**170**	**83**	70-113	
75-15-0	Carbon Disulfide	208	**166**	**80**	65-112	
156-60-5	trans-1,2-Dichloroethene	196	**166**	**85**	71-119	
75-34-3	1,1-Dichloroethane	200	**171**	**86**	71-116	
1634-04-4	Methyl tert-Butyl Ether	198	**172**	**87**	67-116	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120328-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**857**	**90**	59-142	
78-93-3	2-Butanone (MEK)	206	**181**	**88**	68-125	
156-59-2	cis-1,2-Dichloroethene	206	**173**	**84**	69-119	
141-78-6	Ethyl Acetate	398	**346**	**87**	63-130	
110-54-3	n-Hexane	198	**161**	**81**	57-120	
67-66-3	Chloroform	214	**171**	**80**	69-111	
109-99-9	Tetrahydrofuran (THF)	202	**166**	**82**	57-123	
71-55-6	1,1,1-Trichloroethane	198	**164**	**83**	73-119	
56-23-5	Carbon Tetrachloride	202	**172**	**85**	74-129	
110-82-7	Cyclohexane	390	**314**	**81**	70-113	
78-87-5	1,2-Dichloropropane	198	**161**	**81**	69-118	
75-27-4	Bromodichloromethane	198	**165**	**83**	75-124	
123-91-1	1,4-Dioxane	200	**166**	**83**	71-123	
80-62-6	Methyl Methacrylate	400	**350**	**88**	72-127	
142-82-5	n-Heptane	196	**165**	**84**	68-120	
10061-01-5	cis-1,3-Dichloropropene	188	**162**	**86**	71-130	
108-10-1	4-Methyl-2-pentanone	204	**180**	**88**	69-130	
10061-02-6	trans-1,3-Dichloropropene	210	**186**	**89**	76-133	
108-88-3	Toluene	202	**158**	**78**	67-111	
591-78-6	2-Hexanone	222	**186**	**84**	70-123	
124-48-1	Dibromochloromethane	206	**176**	**85**	75-129	
106-93-4	1,2-Dibromoethane	200	**161**	**81**	73-122	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120328-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 3/28/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**180**	**82**	68-132	
111-65-9	n-Octane	200	**172**	**86**	68-116	
108-90-7	Chlorobenzene	202	**157**	**78**	69-113	
179601-23-1	m,p-Xylenes	392	**319**	**81**	70-116	
75-25-2	Bromoform	208	**169**	**81**	69-127	
100-42-5	Styrene	200	**167**	**84**	71-125	
95-47-6	o-Xylene	194	**157**	**81**	70-116	
111-84-2	n-Nonane	196	**161**	**82**	68-116	
98-82-8	Cumene	190	**153**	**81**	70-116	
80-56-8	alpha-Pinene	186	**155**	**83**	71-119	
103-65-1	n-Propylbenzene	192	**153**	**80**	71-119	
622-96-8	4-Ethyltoluene	198	**157**	**79**	71-119	
108-67-8	1,3,5-Trimethylbenzene	200	**162**	**81**	71-121	
95-63-6	1,2,4-Trimethylbenzene	194	**161**	**83**	73-127	
100-44-7	Benzyl Chloride	200	**183**	**92**	65-137	
541-73-1	1,3-Dichlorobenzene	200	**149**	**75**	68-123	
106-46-7	1,4-Dichlorobenzene	206	**146**	**71**	65-120	
95-50-1	1,2-Dichlorobenzene	198	**148**	**75**	67-121	
5989-27-5	d-Limonene	200	**172**	**86**	67-130	
96-12-8	1,2-Dibromo-3-chloropropane	196	**164**	**84**	72-133	
120-82-1	1,2,4-Trichlorobenzene	196	**150**	**77**	62-133	
87-68-3	Hexachlorobutadiene	202	**153**	**76**	60-128	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **53-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01478

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Propene	ND	ND	ND	ND	-	-	25	
Dichlorodifluoromethane (CFC 12)	1.96	0.396	1.91	0.386	1.935	**3**	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	201	107	198	105	199.5	**2**	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	23.9	10.1	24.1	10.1	24	**0.8**	25	
Trichlorofluoromethane	1.33	0.238	1.28	0.228	1.305	**4**	25	
2-Propanol (Isopropyl Alcohol)	ND	ND	1.51	0.615	-	-	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	18.6	5.37	18.5	5.33	18.55	**0.5**	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **53-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01478

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	ND	ND	-	-	25	
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	16.3	4.52	16.3	4.54	16.3	**0**	25	
n-Hexane	ND	ND	ND	ND	-	-	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
Toluene	5.48	1.45	5.61	1.49	5.545	**2**	25	
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **53-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01478

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/27/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
n-Butyl Acetate	2.64	0.557	2.69	0.567	2.665	**2**	25	
n-Octane	ND	ND	ND	ND	-	-	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	1.81	0.416	1.83	0.421	1.82	**1**	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
n-Nonane	1.42	0.271	1.49	0.284	1.455	**5**	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	5.15	0.925	5.31	0.953	5.23	**3**	25	
n-Propylbenzene	ND	ND	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	47.3	8.49	48.4	8.68	47.85	**2**	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **19-1F-031412** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-001

Test Code: EPA TO-15 SIM Date Collected: 3/15/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01817
Initial Pressure (psig): -3.81 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.67

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.042	ND	0.016	
107-06-2	1,2-Dichloroethane	**0.12**	0.042	**0.030**	0.010	
71-43-2	Benzene	**0.70**	0.13	**0.22**	0.039	
79-01-6	Trichloroethene	ND	0.042	ND	0.0078	
79-00-5	1,1,2-Trichloroethane	ND	0.17	ND	0.031	
127-18-4	Tetrachloroethene	**0.070**	0.042	**0.010**	0.0062	
100-41-4	Ethylbenzene	**0.76**	0.17	**0.18**	0.038	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.042	ND	0.0061	
91-20-3	Naphthalene	ND	0.17	ND	0.032	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **53-1F-031412** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-002

Test Code: EPA TO-15 SIM Date Collected: 3/15/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01478
Initial Pressure (psig): -1.95 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.036	ND	0.014	
107-06-2	1,2-Dichloroethane	**0.14**	0.036	**0.034**	0.0089	
71-43-2	Benzene	**0.72**	0.11	**0.22**	0.034	
79-01-6	Trichloroethene	ND	0.036	ND	0.0067	
79-00-5	1,1,2-Trichloroethane	ND	0.14	ND	0.026	
127-18-4	Tetrachloroethene	ND	0.036	ND	0.0053	
100-41-4	Ethylbenzene	**0.61**	0.14	**0.14**	0.033	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.036	ND	0.0052	
91-20-3	Naphthalene	ND	0.14	ND	0.027	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **21-1F-031512** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-003

Test Code: EPA TO-15 SIM Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01566

Initial Pressure (psig): -4.65 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.83

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.046	ND	0.018	
107-06-2	1,2-Dichloroethane	**1.1**	0.046	**0.26**	0.011	
71-43-2	Benzene	**0.92**	0.14	**0.29**	0.043	
79-01-6	Trichloroethene	**1.3**	0.046	**0.24**	0.0085	
79-00-5	1,1,2-Trichloroethane	ND	0.18	ND	0.034	
127-18-4	Tetrachloroethene	**0.20**	0.046	**0.029**	0.0067	
100-41-4	Ethylbenzene	**2.9**	0.18	**0.67**	0.042	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.046	ND	0.0067	
91-20-3	Naphthalene	**0.39**	0.18	**0.074**	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **23-1F-031512** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-004

Test Code: EPA TO-15 SIM Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00988

Initial Pressure (psig): -4.67 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.83

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.046	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.71**	0.046	**0.17**	0.011	
71-43-2	Benzene	**0.46**	0.14	**0.14**	0.043	
79-01-6	Trichloroethene	ND	0.046	ND	0.0085	
79-00-5	1,1,2-Trichloroethane	ND	0.18	ND	0.034	
127-18-4	Tetrachloroethene	**0.21**	0.046	**0.031**	0.0067	
100-41-4	Ethylbenzene	**0.43**	0.18	**0.098**	0.042	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.046	ND	0.0067	
91-20-3	Naphthalene	ND	0.18	ND	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **17-1F-031712** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-005

Test Code: EPA TO-15 SIM Date Collected: 3/16/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01790
Initial Pressure (psig): -2.83 Final Pressure (psig): 3.61

Canister Dilution Factor: 1.54

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.039	ND	0.015	
107-06-2	1,2-Dichloroethane	**1.0**	0.039	**0.25**	0.0095	
71-43-2	Benzene	**4.0**	0.12	**1.3**	0.036	
79-01-6	Trichloroethene	**0.088**	0.039	**0.016**	0.0072	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.028	
127-18-4	Tetrachloroethene	**0.17**	0.039	**0.024**	0.0057	
100-41-4	Ethylbenzene	**2.4**	0.15	**0.54**	0.035	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.039	ND	0.0056	
91-20-3	Naphthalene	**0.74**	0.15	**0.14**	0.029	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **20-1F-031712** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-006

Test Code: EPA TO-15 SIM Date Collected: 3/18/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01305
Initial Pressure (psig): -1.78 Final Pressure (psig): 3.86

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.036	ND	0.014	
107-06-2	1,2-Dichloroethane	**0.085**	0.036	**0.021**	0.0089	
71-43-2	Benzene	**1.6**	0.11	**0.51**	0.034	
79-01-6	Trichloroethene	ND	0.036	ND	0.0067	
79-00-5	1,1,2-Trichloroethane	ND	0.14	ND	0.026	
127-18-4	Tetrachloroethene	**1.1**	0.036	**0.16**	0.0053	
100-41-4	Ethylbenzene	**2.3**	0.14	**0.53**	0.033	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.036	ND	0.0052	
91-20-3	Naphthalene	**0.32**	0.14	**0.062**	0.027	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **28-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-007

Test Code: EPA TO-15 SIM Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00721
Initial Pressure (psig): -4.99 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.89

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.047	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.053**	0.047	**0.013**	0.012	
71-43-2	Benzene	**0.47**	0.14	**0.15**	0.044	
79-01-6	Trichloroethene	ND	0.047	ND	0.0088	
79-00-5	1,1,2-Trichloroethane	ND	0.19	ND	0.035	
127-18-4	Tetrachloroethene	**2.6**	0.047	**0.38**	0.0070	
100-41-4	Ethylbenzene	**0.33**	0.19	**0.076**	0.044	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.047	ND	0.0069	
91-20-3	Naphthalene	**0.44**	0.19	**0.083**	0.036	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **22-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-008

Test Code: EPA TO-15 SIM Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01171
Initial Pressure (psig): -2.96 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.039	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.054**	0.039	**0.013**	0.0096	
71-43-2	Benzene	**0.62**	0.12	**0.20**	0.037	
79-01-6	Trichloroethene	**2.1**	0.039	**0.39**	0.0073	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.029	
127-18-4	Tetrachloroethene	**0.048**	0.039	**0.0071**	0.0058	
100-41-4	Ethylbenzene	**0.25**	0.16	**0.057**	0.036	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.039	ND	0.0057	
91-20-3	Naphthalene	**0.18**	0.16	**0.035**	0.030	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **26-1F-031912** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201121-009

Test Code: EPA TO-15 SIM Date Collected: 3/20/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/22/12
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01783
Initial Pressure (psig): -3.72 Final Pressure (psig): 3.54

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.042	ND	0.016	
107-06-2	1,2-Dichloroethane	**0.13**	0.042	**0.032**	0.010	
71-43-2	Benzene	**0.51**	0.12	**0.16**	0.039	
79-01-6	Trichloroethene	ND	0.042	ND	0.0077	
79-00-5	1,1,2-Trichloroethane	ND	0.17	ND	0.030	
127-18-4	Tetrachloroethene	**0.096**	0.042	**0.014**	0.0061	
100-41-4	Ethylbenzene	**0.53**	0.17	**0.12**	0.038	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.042	ND	0.0060	
91-20-3	Naphthalene	**0.28**	0.17	**0.053**	0.032	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120331-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201121

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date(s) Collected: 3/15 - 3/20/12
Analyst: Karen Ryan Date(s) Received: 3/22/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 3/31/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120331-MB	**102**	**113**	**111**	70-130	
Lab Control Sample	P120331-LCS	**103**	**113**	**115**	70-130	
19-1F-031412	P1201121-001	**103**	**115**	**105**	70-130	
19-1F-031412	P1201121-001DUP	**100**	**113**	**106**	70-130	
53-1F-031412	P1201121-002	**102**	**112**	**104**	70-130	
21-1F-031512	P1201121-003	**101**	**116**	**106**	70-130	
23-1F-031512	P1201121-004	**101**	**112**	**110**	70-130	
17-1F-031712	P1201121-005	**99**	**111**	**108**	70-130	
20-1F-031712	P1201121-006	**101**	**111**	**107**	70-130	
28-1F-031912	P1201121-007	**102**	**112**	**112**	70-130	
22-1F-031912	P1201121-008	**98**	**114**	**111**	70-130	
26-1F-031912	P1201121-009	**99**	**112**	**114**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201121
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120331-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 3/31/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**3.18**	**82**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**3.15**	**79**	51-140	
71-43-2	Benzene	3.96	**3.54**	**89**	56-125	
79-01-6	Trichloroethene	3.88	**2.93**	**76**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**2.92**	**74**	49-137	
127-18-4	Tetrachloroethene	3.68	**2.84**	**77**	58-134	
100-41-4	Ethylbenzene	3.96	**3.05**	**77**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**2.99**	**78**	53-148	
91-20-3	Naphthalene	3.44	**3.24**	**94**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **19-1F-031412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201121
CAS Sample ID: P1201121-001DUP

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01817

Date Collected: 3/15/12
Date Received: 3/22/12
Date Analyzed: 3/31/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.81 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.67

CAS #	Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
75-01-4	Vinyl Chloride	ND	ND	ND	ND	-	-	25	
107-06-2	1,2-Dichloroethane	0.122	0.0301	0.120	0.0297	0.121	**2**	25	
71-43-2	Benzene	0.705	0.221	0.718	0.225	0.7115	**2**	25	
79-01-6	Trichloroethene	ND	ND	ND	ND	-	-	25	
79-00-5	1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
127-18-4	Tetrachloroethene	0.0701	0.0103	0.0690	0.0102	0.06955	**2**	25	
100-41-4	Ethylbenzene	0.764	0.176	0.778	0.179	0.771	**2**	25	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
91-20-3	Naphthalene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

Massachusetts APH ICAL Method: M8011412A.M ICAL Date: 1/14/2012 Instrument ID: MS08

Hydrocarbon Ranges

	areas							masses					
C5-C8 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopentane	60478	112606	488243	2480105	4710733	9222808		0.520	1.04	5.20	26.0	52.0	104
n-Hexane	59953	110631	507126	2577865	4931102	9678199		0.490	0.98	4.90	24.5	49.0	98
Cyclohexane	63203	115230	548910	2874726	5524402	10890911		0.500	1.00	5.00	25.0	50.0	100
2,3-Dimethylpentane	68648	127222	585183	2998017	5742104	11319597		0.520	1.04	5.20	26.0	52.0	104
n-Heptane	66143	120286	558074	2884817	5509801	10873046		0.490	0.98	4.90	24.5	49.0	98
n-Octane	76169	137829	632891	3286017	6205035	12092514		0.505	1.01	5.05	25.3	50.5	101
area sum:	**394594**	**723804**	**3320427**	**17101547**	**32623177**	**64077075**	**sum:**	**3.025**	**6.050**	**30.25**	**151.30**	**302.50**	**605.00**
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
2,3-Dimethylheptane	78780	147724	682518	3501487	6691428	13148840		0.485	0.97	4.85	24.3	48.5	97
n-Nonane	77464	140680	662221	3417128	6555165	12940625		0.485	0.97	4.85	24.3	48.5	97
n-Decane	80593	147724	705259	3651028	7021424	13870530		0.490	0.98	4.90	24.5	49.0	98
Butylcyclohexane	88915	166782	776903	4026931	7749936	15415340		0.495	0.99	4.95	24.8	49.5	99
n-Undecane	80867	152557	719618	3772331	7263077	14385881		0.480	0.96	4.80	24.0	48.0	96
n-Dodecane	70045	143746	687255	3673524	7115012	14041583		0.500	1.00	5.00	25.0	50.0	100
area sum:	**476664**	**899213**	**4233774**	**22042429**	**42396042**	**83802799**	**sum:**	**2.935**	**5.870**	**29.35**	**146.90**	**293.50**	**587.00**
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopropylbenzene	10658	19169	87439	448287	849124	1695737		0.485	0.97	4.85	24.3	48.5	97
3-Ethyltoluene	11805	20564	97823	504510	977020	1973178		0.470	0.94	4.70	23.5	47.0	94
1,3,5-Trimethylbenzene	15759	29260	134073	700133	1353305	2726630		0.490	0.98	4.90	24.5	49.0	98
1,2,3-Trimethylbenzene	17195	31328	143473	757946	1493373	3063059		0.495	0.99	4.95	24.8	49.5	99
p-Isopropyltoluene	9490	18116	83401	440962	872799	1814314		0.460	0.92	4.60	23.0	46.0	92
area sum:	**64907**	**118437**	**546209**	**2851838**	**5545621**	**11272918**	**sum:**	**2.400**	**4.800**	**24.00**	**120.10**	**240.00**	**480.00**

Massachusetts APH ICAL: M8011412A.M ICAL Date: 1/14/2012 Instrument ID: MS08

Hydrocarbon Ranges

areas

Internal Standards (TIC)	0.5	1	5	25	50	100
Bromochloromethane (IS1)	1312793	1307309	1293586	1289283	1284194	1283817
1,4-Difluorobenzene (IS2)	2547079	2541159	2512498	2475255	2422119	2352159
Chlorobenzene-d5 (IS3)	2929189	2913374	2880258	2895080	2878314	2908396
Internal Standards (EIC)						
Bromochloromethane (IS1)	249696	247899	245985	245585	244327	243561
1,4-Difluorobenzene (IS2)	1153657	1149947	1133233	1136223	1127203	1138730
Chlorobenzene-d5 (IS3)	1007702	1004638	991212	992925	982812	986950
Surrogates (TIC)	0.5	1	5	25	50	100
1,2-Dichloroethane-d4	1162497	1154617	1105630	1126201	1103958	1095945
Toluene-d8	3508018	3490493	3455382	3466688	3437986	3457323
p-Bromofluorobenzene	2298220	2284797	2197239	2227396	2192159	2197999

RRFs

C5-C8 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	2.8268	2.6009	2.4215	2.4870	2.3919	2.3252	2.509	7.24
C9-C12 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	4.0291	3.8120	3.6383	3.7780	3.6744	3.6163	3.758	4.09
C9-C10 Aromatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	0.6709	0.6140	0.5740	0.5979	0.5878	0.5949	0.607	5.63

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **03271202.D**
Data File Path: **J:\MS08\Data\2012_03\27**
Operator: **EM**
Date Acquired: **3/27/12 3:36**
Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15/MAPH CCV STD**
Misc Info: **S25-03151201/S25-03161202**
Instrument Name: **MS08**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	15.89	1117304
16)	Chlorobenzene-d5 (IS3)	21.69	978107

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	8.20	2419558	2.482	149.7	**-1.08**	**-30**	**30**	Pass
4)	n-Hexane	13.09	2528433						
9)	Cyclohexane	15.81	2791802						
10)	2,3-Dimethylpentane	16.17	2948565	**Spike**	**ICAL**				
11)	n-Heptane	17.35	2834960	**Amt (ng)**	**RRF**				
14)	n-Octane	20.69	3258272	151.30	2.509				
			16781590						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	22.31	3441244	3.743	146.3	**-0.39**	**-30**	**30**	Pass
19)	n-Nonane	23.30	3354311						
25)	n-Decane	25.27	3574971						
28)	Butylcyclohexane	25.99	3888285	**Spike**	**ICAL**				
29)	n-Undecane	26.77	3691884	**Amt (ng)**	**RRF**				
30)	n-Dodecane	28.00	3563475	146.90	3.758				
			21514170						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	23.78	435871	0.579	114.5	**-4.64**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	24.52	481596						
24)	1,3,5-Trimethylbenzene	24.66	665971						
26)	p-Isopropyltoluene	25.68	416913	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	25.68	719386	**Amt (ng)**	**RRF**				
			2719737	120.1	0.607				

EM 3/27/12

Response Factor Report MS08

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Dec 12 09:45:45 2011
Response Via : Initial Calibration

Calibration Files
0.1 =12091118.D 0.2 =12091119.D 0.5 =12091120.D 1.0 =12091121.D 5.0 =12091122.D 25 =12091123.D
50 =12091124.D 100 =12091125.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	----------	ISTD	----------	----------	----------	----------	----------		
2)	T	Propene	2.487	1.965	1.952	1.692	2.194	2.303	2.185	2.036	2.102	11.62
3)	T	Dichlorodifluo...	3.545	2.805	2.940	2.748	2.432	2.361	2.278	2.199	2.664	16.73
4)	T	Chloromethane	3.290	2.811	2.875	2.512	2.176	2.286	1.977	1.664	2.449	21.62
5)	T	1,2-Dichloro-1...	1.901	1.661	1.575	1.458	1.359	1.333	1.200	1.190	1.460	16.68
6)	T	Vinyl Chloride	2.906	2.590	2.631	2.374	2.145	2.129	1.950	1.939	2.333	15.07
7)	T	1,3-Butadiene	2.145	1.788	1.790	1.718	1.581	1.689	1.621	1.616	1.743	10.33
8)	T	Bromomethane	1.687	1.328	1.349	1.212	1.094	1.142	1.111	1.092	1.252	16.21
9)	T	Chloroethane	1.671	1.259	1.333	1.193	1.101	1.091	1.046	1.044	1.217	17.29
10)	T	Ethanol	2.040	1.345	1.186	1.085	1.022	1.096	1.076	1.064	1.239	27.34
11)	T	Acetonitrile	4.365	2.973	2.723	2.546	2.480	2.562	2.482	2.468	2.825	22.85
12)	T	Acrolein	1.328	0.931	0.907	0.861	0.772	0.814	0.789	0.779	0.897	20.48
13)	T	Acetone	1.645	1.316	1.249	1.129	0.994	1.015	0.981	0.964	1.161	20.26
14)	T	Trichlorofluor...	2.776	2.385	2.496	2.272	2.097	2.135	2.042	2.011	2.277	11.59
15)	T	2-Propanol (Is...		4.463	4.536	4.168	2.920	2.763	2.577	2.672	3.443	26.09
16)	T	Acrylonitrile	2.701	1.907	1.878	1.783	1.745	1.813	1.765	1.738	1.916	16.85
17)	T	1,1-Dichloroet...	1.458	1.418	1.452	1.263	1.206	1.223	1.172	1.152	1.293	9.95
18)	T	2-Methyl-2-Pro...	4.464	3.710	3.939	3.616	3.558	3.584			3.812	9.14
19)	T	Methylene Chlo...			1.958	1.578	1.294	1.273	1.220	1.201	1.421	20.88
20)	T	3-Chloro-1-pro...	2.347	2.260	2.345	2.220	2.150	2.296	2.230	2.191	2.255	3.15
21)	T	Trichlorotrifl...	1.348	1.244	1.299	1.193	1.089	1.098	1.062	1.035	1.171	10.01
22)	T	Carbon Disulfide		6.210	5.678	5.057	4.654	4.699	4.488	4.424	5.030	13.40
23)	T	trans-1,2-Dich...	2.436	2.237	2.206	2.142	1.951	1.953	1.883	1.835	2.080	10.00
24)	T	1,1-Dichloroet...	2.896	2.757	2.747	2.500	2.307	2.379	2.288	2.236	2.514	10.07
25)	T	Methyl tert-Bu...	5.128	4.611	4.650	4.307	4.119	4.185	4.042	3.984	4.378	8.93
26)	T	Vinyl Acetate	0.430	0.368	0.423	0.399	0.393	0.410	0.402	0.398	0.403	4.70
27)	T	2-Butanone (MEK)	1.265	1.003	1.038	0.972	0.927	0.964	0.928	0.794	0.986	13.56
28)	T	cis-1,2-Dichlo...	2.442	2.056	2.101	1.938	1.826	1.836	1.764	1.720	1.960	12.05
29)	T	Diisopropyl Ether	1.446	1.223	1.323	1.262	1.171	1.188	1.153	1.148	1.239	8.26
30)	T	Ethyl Acetate	0.611	0.554	0.573	0.545	0.517	0.535	0.520	0.516	0.546	6.02
31)	T	n-Hexane	3.541	3.006	3.181	2.805	2.582	2.633	2.545	2.543	2.855	12.70

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.679	2.408	2.409	2.204	1.983	2.054	1.974	1.937	2.206	12.18
33)	S	1,2-Dichloroet...	1.586	1.577	1.582	1.590	1.535	1.533	1.520	1.504	1.553	2.19
34)	T	Tetrahydrofura...	1.274	0.932	1.100	0.938	0.910	0.879	0.830	0.821	0.961	15.96
35)	T	Ethyl tert-But...	1.999	1.832	2.033	1.818	1.732	1.757	1.708	1.687	1.821	7.18
36)	T	1,2-Dichloroet...	2.099	1.992	1.976	1.806	1.683	1.700	1.599	1.531	1.798	11.39
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.531	0.465	0.486	0.453	0.419	0.434	0.413	0.403	0.451	9.46
39)	T	Isopropyl Acetate	0.227	0.205	0.220	0.206	0.194	0.201	0.192	0.188	0.204	6.71
40)	T	1-Butanol		0.348	0.319	0.300	0.320	0.335	0.324	0.318	0.323	4.66
41)	T	Benzene	1.633	1.385	1.359	1.227	1.136	1.158	1.101	1.070	1.258	15.11
42)	T	Carbon Tetrach...	0.394	0.356	0.369	0.340	0.334	0.352	0.337	0.333	0.352	6.03
43)	T	Cyclohexane	0.666	0.576	0.588	0.539	0.492	0.500	0.479	0.469	0.539	12.59
44)	T	tert-Amyl Meth...	1.092	0.926	0.998	0.937	0.900	0.918	0.881	0.858	0.939	7.95
45)	T	1,2-Dichloropr...	0.397	0.361	0.368	0.324	0.312	0.316	0.300	0.293	0.334	11.12
46)	T	Bromodichlorom...	0.458	0.387	0.392	0.378	0.362	0.378	0.362	0.353	0.384	8.57
47)	T	Trichloroethene	0.466	0.375	0.379	0.344	0.323	0.328	0.316	0.309	0.355	14.62
48)	T	1,4-Dioxane	0.305	0.282	0.288	0.248	0.245	0.246	0.237	0.230	0.260	10.55
49)	T	2,2,4-Trimethy...	1.964	1.629	1.686	1.546	1.447	1.461	1.387	1.337	1.557	12.98
50)	T	Methyl Methacr...	0.156	0.139	0.150	0.135	0.136	0.142	0.136	0.135	0.141	5.53
51)	T	n-Heptane	0.427	0.373	0.385	0.364	0.341	0.344	0.332	0.324	0.361	9.35
52)	T	cis-1,3-Dichlo...	0.571	0.502	0.521	0.491	0.482	0.500	0.481	0.471	0.502	6.33
53)	T	4-Methyl-2-pen...	0.359	0.295	0.308	0.303	0.297	0.303	0.289	0.284	0.305	7.68
54)	T	trans-1,3-Dich...	0.476	0.413	0.443	0.421	0.429	0.453	0.437	0.427	0.437	4.59
55)	T	1,1,2-Trichlor...	0.340	0.301	0.310	0.284	0.276	0.285	0.271	0.265	0.292	8.44
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	2.305	2.306	2.305	2.309	2.306	2.300	2.310	2.304	2.306	0.14
58)	T	Toluene	3.623	2.920	3.025	2.738	2.571	2.574	2.473	2.421	2.793	14.19
59)	T	2-Hexanone	2.049	1.429	1.515	1.403	1.395	1.422	1.367	1.337	1.490	15.57
60)	T	Dibromochlorom...	0.696	0.618	0.636	0.636	0.612	0.648	0.629	0.625	0.638	4.14
61)	T	1,2-Dibromoethane	0.831	0.730	0.718	0.658	0.641	0.662	0.638	0.628	0.688	9.97
62)	T	n-Butyl Acetate	2.338	1.850	1.857	1.721	1.704	1.765	1.737	1.737	1.839	11.40
63)	T	n-Octane	0.785	0.652	0.714	0.643	0.602	0.611	0.580	0.572	0.645	11.28
64)	T	Tetrachloroethene	1.090	0.904	0.904	0.826	0.767	0.779	0.756	0.755	0.848	13.63
65)	T	Chlorobenzene	2.375	1.868	1.886	1.744	1.610	1.637	1.574	1.548	1.780	15.30
66)	T	Ethylbenzene	3.846	3.171	3.188	2.956	2.803	2.848	2.743	2.680	3.030	12.51
67)	T	m- & p-Xylenes	3.081	2.499	2.611	2.392	2.216	2.273	2.170	2.112	2.419	13.08
68)	T	Bromoform	0.622	0.494	0.556	0.541	0.551	0.598	0.589	0.594	0.568	7.19
69)	T	Styrene	2.478	1.895	1.937	1.800	1.735	1.803	1.726	1.675	1.881	13.64
70)	T	o-Xylene	3.279	2.708	2.726	2.479	2.331	2.373	2.283	2.224	2.550	13.65

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	2.005	1.753	1.847	1.675	1.581	1.597	1.518	1.470	1.681	10.69
72)	T	1,1,2,2-Tetrac...	1.348	1.164	1.262	1.150	1.083	1.121	1.085	1.066	1.160	8.48
73)	S	Bromofluoroben...	0.774	0.771	0.779	0.781	0.775	0.778	0.782	0.780	0.777	0.50
74)	T	Cumene	4.522	3.495	3.524	3.169	2.962	3.002	2.884	2.831	3.299	16.98
75)	T	alpha-Pinene	1.782	1.636	1.734	1.601	1.537	1.578	1.518	1.498	1.611	6.35
76)	T	n-Propylbenzene	5.441	4.229	4.306	3.924	3.710	3.754	3.553	3.394	4.039	16.01
77)	T	3-Ethyltoluene	4.091	3.373	3.461	3.038	2.964	2.981	2.893	2.845	3.206	13.14
78)	T	4-Ethyltoluene	4.003	3.202	3.301	3.151	2.837	2.983	2.810	2.776	3.133	12.84
79)	T	1,3,5-Trimethy...	3.324	2.662	2.723	2.537	2.378	2.426	2.344	2.403	2.600	12.43
80)	T	alpha-Methylst...	1.742	1.386	1.449	1.371	1.390	1.402	1.354	1.399	1.436	8.80
81)	T	2-Ethyltoluene	4.143	3.362	3.430	3.169	2.975	3.048	2.919	2.985	3.254	12.43
82)	T	1,2,4-Trimethy...	3.356	2.663	2.791	2.551	2.433	2.513	2.454	2.548	2.664	11.37
83)	T	n-Decane	1.969	1.702	1.844	1.705	1.582	1.626	1.554	1.609	1.699	8.39
84)	T	Benzyl Chloride	2.373	1.648	1.772	1.688	1.799	2.058	2.054	2.190	1.948	13.35
85)	T	1,3-Dichlorobe...	2.498	1.658	1.649	1.455	1.377	1.409	1.374	1.436	1.607	23.49
86)	T	1,4-Dichlorobe...	2.655	1.785	1.618	1.492	1.380	1.428	1.388	1.449	1.649	25.99
87)	T	sec-Butylbenzene	4.527	3.773	3.816	3.471	3.264	3.328	3.214	3.176	3.571	12.80
88)	T	4-Isopropyltol...	4.426	3.674	3.683	3.416	3.254	3.356	3.253	3.366	3.554	10.98
89)	T	1,2,3-Trimethy...	3.266	2.650	2.852	2.588	2.471	2.573	2.506	2.619	2.691	9.63
90)	T	1,2-Dichlorobe...	2.173	1.589	1.545	1.435	1.332	1.387	1.370	1.415	1.531	17.89
91)	T	d-Limonene	1.124	0.998	1.106	1.069	1.064	1.072	1.040	1.065	1.067	3.58
92)	T	1,2-Dibromo-3-...	0.563	0.488	0.501	0.486	0.494	0.525	0.532	0.542	0.517	5.50
93)	T	n-Undecane	1.922	1.637	1.755	1.671	1.608	1.630	1.608	1.592	1.678	6.63
94)	T	1,2,4-Trichlor...		1.335	1.165	1.062	1.017	1.071	1.086	1.118	1.122	9.32
95)	T	Naphthalene		4.848	3.923	3.638	3.497	3.721	3.755	3.783	3.881	11.50
96)	T	n-Dodecane	1.866	1.599	1.669	1.586	1.545	1.575	1.553	1.509	1.613	6.99
97)	T	Hexachlorobuta...	0.841	0.749	0.730	0.673	0.635	0.664	0.663	0.676	0.704	9.50
98)	T	Cyclohexanone	1.172	0.979	1.021	0.969	0.952	0.962	0.931	0.903	0.986	8.37
99)	T	tert-Butylbenzene	3.486	2.799	2.880	2.658	2.449	2.533	2.453	2.528	2.723	12.71
100)	T	n-Butylbenzene	3.596	2.904	2.958	2.670	2.572	2.625	2.613	2.593	2.817	12.33

(#) = Out of Range

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\27\
Data File : 03271201.D
Acq On : 27 Mar 2012 2:54
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 27 08:42:57 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	84	-0.01
2	T	Propene	2.102	2.112	-0.5	77	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.197	17.5	78	0.01
4	T	Chloromethane	2.449	2.077	15.2	76	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.162	20.4	73	0.00
6	T	Vinyl Chloride	2.333	1.938	16.9	77	0.00
7	T	1,3-Butadiene	1.743	1.605	7.9	80	0.00
8	T	Bromomethane	1.252	1.046	16.5	77	0.00
9	T	Chloroethane	1.217	1.028	15.5	79	0.00
10	T	Ethanol	1.239	1.128	9.0	86	-0.07
11	T	Acetonitrile	2.825	2.506	11.3	82	-0.05
12	T	Acrolein	0.897	0.786	12.4	81	-0.02
13	T	Acetone	1.161	0.998	14.0	83	-0.04
14	T	Trichlorofluoromethane	2.277	2.021	11.2	80	0.00
15	T	2-Propanol (Isopropanol)	3.443	2.787	19.1	85	-0.05
16	T	Acrylonitrile	1.916	1.761	8.1	82	-0.03
17	T	1,1-Dichloroethene	1.293	1.147	11.3	79	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.111	18.4	73	-0.03
19	T	Methylene Chloride	1.421	1.204	15.3	79	0.00
20	T	3-Chloro-1-propene (Allyl C	2.255	2.255	0.0	83	-0.01
21	T	Trichlorotrifluoroethane	1.171	1.027	12.3	79	0.00
22	T	Carbon Disulfide	5.030	4.445	11.6	80	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.902	8.6	82	-0.01
24	T	1,1-Dichloroethane	2.514	2.311	8.1	82	-0.01
25	T	Methyl tert-Butyl Ether	4.378	4.075	6.9	82	0.00
26	T	Vinyl Acetate	0.403	0.403	0.0	83	-0.03
27	T	2-Butanone (MEK)	0.986	0.939	4.8	82	-0.02
28	T	cis-1,2-Dichloroethene	1.960	1.778	9.3	81	-0.01
29	T	Diisopropyl Ether	1.239	1.147	7.4	81	0.00
30	T	Ethyl Acetate	0.546	0.523	4.2	82	-0.02
31	T	n-Hexane	2.855	2.532	11.3	81	0.00
32	T	Chloroform	2.206	1.979	10.3	81	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.610	-3.7	88	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.861	10.4	82	0.00
35	T	Ethyl tert-Butyl Ether	1.821	1.702	6.5	81	0.00
36	T	1,2-Dichloroethane	1.798	1.659	7.7	82	-0.01
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
38	T	1,1,1-Trichloroethane	0.451	0.401	11.1	81	0.00

EM 3/27/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\27\
Data File : 03271201.D
Acq On : 27 Mar 2012 2:54
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 27 08:42:57 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.188	7.8	82	-0.02
40	T	1-Butanol	0.323	0.344	-6.5	91	-0.05
41	T	Benzene	1.258	1.074	14.6	82	-0.01
42	T	Carbon Tetrachloride	0.352	0.321	8.8	80	0.00
43	T	Cyclohexane	0.539	0.468	13.2	82	-0.01
44	T	tert-Amyl Methyl Ether	0.939	0.854	9.1	82	-0.01
45	T	1,2-Dichloropropane	0.334	0.297	11.1	83	-0.01
46	T	Bromodichloromethane	0.384	0.351	8.6	82	0.00
47	T	Trichloroethene	0.355	0.296	16.6	79	-0.01
48	T	1,4-Dioxane	0.260	0.235	9.6	84	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.394	10.5	84	0.00
50	T	Methyl Methacrylate	0.141	0.133	5.7	83	-0.02
51	T	n-Heptane	0.361	0.329	8.9	84	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.468	6.8	82	0.00
53	T	4-Methyl-2-pentanone	0.305	0.293	3.9	85	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.423	3.2	82	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.262	10.3	81	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	89	0.00
57	S	Toluene-d8 (SS2)	2.306	2.282	1.0	89	0.00
58	T	Toluene	2.793	2.378	14.9	83	0.00
59	T	2-Hexanone	1.490	1.395	6.4	88	-0.02
60	T	Dibromochloromethane	0.638	0.582	8.8	80	0.00
61	T	1,2-Dibromoethane	0.688	0.597	13.2	81	-0.01
62	T	n-Butyl Acetate	1.839	1.730	5.9	88	-0.01
63	T	n-Octane	0.645	0.606	6.0	89	0.00
64	T	Tetrachloroethene	0.848	0.684	19.3	79	0.00
65	T	Chlorobenzene	1.780	1.486	16.5	81	0.00
66	T	Ethylbenzene	3.030	2.612	13.8	82	0.00
67	T	m- & p-Xylenes	2.419	2.142	11.5	84	-0.02
68	T	Bromoform	0.568	0.530	6.7	79	-0.01
69	T	Styrene	1.881	1.704	9.4	85	-0.01
70	T	o-Xylene	2.550	2.230	12.5	84	-0.01
71	T	n-Nonane	1.681	1.521	9.5	85	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.023	11.8	82	-0.01
73	S	Bromofluorobenzene (SS3)	0.777	0.781	-0.5	90	0.00
74	T	Cumene	3.299	2.898	12.2	86	0.00
75	T	alpha-Pinene	1.611	1.456	9.6	83	0.00
76	T	n-Propylbenzene	4.039	3.497	13.4	83	0.00

EM 3/27/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\27\
Data File : 03271201.D
Acq On : 27 Mar 2012 2:54
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 27 08:42:57 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.733	14.8	82	-0.01
78	T	4-Ethyltoluene	3.133	2.715	13.3	81	-0.01
79	T	1,3,5-Trimethylbenzene	2.600	2.239	13.9	83	-0.01
80	T	alpha-Methylstyrene	1.436	1.311	8.7	84	-0.01
81	T	2-Ethyltoluene	3.254	2.785	14.4	82	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.315	13.1	82	-0.01
83	T	n-Decane	1.699	1.534	9.7	84	-0.01
84	T	Benzyl Chloride	1.948	2.035	-4.5	88	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.258	21.7	80	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.263	23.4	79	-0.01
87	T	sec-Butylbenzene	3.571	3.086	13.6	83	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.091	13.0	82	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.365	12.1	82	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.235	19.3	80	-0.01
91	T	d-Limonene	1.067	1.028	3.7	86	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.472	8.7	80	-0.01
93	T	n-Undecane	1.678	1.542	8.1	85	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.935	16.7	78	-0.01
95	T	Naphthalene	3.881	3.346	13.8	80	-0.01
96	T	n-Dodecane	1.613	1.501	6.9	85	0.00
97	T	Hexachlorobutadiene	0.704	0.575	18.3	77	0.00
98	T	Cyclohexanone	0.986	0.980	0.6	91	-0.02
99	T	tert-Butylbenzene	2.723	2.344	13.9	83	-0.01
100	T	n-Butylbenzene	2.817	2.423	14.0	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

EM 3/27/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\28\
Data File : 03281201.D
Acq On : 28 Mar 2012 3:15
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 28 08:49:11 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	82	-0.01
2	T	Propene	2.102	2.115	-0.6	75	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.225	16.5	77	0.00
4	T	Chloromethane	2.449	2.065	15.7	74	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.189	18.6	73	0.00
6	T	Vinyl Chloride	2.333	1.960	16.0	76	0.00
7	T	1,3-Butadiene	1.743	1.627	6.7	79	0.00
8	T	Bromomethane	1.252	1.038	17.1	75	0.00
9	T	Chloroethane	1.217	1.044	14.2	79	0.00
10	T	Ethanol	1.239	1.105	10.8	83	-0.07
11	T	Acetonitrile	2.825	2.467	12.7	79	-0.05
12	T	Acrolein	0.897	0.776	13.5	78	-0.02
13	T	Acetone	1.161	0.986	15.1	80	-0.05
14	T	Trichlorofluoromethane	2.277	2.004	12.0	77	0.00
15	T	2-Propanol (Isopropanol)	3.443	2.762	19.8	82	-0.05
16	T	Acrylonitrile	1.916	1.730	9.7	78	-0.03
17	T	1,1-Dichloroethene	1.293	1.150	11.1	77	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	2.960	22.4	68	-0.03
19	T	Methylene Chloride	1.421	1.191	16.2	77	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.222	1.5	80	-0.01
21	T	Trichlorotrifluoroethane	1.171	1.026	12.4	77	0.00
22	T	Carbon Disulfide	5.030	4.409	12.3	77	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.867	10.2	79	-0.01
24	T	1,1-Dichloroethane	2.514	2.273	9.6	79	-0.02
25	T	Methyl tert-Butyl Ether	4.378	4.045	7.6	79	0.00
26	T	Vinyl Acetate	0.403	0.398	1.2	80	-0.03
27	T	2-Butanone (MEK)	0.986	0.924	6.3	79	-0.02
28	T	cis-1,2-Dichloroethene	1.960	1.740	11.2	78	-0.01
29	T	Diisopropyl Ether	1.239	1.135	8.4	78	0.00
30	T	Ethyl Acetate	0.546	0.515	5.7	79	-0.03
31	T	n-Hexane	2.855	2.517	11.8	79	0.00
32	T	Chloroform	2.206	1.934	12.3	77	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.583	-1.9	85	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.842	12.4	79	0.00
35	T	Ethyl tert-Butyl Ether	1.821	1.686	7.4	79	-0.01
36	T	1,2-Dichloroethane	1.798	1.603	10.8	77	-0.01
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	86	0.00
38	T	1,1,1-Trichloroethane	0.451	0.395	12.4	78	0.00

EM 3/28/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\28\
Data File : 03281201.D
Acq On : 28 Mar 2012 3:15
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 28 08:49:11 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.186	8.8	79	-0.02
40	T	1-Butanol	0.323	0.338	-4.6	86	-0.05
41	T	Benzene	1.258	1.060	15.7	78	-0.01
42	T	Carbon Tetrachloride	0.352	0.315	10.5	77	-0.01
43	T	Cyclohexane	0.539	0.463	14.1	79	-0.01
44	T	tert-Amyl Methyl Ether	0.939	0.839	10.6	78	-0.01
45	T	1,2-Dichloropropane	0.334	0.287	14.1	78	-0.01
46	T	Bromodichloromethane	0.384	0.346	9.9	78	0.00
47	T	Trichloroethene	0.355	0.293	17.5	77	-0.01
48	T	1,4-Dioxane	0.260	0.230	11.5	80	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.363	12.5	80	-0.01
50	T	Methyl Methacrylate	0.141	0.131	7.1	79	-0.02
51	T	n-Heptane	0.361	0.320	11.4	80	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.459	8.6	79	0.00
53	T	4-Methyl-2-pentanone	0.305	0.288	5.6	82	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.412	5.7	78	0.00
55	T	1,1,2-Trichloroethane	0.292	0.255	12.7	77	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	86	0.00
57	S	Toluene-d8 (SS2)	2.306	2.271	1.5	85	0.00
58	T	Toluene	2.793	2.328	16.6	78	0.00
59	T	2-Hexanone	1.490	1.336	10.3	81	-0.02
60	T	Dibromochloromethane	0.638	0.576	9.7	77	0.00
61	T	1,2-Dibromoethane	0.688	0.587	14.7	77	-0.01
62	T	n-Butyl Acetate	1.839	1.646	10.5	80	-0.01
63	T	n-Octane	0.645	0.591	8.4	83	0.00
64	T	Tetrachloroethene	0.848	0.689	18.8	76	0.00
65	T	Chlorobenzene	1.780	1.472	17.3	78	0.00
66	T	Ethylbenzene	3.030	2.550	15.8	77	0.00
67	T	m- & p-Xylenes	2.419	2.094	13.4	79	-0.02
68	T	Bromoform	0.568	0.528	7.0	76	-0.01
69	T	Styrene	1.881	1.682	10.6	80	-0.01
70	T	o-Xylene	2.550	2.179	14.5	79	-0.01
71	T	n-Nonane	1.681	1.467	12.7	79	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.004	13.4	77	-0.01
73	S	Bromofluorobenzene (SS3)	0.777	0.795	-2.3	88	0.00
74	T	Cumene	3.299	2.855	13.5	82	0.00
75	T	alpha-Pinene	1.611	1.440	10.6	79	0.00
76	T	n-Propylbenzene	4.039	3.424	15.2	79	0.00

EM 3/28/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_03\28\
Data File : 03281201.D
Acq On : 28 Mar 2012 3:15
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-03151201/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 28 08:49:11 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.700	15.8	78	-0.01
78	T	4-Ethyltoluene	3.133	2.667	14.9	77	-0.01
79	T	1,3,5-Trimethylbenzene	2.600	2.215	14.8	79	-0.01
80	T	alpha-Methylstyrene	1.436	1.297	9.7	80	-0.01
81	T	2-Ethyltoluene	3.254	2.747	15.6	78	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.270	14.8	78	-0.01
83	T	n-Decane	1.699	1.497	11.9	79	-0.01
84	T	Benzyl Chloride	1.948	1.984	-1.8	83	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.248	22.3	76	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.258	23.7	76	-0.02
87	T	sec-Butylbenzene	3.571	3.048	14.6	79	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.043	14.4	78	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.322	13.7	78	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.222	20.2	76	-0.01
91	T	d-Limonene	1.067	1.006	5.7	81	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.462	10.6	76	-0.01
93	T	n-Undecane	1.678	1.491	11.1	79	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.937	16.5	75	-0.01
95	T	Naphthalene	3.881	3.335	14.1	77	-0.01
96	T	n-Dodecane	1.613	1.472	8.7	81	0.00
97	T	Hexachlorobutadiene	0.704	0.582	17.3	76	0.00
98	T	Cyclohexanone	0.986	0.944	4.3	85	-0.02
99	T	tert-Butylbenzene	2.723	2.327	14.5	79	-0.01
100	T	n-Butylbenzene	2.817	2.362	16.2	78	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

EM 3/28/12

Response Factor Report MS07

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
1)	I	Bromochloromethan	ISTD										
2)	T	Dichlorodifluorom	3.784	3.527	3.467	3.822	3.279	2.986	2.875	3.155	2.920	3.313	10.83
3)	T	Chloromethane		1.470	0.956	1.190	0.904	0.778	0.569	0.897	0.827	0.949	28.81
4)	T	Vinyl Chloride	2.802	2.749	2.588	3.044	2.597	2.406	2.314	2.588	2.446	2.615	8.57
5)	T	Bromomethane	1.894	1.496	1.211	1.613	1.335	1.208	1.105	1.433	1.367	1.407	17.11
6)	T	Chloroethane	1.511	1.416	1.357	1.517	1.295	1.237	1.195	1.312	1.224	1.340	8.92
7)	T	Acetone				1.548	1.214	1.122	1.080	1.193	1.090	1.208	14.52
8)	T	Trichlorofluorome	3.051	2.887	2.831	3.145	2.692	2.565	2.447	2.691	2.536	2.761	8.59
9)	T	1,1-Dichloroethen	1.591	1.440	1.366	1.547	1.322	1.229	1.214	1.385	1.295	1.376	9.52
10)	T	Methylene Chlorid		2.134	1.795	1.866	1.536	1.426	1.404	1.494	1.411	1.633	16.43
11)	T	Trichlorotrifluor	1.408	1.325	1.295	1.376	1.169	1.081	1.062	1.170	1.097	1.220	10.87
12)	T	trans-1,2-Dichlor	1.972	1.710	1.589	1.762	1.505	1.406	1.393	1.512	1.439	1.588	12.18
13)	T	1,1-Dichloroethan	3.265	3.020	3.016	3.383	2.925	2.756	2.681	2.937	2.841	2.980	7.60
14)	T	Methyl tert-Butyl	5.168	4.740	4.762	5.045	4.335	4.137	4.166	4.690	4.471	4.613	7.90
15)	T	cis-1,2-Dichloroe	1.885	1.626	1.630	1.776	1.524	1.434	1.388	1.575	1.482	1.591	10.09
16)	T	Chloroform			3.041	3.257	2.586	2.390	2.280	2.524	2.374	2.636	14.03
17)	S	1,2-Dichloroethan	2.000	2.002	2.032	2.018	1.989	1.973	1.960	1.938	1.932	1.983	1.75
18)	T	1,2-Dichloroethan	2.582	2.460	2.375	2.604	2.222	2.090	1.988	2.222	2.094	2.293	9.73
19)	T	1,1,1-Trichloroet	2.587	2.431	2.340	2.573	2.191	2.059	2.007	2.278	2.150	2.291	9.18
20)	T	Benzene			7.536	7.534	6.055	5.665	5.395	5.903	5.468	6.222	14.88
21)	T	Carbon Tetrachlor	2.280	1.842	1.769	1.950	1.676	1.579	1.549	1.771	1.692	1.790	12.41
22)	I	1,4-Difluorobenze	ISTD										
23)	T	1,2-Dichloropropa	0.417	0.397	0.373	0.409	0.354	0.331	0.319	0.358	0.336	0.366	9.68
24)	T	Bromodichlorometh	0.491	0.464	0.436	0.489	0.420	0.398	0.394	0.447	0.416	0.439	8.26
25)	T	Trichloroethene	0.418	0.379	0.349	0.390	0.324	0.305	0.287	0.326	0.307	0.343	12.96
26)	T	1,4-Dioxane	0.324	0.290	0.270	0.278	0.242	0.231	0.227	0.258	0.243	0.263	11.99
27)	T	cis-1,3-Dichlorop	0.567	0.523	0.508	0.540	0.499	0.484	0.488	0.559	0.522	0.521	5.67
28)	T	trans-1,3-Dichlor	0.457	0.434	0.431	0.444	0.419	0.409	0.417	0.505	0.482	0.444	7.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
29)	T	1,1,2-Trichloroet	0.315	0.296	0.286	0.305	0.263	0.248	0.242	0.274	0.257	0.276	9.32
30)	S	Toluene-d8 (SS2)	1.053	1.071	1.054	1.047	1.051	1.052	1.071	1.060	1.049	1.056	0.84
31)	T	Toluene	1.782	1.541	1.420	1.485	1.269	1.198	1.177	1.307	1.186	1.374	14.76
32)	T	1,2-Dibromoethane	0.379	0.362	0.345	0.362	0.323	0.307	0.304	0.351	0.331	0.340	7.65
33)	T	Tetrachloroethene	0.423	0.394	0.371	0.400	0.341	0.320	0.311	0.347	0.326	0.359	11.03
34)	I	Chlorobenzene-d5	ISTD										
35)	T	Chlorobenzene	4.581	4.172	4.017	4.308	3.688	3.469	3.311	3.705	3.345	3.844	11.68
36)	T	Ethylbenzene	7.604	7.082	6.707	7.235	6.297	6.070	5.915	6.682	5.878	6.608	9.30
37)	T	m,p-Xylene	5.861	5.347	5.132	5.536	4.930	4.777	4.719	5.268	4.558	5.125	8.24
38)	T	o-Xylene	6.505	5.826	5.526	5.889	5.188	4.995	4.950	5.594	4.932	5.490	9.67
39)	T	1,1,2,2-Tetrachlo	2.655	2.674	2.710	2.646	2.437	2.371	2.298	2.761	2.498	2.561	6.40
40)	S	Bromofluorobenzen	1.712	1.701	1.695	1.697	1.683	1.680	1.670	1.642	1.593	1.675	2.20
41)	T	1,3-Dichlorobenze	3.304	3.261	3.222	3.204	2.835	2.719	2.608	3.138	2.846	3.015	8.71
42)	T	1,4-Dichlorobenze	3.470	3.303	3.208	3.208	2.803	2.671	2.579	3.174	2.891	3.034	10.13
43)	T	1,2-Dichlorobenze	3.271	3.123	3.112	3.026	2.662	2.536	2.418	3.053	2.772	2.886	10.31
44)	T	1,2,4-Trichlorobe	2.184	2.118	2.169	1.753	1.641	1.608	1.575	2.139	1.978	1.907	13.66
45)	T	Naphthalene	6.857	6.355	6.704	5.143	5.107	5.172	5.297	8.126	7.328	6.232	17.82
46)	T	Hexachlorobutadie	1.486	1.423	1.403	1.217	1.055	1.013	0.975	1.227	1.145	1.216	15.40

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\31\
Data File : 03311203.D
Acq On : 31 Mar 2012 4:54 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 31 06:24:54 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	88	0.00
2	T	Dichlorodifluoromethane (CF	3.313	2.947	11.0	79	0.00
3	T	Chloromethane	0.949	0.874	7.9	85	0.00
4	T	Vinyl Chloride	2.615	2.401	8.2	81	0.00
5	T	Bromomethane	1.407	1.368	2.8	90	0.00
6	T	Chloroethane	1.340	1.238	7.6	84	0.00
7	T	Acetone	1.208	1.227	-1.6	89	0.00
8	T	Trichlorofluoromethane	2.761	2.452	11.2	80	0.00
9	T	1,1-Dichloroethene	1.376	1.319	4.1	88	0.00
10	T	Methylene Chloride	1.633	1.465	10.3	84	0.00
11	T	Trichlorotrifluoroethane	1.220	1.189	2.5	90	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.446	8.9	85	0.00
13	T	1,1-Dichloroethane	2.980	2.772	7.0	83	0.00
14	T	Methyl tert-Butyl Ether	4.613	4.200	9.0	85	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.507	5.3	87	0.00
16	T	Chloroform	2.636	2.615	0.8	89	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.968	0.8	87	0.00
18	T	1,2-Dichloroethane	2.293	1.996	13.0	79	0.00
19	T	1,1,1-Trichloroethane	2.291	2.088	8.9	84	0.00
20	T	Benzene	6.222	6.142	1.3	89	0.00
21	T	Carbon Tetrachloride	1.790	1.570	12.3	82	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	97	0.00
23	T	1,2-Dichloropropane	0.366	0.311	15.0	85	0.00
24	T	Bromodichloromethane	0.439	0.367	16.4	85	0.00
25	T	Trichloroethene	0.343	0.289	15.7	87	0.00
26	T	1,4-Dioxane	0.263	0.228	13.3	91	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.456	12.5	89	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.393	11.5	91	0.00
29	T	1,1,2-Trichloroethane	0.276	0.238	13.8	88	0.00
30	S	Toluene-d8 (SS2)	1.056	1.189	-12.6	110	0.00
31	T	Toluene	1.374	1.195	13.0	91	0.00
32	T	1,2-Dibromoethane	0.340	0.302	11.2	90	0.00
33	T	Tetrachloroethene	0.359	0.320	10.9	91	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	94	0.00
35	T	Chlorobenzene	3.844	3.609	6.1	92	0.00
36	T	Ethylbenzene	6.608	6.023	8.9	90	0.00
37	T	m,p-Xylene	5.125	4.811	6.1	92	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_03\31\
Data File : 03311203.D
Acq On : 31 Mar 2012 4:54 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 31 06:24:54 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	5.201	5.3	94	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.404	6.1	93	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.862	-11.2	104	0.00
41	T	1,3-Dichlorobenzene	3.015	3.021	-0.2	100	0.00
42	T	1,4-Dichlorobenzene	3.034	2.972	2.0	100	0.00
43	T	1,2-Dichlorobenzene	2.886	2.904	-0.6	103	0.00
44	T	1,2,4-Trichlorobenzene	1.907	2.056	-7.8	118	0.00
45	T	Naphthalene	6.232	7.293	-17.0	134	0.00
46	T	Hexachlorobutadiene	1.216	1.214	0.2	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

KKB 3/31/12

LABORATORY REPORT

April 12, 2012

Christopher Cote
Montana DEQ
1100 N. Last Chance Gulch
Helena, MT 59601

RE: Background Indoor Air Study

Dear Christopher:

Enclosed are the results of the samples submitted to our laboratory on March 29, 2012. For your reference, these analyses have been assigned our service request number P1201247.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-11-2; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA015272011-1; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Kate Aguilera
Project Manager

Client: Montana DEQ CAS Project No: P1201247
Project: Background Indoor Air Study

CASE NARRATIVE

The samples were received intact under chain of custody on March 29, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009.

Volatile Organic Compound Analysis

The samples were also analyzed in Scan and SIM mode for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

DETAIL SUMMARY REPORT

Client: Montana DEQ
Service Request: P1201247
Project ID: Background Indoor Air Study

Date Received: 3/29/2012
Time Received: 09:55

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC Cans	TO-15 - VOC SIM
14-1F-032712	P1201247-001	Air	3/28/2012	12:00	AC01282	-5.66	3.56	X	X	X
25-1F-032312	P1201247-002	Air	3/24/2012	09:50	AC00949	-4.74	3.69	X	X	X
27-1F-032312	P1201247-003	Air	3/24/2012	11:02	AC01400	-5.15	3.57	X	X	X
24-1F-032112	P1201247-004	Air	3/22/2012	18:30	AS00183	-2.08	3.68	X	X	X

Columbia Analytical Services

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

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Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1201247

Company Name & Address (Reporting Information)
Montana Department of Environmental Quality
PO Box 200901
1100 North Lastchance Gulch
Helena, MT 59620-0901

Project Name: Background Indoor Air Study

Project Number:

CAS Contact:

Project Manager: Chris Cote

P.O. # / Billing Information
Reference as: Background Indoor Air Study
Bill to Chris Cote of MDEQ

Phone: 406-841-5078 Fax: 406-841-5050

Email Address for Result Reporting: ccote2@mt.gov; Martichbj@cdm.com

Sampler (Print & Sign): Bob Roll

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code #- FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15	Analysis Method: TO-15 SIM	Analysis Method: MA-APH	Comments e.g. Actual Preservative or specific instructions
14-1F-032712	1-5.68	3/28/12	1200	AC01282	FCA00067	-27.7"	-10"		X	X	X	Analyze Project Specific List of Compounds to Project Specific Reporting Limits
25-1F-032312	2-4.74	3/24/12	950	AC00949	FCA00485	-27.5"	-9.2"		X	X	X	
27-1F-032312	3-5.17	3/24/12	11:02	AC01400	FCA00466	-28.5"	-10.5"		X	X	X	
24-1F-032112	4-2.10	3/22/12	18:30	A500183	FCA00085	-27"	-3.5"		X	X	X	

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) X
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) No
Type: CSV and EXCEL Format

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Bob Roll	3/28/12	1400		3/29/12	0945
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Project Requirements (MRLs, QAPP)

Cooler / Blank Temperature ____ °C

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Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201247

Project: Background Indoor Air Study

Sample(s) received on: 3/29/12 Date opened: 3/29/12 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201247-001.01	6.0 L Ambient Can					
P1201247-002.01	6.0 L Ambient Can					
P1201247-003.01	6.0 L Ambient Can					
P1201247-004.01	6.0 L Silonite Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **14-1F-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-001

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01282

Date Collected: 3/28/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.66 Final Pressure (psig): 3.56

Canister Dilution Factor: 2.02

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**84**	40	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**39**	20	
C_9 - C_{10} Aromatic Hydrocarbons	ND	10	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **25-1F-032312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-002

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00949

Date Collected: 3/24/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.85

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**170**	37	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**28**	19	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **27-1F-032312** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201247-003

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:
Container ID: AC01400

Initial Pressure (psig): -5.15 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.91

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**97**	76	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**850**	38	
C_9 - C_{10} Aromatic Hydrocarbons	ND	19	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **24-1F-032112** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201247-004

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/22/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00183

Initial Pressure (psig): -2.08 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.46

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**41**	29	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**26**	15	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**25.1**	**102**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**25.2**	**101**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**46.3**	**95**	70-130	

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **14-1F-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01282

Date Collected: 3/28/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.66 Final Pressure (psig): 3.56

Canister Dilution Factor: 2.02

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**1.7**	1.0	**1.0**	0.59	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	1.0	**0.42**	0.20	
74-87-3	Chloromethane	ND	1.0	ND	0.49	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.0	ND	0.14	
106-99-0	1,3-Butadiene	ND	1.0	ND	0.46	
74-83-9	Bromomethane	ND	1.0	ND	0.26	
75-00-3	Chloroethane	ND	1.0	ND	0.38	
64-17-5	Ethanol	**610**	10	**320**	5.4	
75-05-8	Acetonitrile	ND	1.0	ND	0.60	
107-02-8	Acrolein	ND	4.0	ND	1.8	
67-64-1	Acetone	**53**	10	**22**	4.3	
75-69-4	Trichlorofluoromethane	**1.1**	1.0	**0.20**	0.18	
67-63-0	2-Propanol (Isopropyl Alcohol)	**4.6**	2.0	**1.9**	0.82	
107-13-1	Acrylonitrile	ND	1.0	ND	0.47	
75-35-4	1,1-Dichloroethene	ND	1.0	ND	0.25	
75-09-2	Methylene Chloride	ND	1.0	ND	0.29	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.0	ND	0.32	
76-13-1	Trichlorotrifluoroethane	ND	1.0	ND	0.13	
75-15-0	Carbon Disulfide	ND	10	ND	3.2	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ND	0.25	
75-34-3	1,1-Dichloroethane	ND	1.0	ND	0.25	
1634-04-4	Methyl tert-Butyl Ether	ND	1.0	ND	0.28	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
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RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **14-1F-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01282

Date Collected: 3/28/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.66 Final Pressure (psig): 3.56

Canister Dilution Factor: 2.02

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	10	ND	2.9	
78-93-3	2-Butanone (MEK)	ND	10	ND	3.4	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ND	0.25	
141-78-6	Ethyl Acetate	**7.6**	2.0	**2.1**	0.56	
110-54-3	n-Hexane	**1.3**	1.0	**0.36**	0.29	
67-66-3	Chloroform	ND	1.0	ND	0.21	
109-99-9	Tetrahydrofuran (THF)	ND	1.0	ND	0.34	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ND	0.19	
56-23-5	Carbon Tetrachloride	ND	1.0	ND	0.16	
110-82-7	Cyclohexane	ND	2.0	ND	0.59	
78-87-5	1,2-Dichloropropane	ND	1.0	ND	0.22	
75-27-4	Bromodichloromethane	ND	1.0	ND	0.15	
123-91-1	1,4-Dioxane	ND	1.0	ND	0.28	
80-62-6	Methyl Methacrylate	ND	2.0	ND	0.49	
142-82-5	n-Heptane	ND	1.0	ND	0.25	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ND	0.22	
108-10-1	4-Methyl-2-pentanone	ND	1.0	ND	0.25	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ND	0.22	
108-88-3	Toluene	**5.0**	1.0	**1.3**	0.27	
591-78-6	2-Hexanone	ND	1.0	ND	0.25	
124-48-1	Dibromochloromethane	ND	1.0	ND	0.12	
106-93-4	1,2-Dibromoethane	ND	1.0	ND	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201247
Client Sample ID: **14-1F-032712** CAS Sample ID: P1201247-001
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01282

Initial Pressure (psig): -5.66 Final Pressure (psig): 3.56

Canister Dilution Factor: 2.02

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**2.5**	1.0	**0.52**	0.21	
111-65-9	n-Octane	ND	1.0	ND	0.22	
108-90-7	Chlorobenzene	ND	1.0	ND	0.22	
179601-23-1	m,p-Xylenes	**2.7**	2.0	**0.63**	0.47	
75-25-2	Bromoform	ND	1.0	ND	0.098	
100-42-5	Styrene	ND	1.0	ND	0.24	
95-47-6	o-Xylene	ND	1.0	ND	0.23	
111-84-2	n-Nonane	ND	1.0	ND	0.19	
98-82-8	Cumene	ND	1.0	ND	0.21	
80-56-8	alpha-Pinene	**11**	1.0	**2.0**	0.18	
103-65-1	n-Propylbenzene	ND	1.0	ND	0.21	
622-96-8	4-Ethyltoluene	ND	1.0	ND	0.21	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ND	0.21	
95-63-6	1,2,4-Trimethylbenzene	**1.1**	1.0	**0.23**	0.21	
100-44-7	Benzyl Chloride	ND	1.0	ND	0.20	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ND	0.17	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ND	0.17	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ND	0.17	
5989-27-5	d-Limonene	**13**	1.0	**2.4**	0.18	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	ND	0.10	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ND	0.14	
87-68-3	Hexachlorobutadiene	ND	1.0	ND	0.095	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
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RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **25-1F-032312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00949

Date Collected: 3/24/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.85

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**8.5**	0.93	**4.9**	0.54	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.93	**0.43**	0.19	
74-87-3	Chloromethane	ND	0.93	ND	0.45	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.93	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.93	ND	0.42	
74-83-9	Bromomethane	ND	0.93	ND	0.24	
75-00-3	Chloroethane	ND	0.93	ND	0.35	
64-17-5	Ethanol	**270**	9.3	**140**	4.9	
75-05-8	Acetonitrile	ND	0.93	ND	0.55	
107-02-8	Acrolein	ND	3.7	ND	1.6	
67-64-1	Acetone	**24**	9.3	**10**	3.9	
75-69-4	Trichlorofluoromethane	**1.3**	0.93	**0.23**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**42**	1.9	**17**	0.75	
107-13-1	Acrylonitrile	ND	0.93	ND	0.43	
75-35-4	1,1-Dichloroethene	ND	0.93	ND	0.23	
75-09-2	Methylene Chloride	ND	0.93	ND	0.27	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.93	ND	0.30	
76-13-1	Trichlorotrifluoroethane	ND	0.93	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.3	ND	3.0	
156-60-5	trans-1,2-Dichloroethene	ND	0.93	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.93	ND	0.23	
1634-04-4	Methyl tert-Butyl Ether	ND	0.93	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **25-1F-032312** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201247-002

Test Code: EPA TO-15 Date Collected: 3/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00949

Initial Pressure (psig): -4.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.85

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.3	ND	2.6	
78-93-3	2-Butanone (MEK)	ND	9.3	ND	3.1	
156-59-2	cis-1,2-Dichloroethene	ND	0.93	ND	0.23	
141-78-6	Ethyl Acetate	**3.2**	1.9	**0.89**	0.51	
110-54-3	n-Hexane	ND	0.93	ND	0.26	
67-66-3	Chloroform	ND	0.93	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.93	ND	0.31	
71-55-6	1,1,1-Trichloroethane	ND	0.93	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.93	ND	0.15	
110-82-7	Cyclohexane	ND	1.9	ND	0.54	
78-87-5	1,2-Dichloropropane	ND	0.93	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.93	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.93	ND	0.26	
80-62-6	Methyl Methacrylate	ND	1.9	ND	0.45	
142-82-5	n-Heptane	ND	0.93	ND	0.23	
10061-01-5	cis-1,3-Dichloropropene	ND	0.93	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.93	ND	0.23	
10061-02-6	trans-1,3-Dichloropropene	ND	0.93	ND	0.20	
108-88-3	Toluene	**4.4**	0.93	**1.2**	0.25	
591-78-6	2-Hexanone	ND	0.93	ND	0.23	
124-48-1	Dibromochloromethane	ND	0.93	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.93	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201247
Client Sample ID: **25-1F-032312** CAS Sample ID: P1201247-002
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00949

Initial Pressure (psig): -4.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.85

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.93	ND	0.19	
111-65-9	n-Octane	ND	0.93	ND	0.20	
108-90-7	Chlorobenzene	ND	0.93	ND	0.20	
179601-23-1	m,p-Xylenes	ND	1.9	ND	0.43	
75-25-2	Bromoform	ND	0.93	ND	0.089	
100-42-5	Styrene	ND	0.93	ND	0.22	
95-47-6	o-Xylene	ND	0.93	ND	0.21	
111-84-2	n-Nonane	ND	0.93	ND	0.18	
98-82-8	Cumene	ND	0.93	ND	0.19	
80-56-8	alpha-Pinene	**1.7**	0.93	**0.31**	0.17	
103-65-1	n-Propylbenzene	ND	0.93	ND	0.19	
622-96-8	4-Ethyltoluene	ND	0.93	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.93	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	0.93	ND	0.19	
100-44-7	Benzyl Chloride	ND	0.93	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.93	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.93	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.93	ND	0.15	
5989-27-5	d-Limonene	**11**	0.93	**2.0**	0.17	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.93	ND	0.096	
120-82-1	1,2,4-Trichlorobenzene	ND	0.93	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.93	ND	0.087	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **27-1F-032312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01400

Date Collected: 3/24/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 0.50 Liter(s)

Initial Pressure (psig): -5.15 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.91

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**19**	1.9	**11**	1.1	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.2**	1.9	**0.45**	0.39	
74-87-3	Chloromethane	ND	1.9	ND	0.93	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.9	ND	0.27	
106-99-0	1,3-Butadiene	ND	1.9	ND	0.86	
74-83-9	Bromomethane	ND	1.9	ND	0.49	
75-00-3	Chloroethane	ND	1.9	ND	0.72	
64-17-5	Ethanol	**170**	19	**93**	10	
75-05-8	Acetonitrile	ND	1.9	ND	1.1	
107-02-8	Acrolein	ND	7.6	ND	3.3	
67-64-1	Acetone	**71**	19	**30**	8.0	
75-69-4	Trichlorofluoromethane	ND	1.9	ND	0.34	
67-63-0	2-Propanol (Isopropyl Alcohol)	**91**	3.8	**37**	1.6	
107-13-1	Acrylonitrile	ND	1.9	ND	0.88	
75-35-4	1,1-Dichloroethene	ND	1.9	ND	0.48	
75-09-2	Methylene Chloride	**13**	1.9	**3.9**	0.55	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.9	ND	0.61	
76-13-1	Trichlorotrifluoroethane	ND	1.9	ND	0.25	
75-15-0	Carbon Disulfide	ND	19	ND	6.1	
156-60-5	trans-1,2-Dichloroethene	ND	1.9	ND	0.48	
75-34-3	1,1-Dichloroethane	ND	1.9	ND	0.47	
1634-04-4	Methyl tert-Butyl Ether	ND	1.9	ND	0.53	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **27-1F-032312** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201247-003

Test Code: EPA TO-15 Date Collected: 3/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:
Container ID: AC01400

Initial Pressure (psig): -5.15 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.91

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	19	ND	5.4	
78-93-3	2-Butanone (MEK)	ND	19	ND	6.5	
156-59-2	cis-1,2-Dichloroethene	ND	1.9	ND	0.48	
141-78-6	Ethyl Acetate	ND	3.8	ND	1.1	
110-54-3	n-Hexane	ND	1.9	ND	0.54	
67-66-3	Chloroform	ND	1.9	ND	0.39	
109-99-9	Tetrahydrofuran (THF)	ND	1.9	ND	0.65	
71-55-6	1,1,1-Trichloroethane	ND	1.9	ND	0.35	
56-23-5	Carbon Tetrachloride	ND	1.9	ND	0.30	
110-82-7	Cyclohexane	ND	3.8	ND	1.1	
78-87-5	1,2-Dichloropropane	ND	1.9	ND	0.41	
75-27-4	Bromodichloromethane	ND	1.9	ND	0.29	
123-91-1	1,4-Dioxane	ND	1.9	ND	0.53	
80-62-6	Methyl Methacrylate	ND	3.8	ND	0.93	
142-82-5	n-Heptane	**4.5**	1.9	**1.1**	0.47	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	ND	0.42	
108-10-1	4-Methyl-2-pentanone	ND	1.9	ND	0.47	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	ND	0.42	
108-88-3	Toluene	**29**	1.9	**7.8**	0.51	
591-78-6	2-Hexanone	ND	1.9	ND	0.47	
124-48-1	Dibromochloromethane	ND	1.9	ND	0.22	
106-93-4	1,2-Dibromoethane	ND	1.9	ND	0.25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201247
Client Sample ID: **27-1F-032312** CAS Sample ID: P1201247-003
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:
Container ID: AC01400

Initial Pressure (psig): -5.15 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.91

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	1.9	ND	0.40	
111-65-9	n-Octane	ND	1.9	ND	0.41	
108-90-7	Chlorobenzene	ND	1.9	ND	0.41	
179601-23-1	m,p-Xylenes	**12**	3.8	**2.7**	0.88	
75-25-2	Bromoform	ND	1.9	ND	0.18	
100-42-5	Styrene	ND	1.9	ND	0.45	
95-47-6	o-Xylene	**2.8**	1.9	**0.65**	0.44	
111-84-2	n-Nonane	ND	1.9	ND	0.36	
98-82-8	Cumene	ND	1.9	ND	0.39	
80-56-8	alpha-Pinene	**2.7**	1.9	**0.48**	0.34	
103-65-1	n-Propylbenzene	ND	1.9	ND	0.39	
622-96-8	4-Ethyltoluene	ND	1.9	ND	0.39	
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	ND	0.39	
95-63-6	1,2,4-Trimethylbenzene	ND	1.9	ND	0.39	
100-44-7	Benzyl Chloride	ND	1.9	ND	0.37	
541-73-1	1,3-Dichlorobenzene	ND	1.9	ND	0.32	
106-46-7	1,4-Dichlorobenzene	ND	1.9	ND	0.32	
95-50-1	1,2-Dichlorobenzene	ND	1.9	ND	0.32	
5989-27-5	d-Limonene	**12**	1.9	**2.1**	0.34	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	ND	0.20	
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	ND	0.26	
87-68-3	Hexachlorobutadiene	ND	1.9	ND	0.18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **24-1F-032112**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00183

Date Collected: 3/22/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.08 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**0.94**	0.73	**0.54**	0.42	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.73	**0.42**	0.15	
74-87-3	Chloromethane	ND	0.73	ND	0.35	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.73	ND	0.10	
106-99-0	1,3-Butadiene	ND	0.73	ND	0.33	
74-83-9	Bromomethane	ND	0.73	ND	0.19	
75-00-3	Chloroethane	ND	0.73	ND	0.28	
64-17-5	Ethanol	**640**	7.3	**340**	3.9	
75-05-8	Acetonitrile	ND	0.73	ND	0.43	
107-02-8	Acrolein	ND	2.9	ND	1.3	
67-64-1	Acetone	**16**	7.3	**6.9**	3.1	
75-69-4	Trichlorofluoromethane	**2.0**	0.73	**0.36**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**3.1**	1.5	**1.2**	0.59	
107-13-1	Acrylonitrile	ND	0.73	ND	0.34	
75-35-4	1,1-Dichloroethene	ND	0.73	ND	0.18	
75-09-2	Methylene Chloride	ND	0.73	ND	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.73	ND	0.23	
76-13-1	Trichlorotrifluoroethane	ND	0.73	ND	0.095	
75-15-0	Carbon Disulfide	ND	7.3	ND	2.3	
156-60-5	trans-1,2-Dichloroethene	ND	0.73	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.73	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.73	ND	0.20	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **24-1F-032112** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201247-004

Test Code: EPA TO-15 Date Collected: 3/22/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00183

Initial Pressure (psig): -2.08 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.3	ND	2.1	
78-93-3	2-Butanone (MEK)	ND	7.3	ND	2.5	
156-59-2	cis-1,2-Dichloroethene	ND	0.73	ND	0.18	
141-78-6	Ethyl Acetate	**1.8**	1.5	**0.49**	0.41	
110-54-3	n-Hexane	**1.0**	0.73	**0.30**	0.21	
67-66-3	Chloroform	**1.5**	0.73	**0.30**	0.15	
109-99-9	Tetrahydrofuran (THF)	ND	0.73	ND	0.25	
71-55-6	1,1,1-Trichloroethane	ND	0.73	ND	0.13	
56-23-5	Carbon Tetrachloride	ND	0.73	ND	0.12	
110-82-7	Cyclohexane	ND	1.5	ND	0.42	
78-87-5	1,2-Dichloropropane	ND	0.73	ND	0.16	
75-27-4	Bromodichloromethane	ND	0.73	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.73	ND	0.20	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.36	
142-82-5	n-Heptane	ND	0.73	ND	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.73	ND	0.16	
108-10-1	4-Methyl-2-pentanone	**3.3**	0.73	**0.80**	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.73	ND	0.16	
108-88-3	Toluene	**3.3**	0.73	**0.86**	0.19	
591-78-6	2-Hexanone	ND	0.73	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.73	ND	0.086	
106-93-4	1,2-Dibromoethane	ND	0.73	ND	0.095	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201247
Client Sample ID: **24-1F-032112** CAS Sample ID: P1201247-004
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/22/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 3/29/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00183

Initial Pressure (psig): -2.08 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.73	ND	0.15	
111-65-9	n-Octane	ND	0.73	ND	0.16	
108-90-7	Chlorobenzene	ND	0.73	ND	0.16	
179601-23-1	m,p-Xylenes	ND	1.5	ND	0.34	
75-25-2	Bromoform	ND	0.73	ND	0.071	
100-42-5	Styrene	ND	0.73	ND	0.17	
95-47-6	o-Xylene	ND	0.73	ND	0.17	
111-84-2	n-Nonane	ND	0.73	ND	0.14	
98-82-8	Cumene	ND	0.73	ND	0.15	
80-56-8	alpha-Pinene	**1.6**	0.73	**0.29**	0.13	
103-65-1	n-Propylbenzene	ND	0.73	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.73	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.73	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	ND	0.73	ND	0.15	
100-44-7	Benzyl Chloride	ND	0.73	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.73	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.73	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.73	ND	0.12	
5989-27-5	d-Limonene	**23**	0.73	**4.1**	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.73	ND	0.076	
120-82-1	1,2,4-Trichlorobenzene	ND	0.73	ND	0.098	
87-68-3	Hexachlorobutadiene	ND	0.73	ND	0.068	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201247
Client Sample ID: **Method Blank** CAS Sample ID: P120407-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201247

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 3/22 - 3/28/12
Analyst: Elsa Moctezuma Date(s) Received: 3/29/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 4/7/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120407-MB	**106**	**99**	**97**	70-130	
Lab Control Sample	P120407-LCS	**103**	**99**	**100**	70-130	
14-1F-032712	P1201247-001	**106**	**98**	**96**	70-130	
25-1F-032312	P1201247-002	**105**	**99**	**97**	70-130	
25-1F-032312	P1201247-002DUP	**106**	**98**	**97**	70-130	
27-1F-032312	P1201247-003	**107**	**99**	**97**	70-130	
24-1F-032112	P1201247-004	**108**	**102**	**93**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**215**	**109**	59-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**170**	**87**	63-115	
74-87-3	Chloromethane	190	**173**	**91**	59-124	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**170**	**85**	65-113	
106-99-0	1,3-Butadiene	204	**205**	**100**	60-138	
74-83-9	Bromomethane	194	**174**	**90**	69-129	
75-00-3	Chloroethane	196	**174**	**89**	60-120	
64-17-5	Ethanol	928	**861**	**93**	58-121	
75-05-8	Acetonitrile	194	**194**	**100**	64-129	
107-02-8	Acrolein	198	**183**	**92**	54-127	
67-64-1	Acetone	1,010	**922**	**91**	59-114	
75-69-4	Trichlorofluoromethane	202	**177**	**88**	66-108	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**299**	**78**	50-113	
107-13-1	Acrylonitrile	198	**199**	**101**	72-135	
75-35-4	1,1-Dichloroethene	212	**198**	**93**	70-117	
75-09-2	Methylene Chloride	206	**183**	**89**	61-108	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**217**	**104**	70-131	
76-13-1	Trichlorotrifluoroethane	206	**191**	**93**	70-113	
75-15-0	Carbon Disulfide	208	**186**	**89**	65-112	
156-60-5	trans-1,2-Dichloroethene	196	**188**	**96**	71-119	
75-34-3	1,1-Dichloroethane	200	**192**	**96**	71-116	
1634-04-4	Methyl tert-Butyl Ether	198	**193**	**97**	67-116	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**992**	**104**	59-142	
78-93-3	2-Butanone (MEK)	206	**205**	**100**	68-125	
156-59-2	cis-1,2-Dichloroethene	206	**195**	**95**	69-119	
141-78-6	Ethyl Acetate	398	**391**	**98**	63-130	
110-54-3	n-Hexane	198	**180**	**91**	57-120	
67-66-3	Chloroform	214	**192**	**90**	69-111	
109-99-9	Tetrahydrofuran (THF)	202	**191**	**95**	57-123	
71-55-6	1,1,1-Trichloroethane	198	**186**	**94**	73-119	
56-23-5	Carbon Tetrachloride	202	**194**	**96**	74-129	
110-82-7	Cyclohexane	390	**355**	**91**	70-113	
78-87-5	1,2-Dichloropropane	198	**183**	**92**	69-118	
75-27-4	Bromodichloromethane	198	**188**	**95**	75-124	
123-91-1	1,4-Dioxane	200	**189**	**95**	71-123	
80-62-6	Methyl Methacrylate	400	**390**	**98**	72-127	
142-82-5	n-Heptane	196	**188**	**96**	68-120	
10061-01-5	cis-1,3-Dichloropropene	188	**183**	**97**	71-130	
108-10-1	4-Methyl-2-pentanone	204	**204**	**100**	69-130	
10061-02-6	trans-1,3-Dichloropropene	210	**212**	**101**	76-133	
108-88-3	Toluene	202	**179**	**89**	67-111	
591-78-6	2-Hexanone	222	**213**	**96**	70-123	
124-48-1	Dibromochloromethane	206	**197**	**96**	75-129	
106-93-4	1,2-Dibromoethane	200	**180**	**90**	73-122	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**211**	**96**	68-132	
111-65-9	n-Octane	200	**195**	**98**	68-116	
108-90-7	Chlorobenzene	202	**177**	**88**	69-113	
179601-23-1	m,p-Xylenes	392	**360**	**92**	70-116	
75-25-2	Bromoform	208	**188**	**90**	69-127	
100-42-5	Styrene	200	**188**	**94**	71-125	
95-47-6	o-Xylene	194	**176**	**91**	70-116	
111-84-2	n-Nonane	196	**184**	**94**	68-116	
98-82-8	Cumene	190	**174**	**92**	70-116	
80-56-8	alpha-Pinene	186	**174**	**94**	71-119	
103-65-1	n-Propylbenzene	192	**172**	**90**	71-119	
622-96-8	4-Ethyltoluene	198	**174**	**88**	71-119	
108-67-8	1,3,5-Trimethylbenzene	200	**181**	**91**	71-121	
95-63-6	1,2,4-Trimethylbenzene	194	**180**	**93**	73-127	
100-44-7	Benzyl Chloride	200	**206**	**103**	65-137	
541-73-1	1,3-Dichlorobenzene	200	**164**	**82**	68-123	
106-46-7	1,4-Dichlorobenzene	206	**161**	**78**	65-120	
95-50-1	1,2-Dichlorobenzene	198	**163**	**82**	67-121	
5989-27-5	d-Limonene	200	**189**	**95**	67-130	
96-12-8	1,2-Dibromo-3-chloropropane	196	**181**	**92**	72-133	
120-82-1	1,2,4-Trichlorobenzene	196	**163**	**83**	62-133	
87-68-3	Hexachlorobutadiene	202	**166**	**82**	60-128	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **25-1F-032312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00949

Date Collected: 3/24/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.85

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	Duplicate Sample Result ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Propene	8.48	4.93	7.56	4.39	8.02	**11**	25	
Dichlorodifluoromethane (CFC 12)	2.11	0.427	2.07	0.419	2.09	**2**	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	272	144	265	141	268.5	**3**	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	24.3	10.2	23.7	9.97	24	**3**	25	
Trichlorofluoromethane	1.30	0.231	1.24	0.220	1.27	**5**	25	
2-Propanol (Isopropyl Alcohol)	42.2	17.2	42.9	17.5	42.55	**2**	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **25-1F-032312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00949

Date Collected: 3/24/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.85

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	ND	ND	-	-	25	
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	3.21	0.892	3.10	0.862	3.155	**3**	25	
n-Hexane	ND	ND	ND	ND	-	-	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
Toluene	4.35	1.16	4.30	1.14	4.325	**1**	25	
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **25-1F-032312**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-002DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00949

Date Collected: 3/24/12
Date Received: 3/29/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.85

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
n-Butyl Acetate	ND	ND	ND	ND	-	-	25	
n-Octane	ND	ND	ND	ND	-	-	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	ND	ND	-	-	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
n-Nonane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	1.72	0.310	1.70	0.306	1.71	**1**	25	
n-Propylbenzene	ND	ND	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	10.9	1.95	10.8	1.94	10.85	**0.9**	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **14-1F-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-001

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01282

Date Collected: 3/28/12
Date Received: 3/29/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.66 Final Pressure (psig): 3.56

Canister Dilution Factor: 2.02

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.051	ND	0.020	
107-06-2	1,2-Dichloroethane	**0.15**	0.051	**0.038**	0.012	
71-43-2	Benzene	**1.1**	0.15	**0.35**	0.047	
79-01-6	Trichloroethene	**0.058**	0.051	**0.011**	0.0094	
79-00-5	1,1,2-Trichloroethane	ND	0.20	ND	0.037	
127-18-4	Tetrachloroethene	ND	0.051	ND	0.0075	
100-41-4	Ethylbenzene	**0.69**	0.20	**0.16**	0.047	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.051	ND	0.0074	
91-20-3	Naphthalene	**0.39**	0.20	**0.075**	0.039	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **25-1F-032312** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201247-002

Test Code: EPA TO-15 SIM Date Collected: 3/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/29/12
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00949

Initial Pressure (psig): -4.74 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.85

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.046	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.089**	0.046	**0.022**	0.011	
71-43-2	Benzene	**0.48**	0.14	**0.15**	0.043	
79-01-6	Trichloroethene	ND	0.046	ND	0.0086	
79-00-5	1,1,2-Trichloroethane	ND	0.19	ND	0.034	
127-18-4	Tetrachloroethene	ND	0.046	ND	0.0068	
100-41-4	Ethylbenzene	**0.22**	0.19	**0.050**	0.043	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.046	ND	0.0067	
91-20-3	Naphthalene	**0.22**	0.19	**0.041**	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **27-1F-032312** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201247-003

Test Code: EPA TO-15 SIM Date Collected: 3/24/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/29/12
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:
Container ID: AC01400
Initial Pressure (psig): -5.15 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.91

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.096	ND	0.037	
107-06-2	1,2-Dichloroethane	**0.17**	0.096	**0.042**	0.024	
71-43-2	Benzene	**1.1**	0.29	**0.36**	0.090	
79-01-6	Trichloroethene	ND	0.096	ND	0.018	
79-00-5	1,1,2-Trichloroethane	ND	0.38	ND	0.070	
127-18-4	Tetrachloroethene	**0.10**	0.096	**0.015**	0.014	
100-41-4	Ethylbenzene	**2.5**	0.38	**0.58**	0.088	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.096	ND	0.014	
91-20-3	Naphthalene	ND	0.38	ND	0.073	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **24-1F-032112** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201247-004

Test Code: EPA TO-15 SIM Date Collected: 3/22/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 3/29/12
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00183
Initial Pressure (psig): -2.08 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.037	ND	0.014	
107-06-2	1,2-Dichloroethane	**0.11**	0.037	**0.026**	0.0090	
71-43-2	Benzene	**0.35**	0.11	**0.11**	0.034	
79-01-6	Trichloroethene	**0.068**	0.037	**0.013**	0.0068	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.027	
127-18-4	Tetrachloroethene	**0.097**	0.037	**0.014**	0.0054	
100-41-4	Ethylbenzene	**0.18**	0.15	**0.041**	0.034	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.037	ND	0.0053	
91-20-3	Naphthalene	ND	0.15	ND	0.028	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201247

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date(s) Collected: 3/22 - 3/28/12
Analyst: Karen Ryan Date(s) Received: 3/29/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 4/9/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120409-MB	**101**	**110**	**108**	70-130	
Lab Control Sample	P120409-LCS	**102**	**110**	**110**	70-130	
14-1F-032712	P1201247-001	**99**	**112**	**107**	70-130	
14-1F-032712	P1201247-001DUP	**101**	**114**	**106**	70-130	
25-1F-032312	P1201247-002	**100**	**112**	**108**	70-130	
27-1F-032312	P1201247-003	**100**	**110**	**107**	70-130	
24-1F-032112	P1201247-004	**99**	**110**	**106**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201247
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**3.08**	**79**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**3.13**	**78**	51-140	
71-43-2	Benzene	3.96	**3.51**	**89**	56-125	
79-01-6	Trichloroethene	3.88	**2.97**	**77**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**2.89**	**74**	49-137	
127-18-4	Tetrachloroethene	3.68	**2.91**	**79**	58-134	
100-41-4	Ethylbenzene	3.96	**3.18**	**80**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**3.04**	**79**	53-148	
91-20-3	Naphthalene	3.44	**3.08**	**90**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **14-1F-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201247
CAS Sample ID: P1201247-001DUP

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01282

Date Collected: 3/28/12
Date Received: 3/29/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.66 Final Pressure (psig): 3.56

Canister Dilution Factor: 2.02

CAS #	Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
75-01-4	Vinyl Chloride	ND	ND	ND	ND	-	-	25	
107-06-2	1,2-Dichloroethane	0.154	0.0381	0.161	0.0398	0.1575	**4**	25	
71-43-2	Benzene	1.12	0.351	1.15	0.361	1.135	**3**	25	
79-01-6	Trichloroethene	0.0585	0.0109	0.0601	0.0112	0.0593	**3**	25	
79-00-5	1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
127-18-4	Tetrachloroethene	ND	ND	ND	ND	-	-	25	
100-41-4	Ethylbenzene	0.690	0.159	0.713	0.164	0.7015	**3**	25	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
91-20-3	Naphthalene	0.392	0.0749	0.397	0.0758	0.3945	**1**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

Massachusetts APH ICAL Method: M8011412A.M ICAL Date: 1/14/12 Instrument ID: MS08

Hydrocarbon Ranges

	areas							masses					
C5-C8 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopentane	60478	112606	488243	2480105	4710733	9222808		0.520	1.04	5.20	26.0	52.0	104
n-Hexane	59953	110631	507126	2577865	4931102	9678199		0.490	0.98	4.90	24.5	49.0	98
Cyclohexane	63203	115230	548910	2874726	5524402	10890911		0.500	1.00	5.00	25.0	50.0	100
2,3-Dimethylpentane	68648	127222	585183	2998017	5742104	11319597		0.520	1.04	5.20	26.0	52.0	104
n-Heptane	66143	120286	558074	2884817	5509801	10873046		0.490	0.98	4.90	24.5	49.0	98
n-Octane	76169	137829	632891	3286017	6205035	12092514		0.505	1.01	5.05	25.3	50.5	101
area sum:	**394594**	**723804**	**3320427**	**17101547**	**32623177**	**64077075**	**sum:**	**3.025**	**6.050**	**30.25**	**151.30**	**302.50**	**605.00**
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
2,3-Dimethylheptane	78780	147724	682518	3501487	6691428	13148840		0.485	0.97	4.85	24.3	48.5	97
n-Nonane	77464	140680	662221	3417128	6555165	12940625		0.485	0.97	4.85	24.3	48.5	97
n-Decane	80593	147724	705259	3651028	7021424	13870530		0.490	0.98	4.90	24.5	49.0	98
Butylcyclohexane	88915	166782	776903	4026931	7749936	15415340		0.495	0.99	4.95	24.8	49.5	99
n-Undecane	80867	152557	719618	3772331	7263077	14385881		0.480	0.96	4.80	24.0	48.0	96
n-Dodecane	70045	143746	687255	3673524	7115012	14041583		0.500	1.00	5.00	25.0	50.0	100
area sum:	**476664**	**899213**	**4233774**	**22042429**	**42396042**	**83802799**	**sum:**	**2.935**	**5.870**	**29.35**	**146.90**	**293.50**	**587.00**
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopropylbenzene	10658	19169	87439	448287	849124	1695737		0.485	0.97	4.85	24.3	48.5	97
3-Ethyltoluene	11805	20564	97823	504510	977020	1973178		0.470	0.94	4.70	23.5	47.0	94
1,3,5-Trimethylbenzene	15759	29260	134073	700133	1353305	2726630		0.490	0.98	4.90	24.5	49.0	98
1,2,3-Trimethylbenzene	17195	31328	143473	757946	1493373	3063059		0.495	0.99	4.95	24.8	49.5	99
p-Isopropyltoluene	9490	18116	83401	440962	872799	1814314		0.460	0.92	4.60	23.0	46.0	92
area sum:	**64907**	**118437**	**546209**	**2851838**	**5545621**	**11272918**	**sum:**	**2.400**	**4.800**	**24.00**	**120.10**	**240.00**	**480.00**

Massachusetts APH ICAL: M8011412A.M ICAL Date: 1/14/12 Instrument ID: MS08

Hydrocarbon Ranges

areas

Internal Standards (TIC)	0.5	1	5	25	50	100
Bromochloromethane (IS1)	1312793	1307309	1293586	1289283	1284194	1283817
1,4-Difluorobenzene (IS2)	2547079	2541159	2512498	2475255	2422119	2352159
Chlorobenzene-d5 (IS3)	2929189	2913374	2880258	2895080	2878314	2908396
Internal Standards (EIC)						
Bromochloromethane (IS1)	249696	247899	245985	245585	244327	243561
1,4-Difluorobenzene (IS2)	1153657	1149947	1133233	1136223	1127203	1138730
Chlorobenzene-d5 (IS3)	1007702	1004638	991212	992925	982812	986950
Surrogates (TIC)	**0.5**	**1**	**5**	**25**	**50**	**100**
1,2-Dichloroethane-d4	1162497	1154617	1105630	1126201	1103958	1095945
Toluene-d8	3508018	3490493	3455382	3466688	3437986	3457323
p-Bromofluorobenzene	2298220	2284797	2197239	2227396	2192159	2197999

RRFs

C5-C8 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	2.8268	2.6009	2.4215	2.4870	2.3919	2.3252	2.509	7.24
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	4.0291	3.8120	3.6383	3.7780	3.6744	3.6163	3.758	4.09
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	0.6709	0.6140	0.5740	0.5979	0.5878	0.5949	0.607	5.63

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **04071202.D**
Data File Path: **J:\MS08\Data\2012_04\06**
Operator: **EM**
Date Acquired: **4/7/12 3:06**
Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15/MAPH CCV STD**
Misc Info: **S25-04031203/S25-03161202**
Instrument Name: **MS08**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	15.89	1082412
16)	Chlorobenzene-d5 (IS3)	21.69	941687

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	8.19	2388606	2.538	153.0	**1.14**	**-30**	**30**	Pass
4)	n-Hexane	13.08	2507742						
9)	Cyclohexane	15.81	2792389						
10)	2,3-Dimethylpentane	16.17	2922324	**Spike**	**ICAL**				
11)	n-Heptane	17.35	2804136	**Amt (ng)**	**RRF**				
14)	n-Octane	20.69	3208272	151.30	2.509				
			16623469						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	22.31	3401295	3.834	149.9	**2.02**	**-30**	**30**	Pass
19)	n-Nonane	23.30	3317221						
25)	n-Decane	25.26	3533579						
28)	Butylcyclohexane	25.99	3853565	**Spike**	**ICAL**				
29)	n-Undecane	26.76	3619770	**Amt (ng)**	**RRF**				
30)	n-Dodecane	28.00	3488040	146.90	3.758				
			21213470						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	23.78	439879	0.601	118.9	**-1.03**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	24.52	482296						
24)	1,3,5-Trimethylbenzene	24.66	665021						
26)	p-Isopropyltoluene	25.68	416582	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	25.68	714045	**Amt (ng)**	**RRF**				
			2717823	120.1	0.607				

Em 4/7/12

Response Factor Report MS08

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Dec 12 09:45:45 2011
Response Via : Initial Calibration

Calibration Files
0.1 =12091118.D 0.2 =12091119.D 0.5 =12091120.D 1.0 =12091121.D 5.0 =12091122.D 25 =12091123.D
50 =12091124.D 100 =12091125.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	----------	ISTD	----------	----------	----------	----------	----------		
2)	T	Propene	2.487	1.965	1.952	1.692	2.194	2.303	2.185	2.036	2.102	11.62
3)	T	Dichlorodifluo...	3.545	2.805	2.940	2.748	2.432	2.361	2.278	2.199	2.664	16.73
4)	T	Chloromethane	3.290	2.811	2.875	2.512	2.176	2.286	1.977	1.664	2.449	21.62
5)	T	1,2-Dichloro-1...	1.901	1.661	1.575	1.458	1.359	1.333	1.200	1.190	1.460	16.68
6)	T	Vinyl Chloride	2.906	2.590	2.631	2.374	2.145	2.129	1.950	1.939	2.333	15.07
7)	T	1,3-Butadiene	2.145	1.788	1.790	1.718	1.581	1.689	1.621	1.616	1.743	10.33
8)	T	Bromomethane	1.687	1.328	1.349	1.212	1.094	1.142	1.111	1.092	1.252	16.21
9)	T	Chloroethane	1.671	1.259	1.333	1.193	1.101	1.091	1.046	1.044	1.217	17.29
10)	T	Ethanol	2.040	1.345	1.186	1.085	1.022	1.096	1.076	1.064	1.239	27.34
11)	T	Acetonitrile	4.365	2.973	2.723	2.546	2.480	2.562	2.482	2.468	2.825	22.85
12)	T	Acrolein	1.328	0.931	0.907	0.861	0.772	0.814	0.789	0.779	0.897	20.48
13)	T	Acetone	1.645	1.316	1.249	1.129	0.994	1.015	0.981	0.964	1.161	20.26
14)	T	Trichlorofluor...	2.776	2.385	2.496	2.272	2.097	2.135	2.042	2.011	2.277	11.59
15)	T	2-Propanol (Is...		4.463	4.536	4.168	2.920	2.763	2.577	2.672	3.443	26.09
16)	T	Acrylonitrile	2.701	1.907	1.878	1.783	1.745	1.813	1.765	1.738	1.916	16.85
17)	T	1,1-Dichloroet...	1.458	1.418	1.452	1.263	1.206	1.223	1.172	1.152	1.293	9.95
18)	T	2-Methyl-2-Pro...	4.464	3.710	3.939	3.616	3.558	3.584			3.812	9.14
19)	T	Methylene Chlo...			1.958	1.578	1.294	1.273	1.220	1.201	1.421	20.88
20)	T	3-Chloro-1-pro...	2.347	2.260	2.345	2.220	2.150	2.296	2.230	2.191	2.255	3.15
21)	T	Trichlorotrifl...	1.348	1.244	1.299	1.193	1.089	1.098	1.062	1.035	1.171	10.01
22)	T	Carbon Disulfide		6.210	5.678	5.057	4.654	4.699	4.488	4.424	5.030	13.40
23)	T	trans-1,2-Dich...	2.436	2.237	2.206	2.142	1.951	1.953	1.883	1.835	2.080	10.00
24)	T	1,1-Dichloroet...	2.896	2.757	2.747	2.500	2.307	2.379	2.288	2.236	2.514	10.07
25)	T	Methyl tert-Bu...	5.128	4.611	4.650	4.307	4.119	4.185	4.042	3.984	4.378	8.93
26)	T	Vinyl Acetate	0.430	0.368	0.423	0.399	0.393	0.410	0.402	0.398	0.403	4.70
27)	T	2-Butanone (MEK)	1.265	1.003	1.038	0.972	0.927	0.964	0.928	0.794	0.986	13.56
28)	T	cis-1,2-Dichlo...	2.442	2.056	2.101	1.938	1.826	1.836	1.764	1.720	1.960	12.05
29)	T	Diisopropyl Ether	1.446	1.223	1.323	1.262	1.171	1.188	1.153	1.148	1.239	8.26
30)	T	Ethyl Acetate	0.611	0.554	0.573	0.545	0.517	0.535	0.520	0.516	0.546	6.02
31)	T	n-Hexane	3.541	3.006	3.181	2.805	2.582	2.633	2.545	2.543	2.855	12.70

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.679	2.408	2.409	2.204	1.983	2.054	1.974	1.937	2.206	12.18
33)	S	1,2-Dichloroet...	1.586	1.577	1.582	1.590	1.535	1.533	1.520	1.504	1.553	2.19
34)	T	Tetrahydrofura...	1.274	0.932	1.100	0.938	0.910	0.879	0.830	0.821	0.961	15.96
35)	T	Ethyl tert-But...	1.999	1.832	2.033	1.818	1.732	1.757	1.708	1.687	1.821	7.18
36)	T	1,2-Dichloroet...	2.099	1.992	1.976	1.806	1.683	1.700	1.599	1.531	1.798	11.39
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.531	0.465	0.486	0.453	0.419	0.434	0.413	0.403	0.451	9.46
39)	T	Isopropyl Acetate	0.227	0.205	0.220	0.206	0.194	0.201	0.192	0.188	0.204	6.71
40)	T	1-Butanol		0.348	0.319	0.300	0.320	0.335	0.324	0.318	0.323	4.66
41)	T	Benzene	1.633	1.385	1.359	1.227	1.136	1.158	1.101	1.070	1.258	15.11
42)	T	Carbon Tetrach...	0.394	0.356	0.369	0.340	0.334	0.352	0.337	0.333	0.352	6.03
43)	T	Cyclohexane	0.666	0.576	0.588	0.539	0.492	0.500	0.479	0.469	0.539	12.59
44)	T	tert-Amyl Meth...	1.092	0.926	0.998	0.937	0.900	0.918	0.881	0.858	0.939	7.95
45)	T	1,2-Dichloropr...	0.397	0.361	0.368	0.324	0.312	0.316	0.300	0.293	0.334	11.12
46)	T	Bromodichlorom...	0.458	0.387	0.392	0.378	0.362	0.378	0.362	0.353	0.384	8.57
47)	T	Trichloroethene	0.466	0.375	0.379	0.344	0.323	0.328	0.316	0.309	0.355	14.62
48)	T	1,4-Dioxane	0.305	0.282	0.288	0.248	0.245	0.246	0.237	0.230	0.260	10.55
49)	T	2,2,4-Trimethy...	1.964	1.629	1.686	1.546	1.447	1.461	1.387	1.337	1.557	12.98
50)	T	Methyl Methacr...	0.156	0.139	0.150	0.135	0.136	0.142	0.136	0.135	0.141	5.53
51)	T	n-Heptane	0.427	0.373	0.385	0.364	0.341	0.344	0.332	0.324	0.361	9.35
52)	T	cis-1,3-Dichlo...	0.571	0.502	0.521	0.491	0.482	0.500	0.481	0.471	0.502	6.33
53)	T	4-Methyl-2-pen...	0.359	0.295	0.308	0.303	0.297	0.303	0.289	0.284	0.305	7.68
54)	T	trans-1,3-Dich...	0.476	0.413	0.443	0.421	0.429	0.453	0.437	0.427	0.437	4.59
55)	T	1,1,2-Trichlor...	0.340	0.301	0.310	0.284	0.276	0.285	0.271	0.265	0.292	8.44
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	2.305	2.306	2.305	2.309	2.306	2.300	2.310	2.304	2.306	0.14
58)	T	Toluene	3.623	2.920	3.025	2.738	2.571	2.574	2.473	2.421	2.793	14.19
59)	T	2-Hexanone	2.049	1.429	1.515	1.403	1.395	1.422	1.367	1.337	1.490	15.57
60)	T	Dibromochlorom...	0.696	0.618	0.636	0.636	0.612	0.648	0.629	0.625	0.638	4.14
61)	T	1,2-Dibromoethane	0.831	0.730	0.718	0.658	0.641	0.662	0.638	0.628	0.688	9.97
62)	T	n-Butyl Acetate	2.338	1.850	1.857	1.721	1.704	1.765	1.737	1.737	1.839	11.40
63)	T	n-Octane	0.785	0.652	0.714	0.643	0.602	0.611	0.580	0.572	0.645	11.28
64)	T	Tetrachloroethene	1.090	0.904	0.904	0.826	0.767	0.779	0.756	0.755	0.848	13.63
65)	T	Chlorobenzene	2.375	1.868	1.886	1.744	1.610	1.637	1.574	1.548	1.780	15.30
66)	T	Ethylbenzene	3.846	3.171	3.188	2.956	2.803	2.848	2.743	2.680	3.030	12.51
67)	T	m- & p-Xylenes	3.081	2.499	2.611	2.392	2.216	2.273	2.170	2.112	2.419	13.08
68)	T	Bromoform	0.622	0.494	0.556	0.541	0.551	0.598	0.589	0.594	0.568	7.19
69)	T	Styrene	2.478	1.895	1.937	1.800	1.735	1.803	1.726	1.675	1.881	13.64
70)	T	o-Xylene	3.279	2.708	2.726	2.479	2.331	2.373	2.283	2.224	2.550	13.65

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	2.005	1.753	1.847	1.675	1.581	1.597	1.518	1.470	1.681	10.69
72)	T	1,1,2,2-Tetrac...	1.348	1.164	1.262	1.150	1.083	1.121	1.085	1.066	1.160	8.48
73)	S	Bromofluoroben...	0.774	0.771	0.779	0.781	0.775	0.778	0.782	0.780	0.777	0.50
74)	T	Cumene	4.522	3.495	3.524	3.169	2.962	3.002	2.884	2.831	3.299	16.98
75)	T	alpha-Pinene	1.782	1.636	1.734	1.601	1.537	1.578	1.518	1.498	1.611	6.35
76)	T	n-Propylbenzene	5.441	4.229	4.306	3.924	3.710	3.754	3.553	3.394	4.039	16.01
77)	T	3-Ethyltoluene	4.091	3.373	3.461	3.038	2.964	2.981	2.893	2.845	3.206	13.14
78)	T	4-Ethyltoluene	4.003	3.202	3.301	3.151	2.837	2.983	2.810	2.776	3.133	12.84
79)	T	1,3,5-Trimethy...	3.324	2.662	2.723	2.537	2.378	2.426	2.344	2.403	2.600	12.43
80)	T	alpha-Methylst...	1.742	1.386	1.449	1.371	1.390	1.402	1.354	1.399	1.436	8.80
81)	T	2-Ethyltoluene	4.143	3.362	3.430	3.169	2.975	3.048	2.919	2.985	3.254	12.43
82)	T	1,2,4-Trimethy...	3.356	2.663	2.791	2.551	2.433	2.513	2.454	2.548	2.664	11.37
83)	T	n-Decane	1.969	1.702	1.844	1.705	1.582	1.626	1.554	1.609	1.699	8.39
84)	T	Benzyl Chloride	2.373	1.648	1.772	1.688	1.799	2.058	2.054	2.190	1.948	13.35
85)	T	1,3-Dichlorobe...	2.498	1.658	1.649	1.455	1.377	1.409	1.374	1.436	1.607	23.49
86)	T	1,4-Dichlorobe...	2.655	1.785	1.618	1.492	1.380	1.428	1.388	1.449	1.649	25.99
87)	T	sec-Butylbenzene	4.527	3.773	3.816	3.471	3.264	3.328	3.214	3.176	3.571	12.80
88)	T	4-Isopropyltol...	4.426	3.674	3.683	3.416	3.254	3.356	3.253	3.366	3.554	10.98
89)	T	1,2,3-Trimethy...	3.266	2.650	2.852	2.588	2.471	2.573	2.506	2.619	2.691	9.63
90)	T	1,2-Dichlorobe...	2.173	1.589	1.545	1.435	1.332	1.387	1.370	1.415	1.531	17.89
91)	T	d-Limonene	1.124	0.998	1.106	1.069	1.064	1.072	1.040	1.065	1.067	3.58
92)	T	1,2-Dibromo-3-...	0.563	0.488	0.501	0.486	0.494	0.525	0.532	0.542	0.517	5.50
93)	T	n-Undecane	1.922	1.637	1.755	1.671	1.608	1.630	1.608	1.592	1.678	6.63
94)	T	1,2,4-Trichlor...		1.335	1.165	1.062	1.017	1.071	1.086	1.118	1.122	9.32
95)	T	Naphthalene		4.848	3.923	3.638	3.497	3.721	3.755	3.783	3.881	11.50
96)	T	n-Dodecane	1.866	1.599	1.669	1.586	1.545	1.575	1.553	1.509	1.613	6.99
97)	T	Hexachlorobuta...	0.841	0.749	0.730	0.673	0.635	0.664	0.663	0.676	0.704	9.50
98)	T	Cyclohexanone	1.172	0.979	1.021	0.969	0.952	0.962	0.931	0.903	0.986	8.37
99)	T	tert-Butylbenzene	3.486	2.799	2.880	2.658	2.449	2.533	2.453	2.528	2.723	12.71
100)	T	n-Butylbenzene	3.596	2.904	2.958	2.670	2.572	2.625	2.613	2.593	2.817	12.33

(#) = Out of Range

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\07\
Data File : 04071201.D
Acq On : 7 Apr 2012 2:23
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 07 07:01:39 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	82	-0.02
2	T	Propene	2.102	2.305	-9.7	83	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.312	13.2	81	0.00
4	T	Chloromethane	2.449	2.172	11.3	78	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.212	17.0	75	0.00
6	T	Vinyl Chloride	2.333	2.037	12.7	79	0.00
7	T	1,3-Butadiene	1.743	1.733	0.6	85	0.00
8	T	Bromomethane	1.252	1.113	11.1	80	0.00
9	T	Chloroethane	1.217	1.092	10.3	83	0.00
10	T	Ethanol	1.239	1.182	4.6	89	-0.07
11	T	Acetonitrile	2.825	2.653	6.1	85	-0.05
12	T	Acrolein	0.897	0.829	7.6	84	-0.02
13	T	Acetone	1.161	1.067	8.1	87	-0.05
14	T	Trichlorofluoromethane	2.277	2.119	6.9	82	0.00
15	T	2-Propanol (Isopropanol)	3.443	2.761	19.8	82	-0.05
16	T	Acrylonitrile	1.916	1.842	3.9	84	-0.03
17	T	1,1-Dichloroethene	1.293	1.185	8.4	80	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.075	19.3	71	-0.03
19	T	Methylene Chloride	1.421	1.250	12.0	81	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.354	-4.4	85	-0.02
21	T	Trichlorotrifluoroethane	1.171	1.055	9.9	79	0.00
22	T	Carbon Disulfide	5.030	4.592	8.7	81	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.974	5.1	83	-0.01
24	T	1,1-Dichloroethane	2.514	2.417	3.9	84	-0.02
25	T	Methyl tert-Butyl Ether	4.378	4.248	3.0	84	0.00
26	T	Vinyl Acetate	0.403	0.414	-2.7	83	-0.03
27	T	2-Butanone (MEK)	0.986	0.977	0.9	84	-0.03
28	T	cis-1,2-Dichloroethene	1.960	1.856	5.3	83	-0.01
29	T	Diisopropyl Ether	1.239	1.196	3.5	83	-0.01
30	T	Ethyl Acetate	0.546	0.542	0.7	84	-0.03
31	T	n-Hexane	2.855	2.627	8.0	82	-0.01
32	T	Chloroform	2.206	2.031	7.9	82	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.635	-5.3	88	-0.02
34	T	Tetrahydrofuran (THF)	0.961	0.905	5.8	85	-0.01
35	T	Ethyl tert-Butyl Ether	1.821	1.755	3.6	82	-0.01
36	T	1,2-Dichloroethane	1.798	1.708	5.0	83	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	87	-0.01
38	T	1,1,1-Trichloroethane	0.451	0.412	8.6	82	-0.01

EM 4/7/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\07\
Data File : 04071201.D
Acq On : 7 Apr 2012 2:23
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 07 07:01:39 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.194	4.9	83	-0.02
40	T	1-Butanol	0.323	0.356	-10.2	92	-0.05
41	T	Benzene	1.258	1.097	12.8	82	-0.02
42	T	Carbon Tetrachloride	0.352	0.326	7.4	80	-0.01
43	T	Cyclohexane	0.539	0.482	10.6	83	-0.02
44	T	tert-Amyl Methyl Ether	0.939	0.875	6.8	82	-0.02
45	T	1,2-Dichloropropane	0.334	0.303	9.3	83	-0.02
46	T	Bromodichloromethane	0.384	0.357	7.0	82	-0.01
47	T	Trichloroethene	0.355	0.302	14.9	80	-0.02
48	T	1,4-Dioxane	0.260	0.238	8.5	84	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.423	8.6	84	-0.01
50	T	Methyl Methacrylate	0.141	0.134	5.0	82	-0.03
51	T	n-Heptane	0.361	0.336	6.9	84	-0.02
52	T	cis-1,3-Dichloropropene	0.502	0.476	5.2	82	-0.01
53	T	4-Methyl-2-pentanone	0.305	0.298	2.3	85	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.429	1.8	82	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.268	8.2	81	-0.02
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	87	0.00
57	S	Toluene-d8 (SS2)	2.306	2.271	1.5	86	0.00
58	T	Toluene	2.793	2.427	13.1	82	-0.01
59	T	2-Hexanone	1.490	1.418	4.8	87	-0.02
60	T	Dibromochloromethane	0.638	0.594	6.9	80	-0.01
61	T	1,2-Dibromoethane	0.688	0.609	11.5	80	-0.01
62	T	n-Butyl Acetate	1.839	1.752	4.7	86	-0.02
63	T	n-Octane	0.645	0.620	3.9	88	-0.01
64	T	Tetrachloroethene	0.848	0.702	17.2	78	0.00
65	T	Chlorobenzene	1.780	1.527	14.2	81	0.00
66	T	Ethylbenzene	3.030	2.719	10.3	83	0.00
67	T	m- & p-Xylenes	2.419	2.179	9.9	83	-0.02
68	T	Bromoform	0.568	0.540	4.9	79	-0.01
69	T	Styrene	1.881	1.741	7.4	84	-0.01
70	T	o-Xylene	2.550	2.268	11.1	83	-0.01
71	T	n-Nonane	1.681	1.549	7.9	84	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.053	9.2	82	-0.02
73	S	Bromofluorobenzene (SS3)	0.777	0.774	0.4	87	0.00
74	T	Cumene	3.299	2.975	9.8	86	-0.01
75	T	alpha-Pinene	1.611	1.486	7.8	82	-0.01
76	T	n-Propylbenzene	4.039	3.560	11.9	82	-0.01

EM 4/7/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\07\
Data File : 04071201.D
Acq On : 7 Apr 2012 2:23
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 07 07:01:39 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.844	11.3	83	-0.01
78	T	4-Ethyltoluene	3.133	2.708	13.6	79	-0.02
79	T	1,3,5-Trimethylbenzene	2.600	2.285	12.1	82	-0.01
80	T	alpha-Methylstyrene	1.436	1.322	7.9	82	-0.01
81	T	2-Ethyltoluene	3.254	2.841	12.7	81	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.354	11.6	81	-0.02
83	T	n-Decane	1.699	1.553	8.6	83	-0.02
84	T	Benzyl Chloride	1.948	2.052	-5.3	87	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.281	20.3	79	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.304	20.9	79	-0.02
87	T	sec-Butylbenzene	3.571	3.140	12.1	82	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.145	11.5	82	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.401	10.8	81	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.260	17.7	79	-0.01
91	T	d-Limonene	1.067	1.048	1.8	85	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.480	7.2	80	-0.01
93	T	n-Undecane	1.678	1.570	6.4	84	-0.01
94	T	1,2,4-Trichlorobenzene	1.122	0.972	13.4	79	-0.01
95	T	Naphthalene	3.881	3.485	10.2	81	-0.01
96	T	n-Dodecane	1.613	1.578	2.2	87	0.00
97	T	Hexachlorobutadiene	0.704	0.592	15.9	78	0.00
98	T	Cyclohexanone	0.986	0.996	-1.0	90	-0.02
99	T	tert-Butylbenzene	2.723	2.389	12.3	82	-0.02
100	T	n-Butylbenzene	2.817	2.452	13.0	81	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

EM 4/7/12

Response Factor Report MS07

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
1)	I	Bromochloromethan	ISTD										
2)	T	Dichlorodifluorom	3.784	3.527	3.467	3.822	3.279	2.986	2.875	3.155	2.920	3.313	10.83
3)	T	Chloromethane		1.470	0.956	1.190	0.904	0.778	0.569	0.897	0.827	0.949	28.81
4)	T	Vinyl Chloride	2.802	2.749	2.588	3.044	2.597	2.406	2.314	2.588	2.446	2.615	8.57
5)	T	Bromomethane	1.894	1.496	1.211	1.613	1.335	1.208	1.105	1.433	1.367	1.407	17.11
6)	T	Chloroethane	1.511	1.416	1.357	1.517	1.295	1.237	1.195	1.312	1.224	1.340	8.92
7)	T	Acetone				1.548	1.214	1.122	1.080	1.193	1.090	1.208	14.52
8)	T	Trichlorofluorome	3.051	2.887	2.831	3.145	2.692	2.565	2.447	2.691	2.536	2.761	8.59
9)	T	1,1-Dichloroethen	1.591	1.440	1.366	1.547	1.322	1.229	1.214	1.385	1.295	1.376	9.52
10)	T	Methylene Chlorid		2.134	1.795	1.866	1.536	1.426	1.404	1.494	1.411	1.633	16.43
11)	T	Trichlorotrifluor	1.408	1.325	1.295	1.376	1.169	1.081	1.062	1.170	1.097	1.220	10.87
12)	T	trans-1,2-Dichlor	1.972	1.710	1.589	1.762	1.505	1.406	1.393	1.512	1.439	1.588	12.18
13)	T	1,1-Dichloroethan	3.265	3.020	3.016	3.383	2.925	2.756	2.681	2.937	2.841	2.980	7.60
14)	T	Methyl tert-Butyl	5.168	4.740	4.762	5.045	4.335	4.137	4.166	4.690	4.471	4.613	7.90
15)	T	cis-1,2-Dichloroe	1.885	1.626	1.630	1.776	1.524	1.434	1.388	1.575	1.482	1.591	10.09
16)	T	Chloroform			3.041	3.257	2.586	2.390	2.280	2.524	2.374	2.636	14.03
17)	S	1,2-Dichloroethan	2.000	2.002	2.032	2.018	1.989	1.973	1.960	1.938	1.932	1.983	1.75
18)	T	1,2-Dichloroethan	2.582	2.460	2.375	2.604	2.222	2.090	1.988	2.222	2.094	2.293	9.73
19)	T	1,1,1-Trichloroet	2.587	2.431	2.340	2.573	2.191	2.059	2.007	2.278	2.150	2.291	9.18
20)	T	Benzene			7.536	7.534	6.055	5.665	5.395	5.903	5.468	6.222	14.88
21)	T	Carbon Tetrachlor	2.280	1.842	1.769	1.950	1.676	1.579	1.549	1.771	1.692	1.790	12.41
22)	I	1,4-Difluorobenze	ISTD										
23)	T	1,2-Dichloropropa	0.417	0.397	0.373	0.409	0.354	0.331	0.319	0.358	0.336	0.366	9.68
24)	T	Bromodichlorometh	0.491	0.464	0.436	0.489	0.420	0.398	0.394	0.447	0.416	0.439	8.26
25)	T	Trichloroethene	0.418	0.379	0.349	0.390	0.324	0.305	0.287	0.326	0.307	0.343	12.96
26)	T	1,4-Dioxane	0.324	0.290	0.270	0.278	0.242	0.231	0.227	0.258	0.243	0.263	11.99
27)	T	cis-1,3-Dichlorop	0.567	0.523	0.508	0.540	0.499	0.484	0.488	0.559	0.522	0.521	5.67
28)	T	trans-1,3-Dichlor	0.457	0.434	0.431	0.444	0.419	0.409	0.417	0.505	0.482	0.444	7.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
29)	T	1,1,2-Trichloroet	0.315	0.296	0.286	0.305	0.263	0.248	0.242	0.274	0.257	0.276	9.32
30)	S	Toluene-d8 (SS2)	1.053	1.071	1.054	1.047	1.051	1.052	1.071	1.060	1.049	1.056	0.84
31)	T	Toluene	1.782	1.541	1.420	1.485	1.269	1.198	1.177	1.307	1.186	1.374	14.76
32)	T	1,2-Dibromoethane	0.379	0.362	0.345	0.362	0.323	0.307	0.304	0.351	0.331	0.340	7.65
33)	T	Tetrachloroethene	0.423	0.394	0.371	0.400	0.341	0.320	0.311	0.347	0.326	0.359	11.03
34)	I	Chlorobenzene-d5	ISTD										
35)	T	Chlorobenzene	4.581	4.172	4.017	4.308	3.688	3.469	3.311	3.705	3.345	3.844	11.68
36)	T	Ethylbenzene	7.604	7.082	6.707	7.235	6.297	6.070	5.915	6.682	5.878	6.608	9.30
37)	T	m,p-Xylene	5.861	5.347	5.132	5.536	4.930	4.777	4.719	5.268	4.558	5.125	8.24
38)	T	o-Xylene	6.505	5.826	5.526	5.889	5.188	4.995	4.950	5.594	4.932	5.490	9.67
39)	T	1,1,2,2-Tetrachlo	2.655	2.674	2.710	2.646	2.437	2.371	2.298	2.761	2.498	2.561	6.40
40)	S	Bromofluorobenzen	1.712	1.701	1.695	1.697	1.683	1.680	1.670	1.642	1.593	1.675	2.20
41)	T	1,3-Dichlorobenze	3.304	3.261	3.222	3.204	2.835	2.719	2.608	3.138	2.846	3.015	8.71
42)	T	1,4-Dichlorobenze	3.470	3.303	3.208	3.208	2.803	2.671	2.579	3.174	2.891	3.034	10.13
43)	T	1,2-Dichlorobenze	3.271	3.123	3.112	3.026	2.662	2.536	2.418	3.053	2.772	2.886	10.31
44)	T	1,2,4-Trichlorobe	2.184	2.118	2.169	1.753	1.641	1.608	1.575	2.139	1.978	1.907	13.66
45)	T	Naphthalene	6.857	6.355	6.704	5.143	5.107	5.172	5.297	8.126	7.328	6.232	17.82
46)	T	Hexachlorobutadie	1.486	1.423	1.403	1.217	1.055	1.013	0.975	1.227	1.145	1.216	15.40

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_04\09\
Data File : 04091203.D
Acq On : 9 Apr 2012 7:01 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00163
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 09 08:15:00 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	82	0.00
2	T	Dichlorodifluoromethane (CF	3.313	2.539	23.4	63	0.00
3	T	Chloromethane	0.949	0.738	22.2	67	0.00
4	T	Vinyl Chloride	2.615	2.065	21.0	65	0.00
5	T	Bromomethane	1.407	1.190	15.4	73	0.00
6	T	Chloroethane	1.340	1.065	20.5	67	0.00
7	T	Acetone	1.208	1.043	13.7	70	0.00
8	T	Trichlorofluoromethane	2.761	2.169	21.4	66	0.00
9	T	1,1-Dichloroethene	1.376	1.147	16.6	71	0.00
10	T	Methylene Chloride	1.633	1.261	22.8	67	0.00
11	T	Trichlorotrifluoroethane	1.220	1.046	14.3	73	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.249	21.3	68	0.00
13	T	1,1-Dichloroethane	2.980	2.362	20.7	66	0.00
14	T	Methyl tert-Butyl Ether	4.613	3.609	21.8	68	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.330	16.4	71	0.00
16	T	Chloroform	2.636	2.237	15.1	71	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.917	3.3	79	0.00
18	T	1,2-Dichloroethane	2.293	1.706	25.6	63	0.00
19	T	1,1,1-Trichloroethane	2.291	1.879	18.0	70	0.00
20	T	Benzene	6.222	5.361	13.8	72	0.00
21	T	Carbon Tetrachloride	1.790	1.425	20.4	69	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
23	T	1,2-Dichloropropane	0.366	0.268	26.8	67	0.00
24	T	Bromodichloromethane	0.439	0.322	26.7	68	0.00
25	T	Trichloroethene	0.343	0.255	25.7	70	0.00
26	T	1,4-Dioxane	0.263	0.198	24.7	73	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.396	24.0	70	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.343	22.7	72	0.00
29	T	1,1,2-Trichloroethane	0.276	0.207	25.0	70	0.00
30	S	Toluene-d8 (SS2)	1.056	1.179	-11.6	99	0.00
31	T	Toluene	1.374	1.051	23.5	73	0.00
32	T	1,2-Dibromoethane	0.340	0.264	22.4	72	0.00
33	T	Tetrachloroethene	0.359	0.287	20.1	75	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	85	0.00
35	T	Chlorobenzene	3.844	3.219	16.3	75	0.00
36	T	Ethylbenzene	6.608	5.416	18.0	74	0.00
37	T	m,p-Xylene	5.125	4.308	15.9	75	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_04\09\
Data File : 04091203.D
Acq On : 9 Apr 2012 7:01 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00163
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 09 08:15:00 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	4.561	16.9	75	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.098	18.1	74	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.861	-11.1	95	0.00
41	T	1,3-Dichlorobenzene	3.015	2.704	10.3	82	0.00
42	T	1,4-Dichlorobenzene	3.034	2.684	11.5	82	0.00
43	T	1,2-Dichlorobenzene	2.886	2.603	9.8	84	0.00
44	T	1,2,4-Trichlorobenzene	1.907	1.808	5.2	94	0.00
45	T	Naphthalene	6.232	6.283	-0.8	105	0.00
46	T	Hexachlorobutadiene	1.216	1.083	10.9	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

KR 4/9/12

LABORATORY REPORT

April 18, 2012

Christopher Cote
Montana DEQ
1100 N. Last Chance Gulch
Helena, MT 59601

RE: Background Indoor Air Study

Dear Christopher:

Enclosed are the results of the samples submitted to our laboratory on April 4, 2012. For your reference, these analyses have been assigned our service request number P1201319.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-11-2; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA015272011-1; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Kate Aguilera
Project Manager

Client: Montana DEQ CAS Project No: P1201319
Project: Background Indoor Air Study

CASE NARRATIVE

The samples were received intact under chain of custody on April 4, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009.

Volatile Organic Compound Analysis

The samples were also analyzed in scan and SIM mode for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

DETAIL SUMMARY REPORT

Client: Montana DEQ
Service Request: P1201319
Project ID: Background Indoor Air Study

Date Received: 4/4/2012
Time Received: 09:50

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	2nd Pi (psig)	2nd Pf (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC Cans	TO-15 - VOC SIM
50-2F-032512	P1201319-001	Air	3/25/2012	09:08	AC01225	-5.46	3.75	-3.36	2.06	X	X	X
49-1F-032712	P1201319-002	Air	3/27/2012	07:30	AC01223	-2.77	3.75			X	X	X
38-1F-032812	P1201319-003	Air	3/28/2012	07:20	AC00993	-3.55	3.63			X	X	X
39-1F-032812	P1201319-004	Air	3/28/2012	09:03	AC01628	-2.36	3.62			X	X	X
40-1F-032812	P1201319-005	Air	3/28/2012	10:11	AC00588	-4.22	3.74			X	X	X
55-1F-032812	P1201319-006	Air	3/28/2012	10:15	AS00131	-3.45	3.63			X	X	X
41-1F-032912	P1201319-007	Air	3/29/2012	11:13	AC01819	-3.37	3.65			X	X	X
48-1F-032912	P1201319-008	Air	3/29/2012	11:51	AC00142	-5.15	3.70			X	X	X
43-1F-032912	P1201319-009	Air	3/29/2012	14:05	AC00603	-4.54	3.74			X	X	X
45-1F-032912	P1201319-010	Air	3/29/2012	14:55	AC01626	-1.65	3.69			X	X	X
42-1F-032912	P1201319-011	Air	3/29/2012	16:09	AS00144	-2.74	3.58			X	X	X
44-1F-032912	P1201319-012	Air	3/29/2012	16:57	AC01183	-3.92	3.76			X	X	X
46-1F-033012	P1201319-013	Air	3/30/2012	18:00	AC00810	-4.91	3.67			X	X	X
47-1F-033112	P1201319-014	Air	3/31/2012	08:17	AC01122	-5.26	3.76			X	X	X

Columbia Analytical Services

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P1201319

Company Name & Address (Reporting Information)
Montana Department of Environmental Quality
PO Box 200901
1100 N. Last Chance Gulch
Helena, MT 59620-0901

Project Name: Background Indoor Air Study

Project Number: —

Project Manager: Chris Cote

P.O. # / Billing Information
Reference as: Background Indoor Air Study
Bill to: Chris Cote - MDEQ

Phone: (406) 841-5078 Fax: (406) 841-5050

Email Address for Result Reporting: ccote2@mt.gov; Martichb@cdm.com

Sampler (Print & Sign): Chris Cote, Nick Sovner, Steve Opp

CAS Contact: Nicole Pannone

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15	Analysis Method: TO-15 SIM	Analysis Method: MA-APH	Comments e.g. Actual Preservative or specific instructions
50-2F-032512	1-5.54	03-25-12	0908	AC01225	FCA00151	-27.75"	-10.0	17.75	X	X	X	Analyze
49-1F-032712	2-2.85	03-27-12	0730	AC01223	FCA00200	-27.5	-6.0	21.5	X	X	X	Project
38-1F-032812	3-3.65	03-28-12	0720	AC00993	FCA00518	-26.0	-6.0	20.0	X	X	X	Specific
39-1F-032812	4-2.45	03-28-12	0903	AC01628	FCA00053	-27.0	-4.0	23.0	X	X	X	List of
40-1F-032812	5-4.31	03-28-12	1011	AC00588	FCA00093	-24.5	-4.5	20.0	X	X	X	Compounds
55-1F-032812	6-3.52	03-28-12	1015	AS00131	FCA00468	-27.5	-6.5	21.0	X	X	X	to Project
41-1F-032912	7-3.48	03-29-12	1113	AC01819	FCA00471	-25.0	-4.0	21.0	X	X	X	Specific
48-1F-032912	8-5.24	03-29-12	1151	AC00142	FCA00487	-28.5	-10.0	18.5	X	X	X	Reporting
43-1F-032912	9-4.66	03-29-12	1405	AC00603	FCA00476	-27.0	-9.0	18.0	X	X	X	limits
45-1F-032912	10-1.75	03-29-12	1455	AC01626	FCA00192	-26.0	-1.0	25.0	X	X	X	—
42-1F-032912	11-2.82	03-29-12	1609	AS00144	FCA00086	-29.0	-6.0	23.0	X	X	X	Digital Pressure
44-1F-032912	12-4.00	03-29-12	1657	AC01183	FCA00378	-28.5	-8.0	20.5	X	X	X	gauge included
46-1F-033012	13-5.01	03-30-12	1800	AC00810	FCA00383	-27.0	-9.0	18.0	X	X	X	in shipment
47-1F-033112	14-5.37	03-31-12	0817	AC01122	FCA00214	-28.5	-10.5	18.0	X	X	X	

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) X
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: CSV + Excel format

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
(Chris Cote)	04-03-12	15:00		4/4/12	0950
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____ °C

COC AIR REV 3-11

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Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201319

Project: Background Indoor Air Study

Sample(s) received on: 4/4/12 Date opened: 4/4/12 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201319-001.01	6.0 L Ambient Can					
P1201319-002.01	6.0 L Ambient Can					
P1201319-003.01	6.0 L Ambient Can					
P1201319-004.01	6.0 L Ambient Can					
P1201319-005.01	6.0 L Ambient Can					
P1201319-006.01	6.0 L Silonite Can					
P1201319-007.01	6.0 L Ambient Can					
P1201319-008.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201319

Project: Background Indoor Air Study

Sample(s) received on: 4/4/12 Date opened: 4/4/12 by: MZAMORA

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201319-009.01	6.0 L Ambient Can					
P1201319-010.01	6.0 L Ambient Can					
P1201319-011.01	6.0 L Silonite Can					
P1201319-012.01	6.0 L Ambient Can					
P1201319-013.01	6.0 L Ambient Can					
P1201319-014.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **50-2F-032512** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-001

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01225

Initial Pressure (psig): -5.46 Final Pressure (psig): 3.75

Canister Dilution Factor: 2.00

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**460**	40	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**590**	20	
C_9 - C_{10} Aromatic Hydrocarbons	**47**	10	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **49-1F-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-002

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01223

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.77 Final Pressure (psig): 3.75

Canister Dilution Factor: 1.55

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**120**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**200**	16	
C_9 - C_{10} Aromatic Hydrocarbons	**8.6**	7.8	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **38-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-003

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00993

Date Collected: 3/28/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.55 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.64

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**50**	33	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**100**	16	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **39-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-004

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01628

Date Collected: 3/28/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.48

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**110**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**29**	15	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **40-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-005

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00588

Initial Pressure (psig): -4.22 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.76

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	35	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**30**	18	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.8	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **55-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-006

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00131

Initial Pressure (psig): -3.45 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.63

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	33	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**19**	16	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **41-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-007

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01819

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.37 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.62

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**120**	32	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**69**	16	
C_9 - C_{10} Aromatic Hydrocarbons	**12**	8.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **48-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-008

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00142

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.15 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.93

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**170**	39	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**81**	19	
C_9 - C_{10} Aromatic Hydrocarbons	**22**	9.7	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **43-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-009

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00603

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.54 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.81

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**90**	36	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**79**	18	
C_9 - C_{10} Aromatic Hydrocarbons	**9.1**	9.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **45-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-010

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01626

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.65 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.41

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**79**	28	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**56**	14	
C_9 - C_{10} Aromatic Hydrocarbons	**9.5**	7.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **42-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-011

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00144

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.74 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.53

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**31**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**26**	15	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.7	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **44-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-012

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01183

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.92 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.71

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	34	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**24**	17	
C_9 - C_{10} Aromatic Hydrocarbons	ND	8.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **46-1F-033012** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-013

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00810

Initial Pressure (psig): -4.91 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.88

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**200**	38	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**32**	19	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **47-1F-033112**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-014

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01122

Date Collected: 3/31/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**66**	39	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**43**	20	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.8	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-MB

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**19.7**	**80**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**22.7**	**91**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**43.2**	**89**	70-130	

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**22.3**	**91**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**26.0**	**104**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**48.8**	**101**	70-130	

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **47-1F-033112** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-014DUP

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/31/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01122

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

Compound	Sample Result µg/m³	Duplicate Sample Result µg/m³	Average µg/m³	% RPD	RPD Limit	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	66.1	63.7	64.9	**4**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	42.9	37.9	40.4	**12**	30	
C_9 - C_{10} Aromatic Hydrocarbons	ND	ND	-	**-**	30	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **50-2F-032512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01225

Date Collected: 3/25/12
Date Received: 4/4/12
Date Analyzed: 4/7/12 & 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -5.46 Final Pressure (psig): 3.75

Canister Dilution Factor: 2.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**21**	1.0	**12**	0.58	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	1.0	**0.36**	0.20	
74-87-3	Chloromethane	ND	1.0	ND	0.48	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.0	ND	0.14	
106-99-0	1,3-Butadiene	ND	1.0	ND	0.45	
74-83-9	Bromomethane	ND	1.0	ND	0.26	
75-00-3	Chloroethane	ND	1.0	ND	0.38	
64-17-5	Ethanol	**1,500**	100	**810**	53	**D**
75-05-8	Acetonitrile	ND	1.0	ND	0.60	
107-02-8	Acrolein	ND	4.0	ND	1.7	
67-64-1	Acetone	**66**	10	**28**	4.2	
75-69-4	Trichlorofluoromethane	ND	1.0	ND	0.18	
67-63-0	2-Propanol (Isopropyl Alcohol)	**98**	2.0	**40**	0.81	
107-13-1	Acrylonitrile	ND	1.0	ND	0.46	
75-35-4	1,1-Dichloroethene	ND	1.0	ND	0.25	
75-09-2	Methylene Chloride	ND	1.0	ND	0.29	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.0	ND	0.32	
76-13-1	Trichlorotrifluoroethane	ND	1.0	ND	0.13	
75-15-0	Carbon Disulfide	ND	10	ND	3.2	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ND	0.25	
75-34-3	1,1-Dichloroethane	ND	1.0	ND	0.25	
1634-04-4	Methyl tert-Butyl Ether	ND	1.0	ND	0.28	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **50-2F-032512** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-001

Test Code: EPA TO-15 Date Collected: 3/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01225

Initial Pressure (psig): -5.46 Final Pressure (psig): 3.75

Canister Dilution Factor: 2.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	10	ND	2.8	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ND	0.25	
78-93-3	2-Butanone (MEK)	**11**	10	**3.6**	3.4	
141-78-6	Ethyl Acetate	**4.6**	2.0	**1.3**	0.56	
110-54-3	n-Hexane	**19**	1.0	**5.5**	0.28	
67-66-3	Chloroform	**1.1**	1.0	**0.22**	0.20	
109-99-9	Tetrahydrofuran (THF)	**3.6**	1.0	**1.2**	0.34	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ND	0.18	
56-23-5	Carbon Tetrachloride	ND	1.0	ND	0.16	
110-82-7	Cyclohexane	**3.9**	2.0	**1.1**	0.58	
78-87-5	1,2-Dichloropropane	ND	1.0	ND	0.22	
75-27-4	Bromodichloromethane	ND	1.0	ND	0.15	
123-91-1	1,4-Dioxane	ND	1.0	ND	0.28	
80-62-6	Methyl Methacrylate	ND	2.0	ND	0.49	
142-82-5	n-Heptane	**7.6**	1.0	**1.9**	0.24	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ND	0.22	
108-10-1	4-Methyl-2-pentanone	**1.0**	1.0	**0.25**	0.24	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ND	0.22	
108-88-3	Toluene	**51**	1.0	**14**	0.27	
591-78-6	2-Hexanone	**1.4**	1.0	**0.33**	0.24	
124-48-1	Dibromochloromethane	ND	1.0	ND	0.12	
106-93-4	1,2-Dibromoethane	ND	1.0	ND	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **50-2F-032512** CAS Sample ID: P1201319-001
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01225

Initial Pressure (psig): -5.46 Final Pressure (psig): 3.75

Canister Dilution Factor: 2.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.3**	1.0	**0.28**	0.21	
111-65-9	n-Octane	**2.3**	1.0	**0.50**	0.21	
108-90-7	Chlorobenzene	ND	1.0	ND	0.22	
179601-23-1	m,p-Xylenes	**29**	2.0	**6.6**	0.46	
75-25-2	Bromoform	ND	1.0	ND	0.097	
100-42-5	Styrene	ND	1.0	ND	0.23	
95-47-6	o-Xylene	**8.8**	1.0	**2.0**	0.23	
111-84-2	n-Nonane	**39**	1.0	**7.4**	0.19	
98-82-8	Cumene	ND	1.0	ND	0.20	
80-56-8	alpha-Pinene	**30**	1.0	**5.4**	0.18	
103-65-1	n-Propylbenzene	**1.5**	1.0	**0.31**	0.20	
622-96-8	4-Ethyltoluene	**3.0**	1.0	**0.61**	0.20	
108-67-8	1,3,5-Trimethylbenzene	**2.8**	1.0	**0.58**	0.20	
95-63-6	1,2,4-Trimethylbenzene	**10**	1.0	**2.0**	0.20	
100-44-7	Benzyl Chloride	ND	1.0	ND	0.19	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ND	0.17	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ND	0.17	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ND	0.17	
5989-27-5	d-Limonene	**11**	1.0	**2.0**	0.18	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	ND	0.10	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	1.0	ND	0.094	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **49-1F-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01223

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.77 Final Pressure (psig): 3.75

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**6.2**	0.78	**3.6**	0.45	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.78	**0.37**	0.16	
74-87-3	Chloromethane	ND	0.78	ND	0.38	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.78	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.78	ND	0.35	
74-83-9	Bromomethane	ND	0.78	ND	0.20	
75-00-3	Chloroethane	ND	0.78	ND	0.29	
64-17-5	Ethanol	**580**	7.8	**310**	4.1	
75-05-8	Acetonitrile	**3.2**	0.78	**1.9**	0.46	
107-02-8	Acrolein	ND	3.1	ND	1.4	
67-64-1	Acetone	**52**	7.8	**22**	3.3	
75-69-4	Trichlorofluoromethane	**1.0**	0.78	**0.18**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**32**	1.6	**13**	0.63	
107-13-1	Acrylonitrile	ND	0.78	ND	0.36	
75-35-4	1,1-Dichloroethene	ND	0.78	ND	0.20	
75-09-2	Methylene Chloride	ND	0.78	ND	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.78	ND	0.25	
76-13-1	Trichlorotrifluoroethane	ND	0.78	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.78	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.78	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.78	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **49-1F-032712** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-002

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01223

Initial Pressure (psig): -2.77 Final Pressure (psig): 3.75

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.8	ND	2.2	
156-59-2	cis-1,2-Dichloroethene	ND	0.78	ND	0.20	
78-93-3	2-Butanone (MEK)	**11**	7.8	**3.7**	2.6	
141-78-6	Ethyl Acetate	**25**	1.6	**6.9**	0.43	
110-54-3	n-Hexane	**2.2**	0.78	**0.63**	0.22	
67-66-3	Chloroform	ND	0.78	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	**4.8**	0.78	**1.6**	0.26	
71-55-6	1,1,1-Trichloroethane	ND	0.78	ND	0.14	
56-23-5	Carbon Tetrachloride	ND	0.78	ND	0.12	
110-82-7	Cyclohexane	ND	1.6	ND	0.45	
78-87-5	1,2-Dichloropropane	ND	0.78	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.78	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.78	ND	0.22	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.38	
142-82-5	n-Heptane	**1.1**	0.78	**0.27**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.78	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.78	ND	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.78	ND	0.17	
108-88-3	Toluene	**8.1**	0.78	**2.2**	0.21	
591-78-6	2-Hexanone	**0.78**	0.78	**0.19**	0.19	
124-48-1	Dibromochloromethane	ND	0.78	ND	0.091	
106-93-4	1,2-Dibromoethane	ND	0.78	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **49-1F-032712** CAS Sample ID: P1201319-002
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01223

Initial Pressure (psig): -2.77 Final Pressure (psig): 3.75

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**5.4**	0.78	**1.1**	0.16	
111-65-9	n-Octane	**0.82**	0.78	**0.18**	0.17	
108-90-7	Chlorobenzene	ND	0.78	ND	0.17	
179601-23-1	m,p-Xylenes	**4.0**	1.6	**0.91**	0.36	
75-25-2	Bromoform	ND	0.78	ND	0.075	
100-42-5	Styrene	**1.3**	0.78	**0.31**	0.18	
95-47-6	o-Xylene	**1.2**	0.78	**0.27**	0.18	
111-84-2	n-Nonane	**2.5**	0.78	**0.48**	0.15	
98-82-8	Cumene	ND	0.78	ND	0.16	
80-56-8	alpha-Pinene	**5.1**	0.78	**0.92**	0.14	
103-65-1	n-Propylbenzene	ND	0.78	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.78	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.78	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.2**	0.78	**0.25**	0.16	
100-44-7	Benzyl Chloride	ND	0.78	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.78	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.78	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.78	ND	0.13	
5989-27-5	d-Limonene	**16**	0.78	**2.8**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.78	ND	0.080	
120-82-1	1,2,4-Trichlorobenzene	ND	0.78	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.78	ND	0.073	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **38-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00993

Date Collected: 3/28/12
Date Received: 4/4/12
Date Analyzed: 4/7/12 & 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -3.55 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.2**	0.82	**1.9**	0.48	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.82	**0.37**	0.17	
74-87-3	Chloromethane	ND	0.82	ND	0.40	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.82	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.82	ND	0.37	
74-83-9	Bromomethane	ND	0.82	ND	0.21	
75-00-3	Chloroethane	ND	0.82	ND	0.31	
64-17-5	Ethanol	**1,100**	82	**580**	44	**D**
75-05-8	Acetonitrile	ND	0.82	ND	0.49	
107-02-8	Acrolein	ND	3.3	ND	1.4	
67-64-1	Acetone	**45**	8.2	**19**	3.5	
75-69-4	Trichlorofluoromethane	**1.3**	0.82	**0.23**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**30**	1.6	**12**	0.67	
107-13-1	Acrylonitrile	ND	0.82	ND	0.38	
75-35-4	1,1-Dichloroethene	ND	0.82	ND	0.21	
75-09-2	Methylene Chloride	ND	0.82	ND	0.24	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.82	ND	0.26	
76-13-1	Trichlorotrifluoroethane	ND	0.82	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.2	ND	2.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.82	ND	0.21	
75-34-3	1,1-Dichloroethane	ND	0.82	ND	0.20	
1634-04-4	Methyl tert-Butyl Ether	ND	0.82	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **38-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-003

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC00993

Initial Pressure (psig): -3.55 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.2	ND	2.3	
156-59-2	cis-1,2-Dichloroethene	ND	0.82	ND	0.21	
78-93-3	2-Butanone (MEK)	**16**	8.2	**5.3**	2.8	
141-78-6	Ethyl Acetate	**6.0**	1.6	**1.7**	0.46	
110-54-3	n-Hexane	ND	0.82	ND	0.23	
67-66-3	Chloroform	**2.1**	0.82	**0.44**	0.17	
109-99-9	Tetrahydrofuran (THF)	**4.5**	0.82	**1.5**	0.28	
71-55-6	1,1,1-Trichloroethane	ND	0.82	ND	0.15	
56-23-5	Carbon Tetrachloride	ND	0.82	ND	0.13	
110-82-7	Cyclohexane	ND	1.6	ND	0.48	
78-87-5	1,2-Dichloropropane	ND	0.82	ND	0.18	
75-27-4	Bromodichloromethane	ND	0.82	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.82	ND	0.23	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.40	
142-82-5	n-Heptane	ND	0.82	ND	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	0.82	ND	0.18	
108-10-1	4-Methyl-2-pentanone	**2.3**	0.82	**0.56**	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	0.82	ND	0.18	
108-88-3	Toluene	**3.2**	0.82	**0.86**	0.22	
591-78-6	2-Hexanone	ND	0.82	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.82	ND	0.096	
106-93-4	1,2-Dibromoethane	ND	0.82	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **38-1F-032812** CAS Sample ID: P1201319-003
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC00993

Initial Pressure (psig): -3.55 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.3**	0.82	**0.27**	0.17	
111-65-9	n-Octane	ND	0.82	ND	0.18	
108-90-7	Chlorobenzene	ND	0.82	ND	0.18	
179601-23-1	m,p-Xylenes	ND	1.6	ND	0.38	
75-25-2	Bromoform	ND	0.82	ND	0.079	
100-42-5	Styrene	ND	0.82	ND	0.19	
95-47-6	o-Xylene	ND	0.82	ND	0.19	
111-84-2	n-Nonane	ND	0.82	ND	0.16	
98-82-8	Cumene	ND	0.82	ND	0.17	
80-56-8	alpha-Pinene	**5.2**	0.82	**0.93**	0.15	
103-65-1	n-Propylbenzene	ND	0.82	ND	0.17	
622-96-8	4-Ethyltoluene	ND	0.82	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.82	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	ND	0.82	ND	0.17	
100-44-7	Benzyl Chloride	ND	0.82	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.82	ND	0.14	
106-46-7	1,4-Dichlorobenzene	**27**	0.82	**4.5**	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.82	ND	0.14	
5989-27-5	d-Limonene	**13**	0.82	**2.4**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.82	ND	0.085	
120-82-1	1,2,4-Trichlorobenzene	ND	0.82	ND	0.11	
87-68-3	Hexachlorobutadiene	ND	0.82	ND	0.077	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **39-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01628

Date Collected: 3/28/12
Date Received: 4/4/12
Date Analyzed: 4/7/12 & 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**6.4**	0.74	**3.7**	0.43	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.74	**0.36**	0.15	
74-87-3	Chloromethane	ND	0.74	ND	0.36	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.74	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.74	ND	0.33	
74-83-9	Bromomethane	ND	0.74	ND	0.19	
75-00-3	Chloroethane	ND	0.74	ND	0.28	
64-17-5	Ethanol	**1,900**	74	**1,000**	39	**D**
75-05-8	Acetonitrile	ND	0.74	ND	0.44	
107-02-8	Acrolein	ND	3.0	ND	1.3	
67-64-1	Acetone	**60**	7.4	**25**	3.1	
75-69-4	Trichlorofluoromethane	**0.89**	0.74	**0.16**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**46**	1.5	**19**	0.60	
107-13-1	Acrylonitrile	ND	0.74	ND	0.34	
75-35-4	1,1-Dichloroethene	ND	0.74	ND	0.19	
75-09-2	Methylene Chloride	ND	0.74	ND	0.21	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.74	ND	0.24	
76-13-1	Trichlorotrifluoroethane	ND	0.74	ND	0.097	
75-15-0	Carbon Disulfide	ND	7.4	ND	2.4	
156-60-5	trans-1,2-Dichloroethene	ND	0.74	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.74	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.74	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **39-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-004

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01628

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	**14**	7.4	**4.1**	2.1	
156-59-2	cis-1,2-Dichloroethene	ND	0.74	ND	0.19	
78-93-3	2-Butanone (MEK)	ND	7.4	ND	2.5	
141-78-6	Ethyl Acetate	**22**	1.5	**6.0**	0.41	
110-54-3	n-Hexane	**8.3**	0.74	**2.3**	0.21	
67-66-3	Chloroform	ND	0.74	ND	0.15	
109-99-9	Tetrahydrofuran (THF)	ND	0.74	ND	0.25	
71-55-6	1,1,1-Trichloroethane	ND	0.74	ND	0.14	
56-23-5	Carbon Tetrachloride	ND	0.74	ND	0.12	
110-82-7	Cyclohexane	**1.9**	1.5	**0.55**	0.43	
78-87-5	1,2-Dichloropropane	ND	0.74	ND	0.16	
75-27-4	Bromodichloromethane	ND	0.74	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.74	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.36	
142-82-5	n-Heptane	**3.4**	0.74	**0.84**	0.18	
10061-01-5	cis-1,3-Dichloropropene	ND	0.74	ND	0.16	
108-10-1	4-Methyl-2-pentanone	ND	0.74	ND	0.18	
10061-02-6	trans-1,3-Dichloropropene	ND	0.74	ND	0.16	
108-88-3	Toluene	**5.7**	0.74	**1.5**	0.20	
591-78-6	2-Hexanone	ND	0.74	ND	0.18	
124-48-1	Dibromochloromethane	ND	0.74	ND	0.087	
106-93-4	1,2-Dibromoethane	ND	0.74	ND	0.096	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **39-1F-032812** CAS Sample ID: P1201319-004
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01628

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**2.4**	0.74	**0.51**	0.16	
111-65-9	n-Octane	**1.2**	0.74	**0.26**	0.16	
108-90-7	Chlorobenzene	ND	0.74	ND	0.16	
179601-23-1	m,p-Xylenes	ND	1.5	ND	0.34	
75-25-2	Bromoform	ND	0.74	ND	0.072	
100-42-5	Styrene	ND	0.74	ND	0.17	
95-47-6	o-Xylene	ND	0.74	ND	0.17	
111-84-2	n-Nonane	**1.4**	0.74	**0.27**	0.14	
98-82-8	Cumene	ND	0.74	ND	0.15	
80-56-8	alpha-Pinene	**0.83**	0.74	**0.15**	0.13	
103-65-1	n-Propylbenzene	ND	0.74	ND	0.15	
622-96-8	4-Ethyltoluene	ND	0.74	ND	0.15	
108-67-8	1,3,5-Trimethylbenzene	ND	0.74	ND	0.15	
95-63-6	1,2,4-Trimethylbenzene	ND	0.74	ND	0.15	
100-44-7	Benzyl Chloride	ND	0.74	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.74	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.74	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.74	ND	0.12	
5989-27-5	d-Limonene	**13**	0.74	**2.4**	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.74	ND	0.077	
120-82-1	1,2,4-Trichlorobenzene	ND	0.74	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.74	ND	0.069	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **40-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00588

Date Collected: 3/28/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.22 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.76

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.0**	0.88	**1.8**	0.51	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	0.88	**0.38**	0.18	
74-87-3	Chloromethane	ND	0.88	ND	0.43	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.88	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.88	ND	0.40	
74-83-9	Bromomethane	ND	0.88	ND	0.23	
75-00-3	Chloroethane	ND	0.88	ND	0.33	
64-17-5	Ethanol	**180**	8.8	**94**	4.7	
75-05-8	Acetonitrile	ND	0.88	ND	0.52	
107-02-8	Acrolein	ND	3.5	ND	1.5	
67-64-1	Acetone	**41**	8.8	**17**	3.7	
75-69-4	Trichlorofluoromethane	**1.9**	0.88	**0.33**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**15**	1.8	**6.2**	0.72	
107-13-1	Acrylonitrile	ND	0.88	ND	0.41	
75-35-4	1,1-Dichloroethene	ND	0.88	ND	0.22	
75-09-2	Methylene Chloride	**0.90**	0.88	**0.26**	0.25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.88	ND	0.28	
76-13-1	Trichlorotrifluoroethane	ND	0.88	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.8	ND	2.8	
156-60-5	trans-1,2-Dichloroethene	ND	0.88	ND	0.22	
75-34-3	1,1-Dichloroethane	ND	0.88	ND	0.22	
1634-04-4	Methyl tert-Butyl Ether	ND	0.88	ND	0.24	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **40-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-005

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00588

Initial Pressure (psig): -4.22 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.76

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.8	ND	2.5	
156-59-2	cis-1,2-Dichloroethene	ND	0.88	ND	0.22	
78-93-3	2-Butanone (MEK)	ND	8.8	ND	3.0	
141-78-6	Ethyl Acetate	ND	1.8	ND	0.49	
110-54-3	n-Hexane	ND	0.88	ND	0.25	
67-66-3	Chloroform	ND	0.88	ND	0.18	
109-99-9	Tetrahydrofuran (THF)	ND	0.88	ND	0.30	
71-55-6	1,1,1-Trichloroethane	ND	0.88	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.88	ND	0.14	
110-82-7	Cyclohexane	ND	1.8	ND	0.51	
78-87-5	1,2-Dichloropropane	ND	0.88	ND	0.19	
75-27-4	Bromodichloromethane	ND	0.88	ND	0.13	
123-91-1	1,4-Dioxane	ND	0.88	ND	0.24	
80-62-6	Methyl Methacrylate	ND	1.8	ND	0.43	
142-82-5	n-Heptane	ND	0.88	ND	0.21	
10061-01-5	cis-1,3-Dichloropropene	ND	0.88	ND	0.19	
108-10-1	4-Methyl-2-pentanone	ND	0.88	ND	0.21	
10061-02-6	trans-1,3-Dichloropropene	ND	0.88	ND	0.19	
108-88-3	Toluene	**1.7**	0.88	**0.44**	0.23	
591-78-6	2-Hexanone	ND	0.88	ND	0.21	
124-48-1	Dibromochloromethane	ND	0.88	ND	0.10	
106-93-4	1,2-Dibromoethane	ND	0.88	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **40-1F-032812** CAS Sample ID: P1201319-005
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00588

Initial Pressure (psig): -4.22 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.76

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.88	ND	0.19	
111-65-9	n-Octane	ND	0.88	ND	0.19	
108-90-7	Chlorobenzene	ND	0.88	ND	0.19	
179601-23-1	m,p-Xylenes	ND	1.8	ND	0.41	
75-25-2	Bromoform	ND	0.88	ND	0.085	
100-42-5	Styrene	ND	0.88	ND	0.21	
95-47-6	o-Xylene	ND	0.88	ND	0.20	
111-84-2	n-Nonane	ND	0.88	ND	0.17	
98-82-8	Cumene	ND	0.88	ND	0.18	
80-56-8	alpha-Pinene	**23**	0.88	**4.1**	0.16	
103-65-1	n-Propylbenzene	ND	0.88	ND	0.18	
622-96-8	4-Ethyltoluene	ND	0.88	ND	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.88	ND	0.18	
95-63-6	1,2,4-Trimethylbenzene	ND	0.88	ND	0.18	
100-44-7	Benzyl Chloride	ND	0.88	ND	0.17	
541-73-1	1,3-Dichlorobenzene	ND	0.88	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.88	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.88	ND	0.15	
5989-27-5	d-Limonene	**7.3**	0.88	**1.3**	0.16	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.88	ND	0.091	
120-82-1	1,2,4-Trichlorobenzene	ND	0.88	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.88	ND	0.083	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **55-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00131

Date Collected: 3/28/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.45 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.8**	0.82	**2.2**	0.47	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.9**	0.82	**0.39**	0.16	
74-87-3	Chloromethane	ND	0.82	ND	0.39	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.82	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.82	ND	0.37	
74-83-9	Bromomethane	ND	0.82	ND	0.21	
75-00-3	Chloroethane	ND	0.82	ND	0.31	
64-17-5	Ethanol	**180**	8.2	**98**	4.3	
75-05-8	Acetonitrile	ND	0.82	ND	0.49	
107-02-8	Acrolein	ND	3.3	ND	1.4	
67-64-1	Acetone	**38**	8.2	**16**	3.4	
75-69-4	Trichlorofluoromethane	**1.9**	0.82	**0.33**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**17**	1.6	**7.0**	0.66	
107-13-1	Acrylonitrile	ND	0.82	ND	0.38	
75-35-4	1,1-Dichloroethene	ND	0.82	ND	0.21	
75-09-2	Methylene Chloride	**0.86**	0.82	**0.25**	0.23	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.82	ND	0.26	
76-13-1	Trichlorotrifluoroethane	**0.82**	0.82	**0.11**	0.11	
75-15-0	Carbon Disulfide	ND	8.2	ND	2.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.82	ND	0.21	
75-34-3	1,1-Dichloroethane	ND	0.82	ND	0.20	
1634-04-4	Methyl tert-Butyl Ether	ND	0.82	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **55-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-006

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00131

Initial Pressure (psig): -3.45 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.2	ND	2.3	
156-59-2	cis-1,2-Dichloroethene	ND	0.82	ND	0.21	
78-93-3	2-Butanone (MEK)	ND	8.2	ND	2.8	
141-78-6	Ethyl Acetate	ND	1.6	ND	0.45	
110-54-3	n-Hexane	ND	0.82	ND	0.23	
67-66-3	Chloroform	ND	0.82	ND	0.17	
109-99-9	Tetrahydrofuran (THF)	ND	0.82	ND	0.28	
71-55-6	1,1,1-Trichloroethane	ND	0.82	ND	0.15	
56-23-5	Carbon Tetrachloride	ND	0.82	ND	0.13	
110-82-7	Cyclohexane	ND	1.6	ND	0.47	
78-87-5	1,2-Dichloropropane	ND	0.82	ND	0.18	
75-27-4	Bromodichloromethane	ND	0.82	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.82	ND	0.23	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.40	
142-82-5	n-Heptane	ND	0.82	ND	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	0.82	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	0.82	ND	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	0.82	ND	0.18	
108-88-3	Toluene	**1.6**	0.82	**0.43**	0.22	
591-78-6	2-Hexanone	ND	0.82	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.82	ND	0.096	
106-93-4	1,2-Dibromoethane	ND	0.82	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **55-1F-032812** CAS Sample ID: P1201319-006
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00131

Initial Pressure (psig): -3.45 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**0.83**	0.82	**0.17**	0.17	
111-65-9	n-Octane	ND	0.82	ND	0.17	
108-90-7	Chlorobenzene	ND	0.82	ND	0.18	
179601-23-1	m,p-Xylenes	ND	1.6	ND	0.38	
75-25-2	Bromoform	ND	0.82	ND	0.079	
100-42-5	Styrene	ND	0.82	ND	0.19	
95-47-6	o-Xylene	ND	0.82	ND	0.19	
111-84-2	n-Nonane	ND	0.82	ND	0.16	
98-82-8	Cumene	ND	0.82	ND	0.17	
80-56-8	alpha-Pinene	**25**	0.82	**4.6**	0.15	
103-65-1	n-Propylbenzene	ND	0.82	ND	0.17	
622-96-8	4-Ethyltoluene	ND	0.82	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.82	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	ND	0.82	ND	0.17	
100-44-7	Benzyl Chloride	ND	0.82	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.82	ND	0.14	
106-46-7	1,4-Dichlorobenzene	ND	0.82	ND	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.82	ND	0.14	
5989-27-5	d-Limonene	**9.4**	0.82	**1.7**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.82	ND	0.084	
120-82-1	1,2,4-Trichlorobenzene	ND	0.82	ND	0.11	
87-68-3	Hexachlorobutadiene	ND	0.82	ND	0.076	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **41-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-007

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01819

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/7/12 & 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -3.37 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**18**	0.81	**10**	0.47	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.81	**0.37**	0.16	
74-87-3	Chloromethane	ND	0.81	ND	0.39	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.81	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.81	ND	0.37	
74-83-9	Bromomethane	ND	0.81	ND	0.21	
75-00-3	Chloroethane	ND	0.81	ND	0.31	
64-17-5	Ethanol	**1,400**	81	**760**	43	**D**
75-05-8	Acetonitrile	ND	0.81	ND	0.48	
107-02-8	Acrolein	ND	3.2	ND	1.4	
67-64-1	Acetone	**52**	8.1	**22**	3.4	
75-69-4	Trichlorofluoromethane	**1.7**	0.81	**0.31**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**120**	1.6	**49**	0.66	
107-13-1	Acrylonitrile	ND	0.81	ND	0.37	
75-35-4	1,1-Dichloroethene	ND	0.81	ND	0.20	
75-09-2	Methylene Chloride	**0.87**	0.81	**0.25**	0.23	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.81	ND	0.26	
76-13-1	Trichlorotrifluoroethane	ND	0.81	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.1	ND	2.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.81	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.81	ND	0.20	
1634-04-4	Methyl tert-Butyl Ether	ND	0.81	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **41-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-007

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01819

Initial Pressure (psig): -3.37 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.1	ND	2.3	
156-59-2	cis-1,2-Dichloroethene	ND	0.81	ND	0.20	
78-93-3	2-Butanone (MEK)	ND	8.1	ND	2.7	
141-78-6	Ethyl Acetate	**5.7**	1.6	**1.6**	0.45	
110-54-3	n-Hexane	**1.7**	0.81	**0.47**	0.23	
67-66-3	Chloroform	**2.7**	0.81	**0.55**	0.17	
109-99-9	Tetrahydrofuran (THF)	ND	0.81	ND	0.27	
71-55-6	1,1,1-Trichloroethane	ND	0.81	ND	0.15	
56-23-5	Carbon Tetrachloride	ND	0.81	ND	0.13	
110-82-7	Cyclohexane	ND	1.6	ND	0.47	
78-87-5	1,2-Dichloropropane	ND	0.81	ND	0.18	
75-27-4	Bromodichloromethane	ND	0.81	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.81	ND	0.22	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.40	
142-82-5	n-Heptane	**1.1**	0.81	**0.27**	0.20	
10061-01-5	cis-1,3-Dichloropropene	ND	0.81	ND	0.18	
108-10-1	4-Methyl-2-pentanone	**2.1**	0.81	**0.52**	0.20	
10061-02-6	trans-1,3-Dichloropropene	ND	0.81	ND	0.18	
108-88-3	Toluene	**12**	0.81	**3.1**	0.22	
591-78-6	2-Hexanone	ND	0.81	ND	0.20	
124-48-1	Dibromochloromethane	ND	0.81	ND	0.095	
106-93-4	1,2-Dibromoethane	ND	0.81	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **41-1F-032912** CAS Sample ID: P1201319-007
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01819

Initial Pressure (psig): -3.37 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**0.85**	0.81	**0.18**	0.17	
111-65-9	n-Octane	**0.93**	0.81	**0.20**	0.17	
108-90-7	Chlorobenzene	ND	0.81	ND	0.18	
179601-23-1	m,p-Xylenes	**4.3**	1.6	**0.99**	0.37	
75-25-2	Bromoform	ND	0.81	ND	0.078	
100-42-5	Styrene	ND	0.81	ND	0.19	
95-47-6	o-Xylene	**1.6**	0.81	**0.38**	0.19	
111-84-2	n-Nonane	**1.9**	0.81	**0.36**	0.15	
98-82-8	Cumene	ND	0.81	ND	0.16	
80-56-8	alpha-Pinene	**2.9**	0.81	**0.52**	0.15	
103-65-1	n-Propylbenzene	ND	0.81	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.81	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.81	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**2.0**	0.81	**0.42**	0.16	
100-44-7	Benzyl Chloride	ND	0.81	ND	0.16	
541-73-1	1,3-Dichlorobenzene	ND	0.81	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.81	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.81	ND	0.13	
5989-27-5	d-Limonene	**9.8**	0.81	**1.8**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.81	ND	0.084	
120-82-1	1,2,4-Trichlorobenzene	ND	0.81	ND	0.11	
87-68-3	Hexachlorobutadiene	ND	0.81	ND	0.076	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **48-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-008

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00142

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/7/12 & 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -5.15 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.93

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**6.2**	0.97	**3.6**	0.56	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.4**	0.97	**0.28**	0.20	
74-87-3	Chloromethane	ND	0.97	ND	0.47	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.97	ND	0.14	
106-99-0	1,3-Butadiene	ND	0.97	ND	0.44	
74-83-9	Bromomethane	ND	0.97	ND	0.25	
75-00-3	Chloroethane	ND	0.97	ND	0.37	
64-17-5	Ethanol	**3,200**	97	**1,700**	51	**D**
75-05-8	Acetonitrile	ND	0.97	ND	0.58	
107-02-8	Acrolein	**4.5**	3.9	**1.9**	1.7	
67-64-1	Acetone	**110**	9.7	**45**	4.1	
75-69-4	Trichlorofluoromethane	**1.5**	0.97	**0.27**	0.17	
67-63-0	2-Propanol (Isopropyl Alcohol)	**56**	1.9	**23**	0.79	
107-13-1	Acrylonitrile	ND	0.97	ND	0.44	
75-35-4	1,1-Dichloroethene	ND	0.97	ND	0.24	
75-09-2	Methylene Chloride	ND	0.97	ND	0.28	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.97	ND	0.31	
76-13-1	Trichlorotrifluoroethane	ND	0.97	ND	0.13	
75-15-0	Carbon Disulfide	ND	9.7	ND	3.1	
156-60-5	trans-1,2-Dichloroethene	ND	0.97	ND	0.24	
75-34-3	1,1-Dichloroethane	ND	0.97	ND	0.24	
1634-04-4	Methyl tert-Butyl Ether	ND	0.97	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **48-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-008

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC00142

Initial Pressure (psig): -5.15 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.93

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.7	ND	2.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.97	ND	0.24	
78-93-3	2-Butanone (MEK)	ND	9.7	ND	3.3	
141-78-6	Ethyl Acetate	**13**	1.9	**3.6**	0.54	
110-54-3	n-Hexane	**6.7**	0.97	**1.9**	0.27	
67-66-3	Chloroform	ND	0.97	ND	0.20	
109-99-9	Tetrahydrofuran (THF)	ND	0.97	ND	0.33	
71-55-6	1,1,1-Trichloroethane	ND	0.97	ND	0.18	
56-23-5	Carbon Tetrachloride	ND	0.97	ND	0.15	
110-82-7	Cyclohexane	ND	1.9	ND	0.56	
78-87-5	1,2-Dichloropropane	ND	0.97	ND	0.21	
75-27-4	Bromodichloromethane	ND	0.97	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.97	ND	0.27	
80-62-6	Methyl Methacrylate	ND	1.9	ND	0.47	
142-82-5	n-Heptane	**2.6**	0.97	**0.63**	0.24	
10061-01-5	cis-1,3-Dichloropropene	ND	0.97	ND	0.21	
108-10-1	4-Methyl-2-pentanone	**2.2**	0.97	**0.54**	0.24	
10061-02-6	trans-1,3-Dichloropropene	ND	0.97	ND	0.21	
108-88-3	Toluene	**31**	0.97	**8.2**	0.26	
591-78-6	2-Hexanone	ND	0.97	ND	0.24	
124-48-1	Dibromochloromethane	ND	0.97	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.97	ND	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **48-1F-032912** CAS Sample ID: P1201319-008
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC00142

Initial Pressure (psig): -5.15 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.93

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.3**	0.97	**0.28**	0.20	
111-65-9	n-Octane	**1.2**	0.97	**0.27**	0.21	
108-90-7	Chlorobenzene	ND	0.97	ND	0.21	
179601-23-1	m,p-Xylenes	**18**	1.9	**4.1**	0.44	
75-25-2	Bromoform	ND	0.97	ND	0.093	
100-42-5	Styrene	ND	0.97	ND	0.23	
95-47-6	o-Xylene	**6.0**	0.97	**1.4**	0.22	
111-84-2	n-Nonane	ND	0.97	ND	0.18	
98-82-8	Cumene	ND	0.97	ND	0.20	
80-56-8	alpha-Pinene	**2.0**	0.97	**0.35**	0.17	
103-65-1	n-Propylbenzene	**0.97**	0.97	**0.20**	0.20	
622-96-8	4-Ethyltoluene	**1.8**	0.97	**0.38**	0.20	
108-67-8	1,3,5-Trimethylbenzene	**1.5**	0.97	**0.31**	0.20	
95-63-6	1,2,4-Trimethylbenzene	**4.9**	0.97	**1.0**	0.20	
100-44-7	Benzyl Chloride	ND	0.97	ND	0.19	
541-73-1	1,3-Dichlorobenzene	ND	0.97	ND	0.16	
106-46-7	1,4-Dichlorobenzene	ND	0.97	ND	0.16	
95-50-1	1,2-Dichlorobenzene	ND	0.97	ND	0.16	
5989-27-5	d-Limonene	**23**	0.97	**4.2**	0.17	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.97	ND	0.10	
120-82-1	1,2,4-Trichlorobenzene	ND	0.97	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.97	ND	0.091	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **43-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-009

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00603

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.54 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**6.3**	0.91	**3.7**	0.53	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.7**	0.91	**0.34**	0.18	
74-87-3	Chloromethane	ND	0.91	ND	0.44	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.91	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.91	ND	0.41	
74-83-9	Bromomethane	ND	0.91	ND	0.23	
75-00-3	Chloroethane	ND	0.91	ND	0.34	
64-17-5	Ethanol	**380**	9.1	**200**	4.8	
75-05-8	Acetonitrile	ND	0.91	ND	0.54	
107-02-8	Acrolein	ND	3.6	ND	1.6	
67-64-1	Acetone	**94**	9.1	**39**	3.8	
75-69-4	Trichlorofluoromethane	**1.8**	0.91	**0.33**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**20**	1.8	**8.2**	0.74	
107-13-1	Acrylonitrile	ND	0.91	ND	0.42	
75-35-4	1,1-Dichloroethene	ND	0.91	ND	0.23	
75-09-2	Methylene Chloride	**100**	0.91	**29**	0.26	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.91	ND	0.29	
76-13-1	Trichlorotrifluoroethane	ND	0.91	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.1	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	ND	0.91	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.91	ND	0.22	
1634-04-4	Methyl tert-Butyl Ether	ND	0.91	ND	0.25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **43-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-009

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00603

Initial Pressure (psig): -4.54 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.1	ND	2.6	
156-59-2	cis-1,2-Dichloroethene	ND	0.91	ND	0.23	
78-93-3	2-Butanone (MEK)	**13**	9.1	**4.5**	3.1	
141-78-6	Ethyl Acetate	**2.3**	1.8	**0.63**	0.50	
110-54-3	n-Hexane	ND	0.91	ND	0.26	
67-66-3	Chloroform	ND	0.91	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	**4.6**	0.91	**1.6**	0.31	
71-55-6	1,1,1-Trichloroethane	ND	0.91	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.91	ND	0.14	
110-82-7	Cyclohexane	ND	1.8	ND	0.53	
78-87-5	1,2-Dichloropropane	ND	0.91	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.91	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.91	ND	0.25	
80-62-6	Methyl Methacrylate	ND	1.8	ND	0.44	
142-82-5	n-Heptane	**2.2**	0.91	**0.54**	0.22	
10061-01-5	cis-1,3-Dichloropropene	ND	0.91	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.91	ND	0.22	
10061-02-6	trans-1,3-Dichloropropene	ND	0.91	ND	0.20	
108-88-3	Toluene	**20**	0.91	**5.3**	0.24	
591-78-6	2-Hexanone	ND	0.91	ND	0.22	
124-48-1	Dibromochloromethane	ND	0.91	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.91	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **43-1F-032912** CAS Sample ID: P1201319-009
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00603

Initial Pressure (psig): -4.54 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**2.1**	0.91	**0.44**	0.19	
111-65-9	n-Octane	ND	0.91	ND	0.19	
108-90-7	Chlorobenzene	ND	0.91	ND	0.20	
179601-23-1	m,p-Xylenes	**5.8**	1.8	**1.3**	0.42	
75-25-2	Bromoform	ND	0.91	ND	0.088	
100-42-5	Styrene	ND	0.91	ND	0.21	
95-47-6	o-Xylene	**1.7**	0.91	**0.39**	0.21	
111-84-2	n-Nonane	**2.6**	0.91	**0.49**	0.17	
98-82-8	Cumene	ND	0.91	ND	0.18	
80-56-8	alpha-Pinene	**4.2**	0.91	**0.76**	0.16	
103-65-1	n-Propylbenzene	ND	0.91	ND	0.18	
622-96-8	4-Ethyltoluene	ND	0.91	ND	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.91	ND	0.18	
95-63-6	1,2,4-Trimethylbenzene	**1.2**	0.91	**0.23**	0.18	
100-44-7	Benzyl Chloride	ND	0.91	ND	0.17	
541-73-1	1,3-Dichlorobenzene	ND	0.91	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.91	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.91	ND	0.15	
5989-27-5	d-Limonene	**12**	0.91	**2.1**	0.16	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.91	ND	0.094	
120-82-1	1,2,4-Trichlorobenzene	ND	0.91	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.91	ND	0.085	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **45-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-010

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01626

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.65 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**3.4**	0.71	**2.0**	0.41	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.71	**0.42**	0.14	
74-87-3	Chloromethane	**0.78**	0.71	**0.38**	0.34	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.71	ND	0.10	
106-99-0	1,3-Butadiene	ND	0.71	ND	0.32	
74-83-9	Bromomethane	ND	0.71	ND	0.18	
75-00-3	Chloroethane	ND	0.71	ND	0.27	
64-17-5	Ethanol	**480**	7.1	**250**	3.7	
75-05-8	Acetonitrile	ND	0.71	ND	0.42	
107-02-8	Acrolein	ND	2.8	ND	1.2	
67-64-1	Acetone	**43**	7.1	**18**	3.0	
75-69-4	Trichlorofluoromethane	**1.1**	0.71	**0.19**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**21**	1.4	**8.7**	0.57	
107-13-1	Acrylonitrile	ND	0.71	ND	0.32	
75-35-4	1,1-Dichloroethene	ND	0.71	ND	0.18	
75-09-2	Methylene Chloride	ND	0.71	ND	0.20	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.71	ND	0.23	
76-13-1	Trichlorotrifluoroethane	ND	0.71	ND	0.092	
75-15-0	Carbon Disulfide	ND	7.1	ND	2.3	
156-60-5	trans-1,2-Dichloroethene	ND	0.71	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.71	ND	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	0.71	ND	0.20	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **45-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-010

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01626

Initial Pressure (psig): -1.65 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.1	ND	2.0	
156-59-2	cis-1,2-Dichloroethene	ND	0.71	ND	0.18	
78-93-3	2-Butanone (MEK)	ND	7.1	ND	2.4	
141-78-6	Ethyl Acetate	**11**	1.4	**3.0**	0.39	
110-54-3	n-Hexane	**0.92**	0.71	**0.26**	0.20	
67-66-3	Chloroform	ND	0.71	ND	0.14	
109-99-9	Tetrahydrofuran (THF)	**1.6**	0.71	**0.53**	0.24	
71-55-6	1,1,1-Trichloroethane	ND	0.71	ND	0.13	
56-23-5	Carbon Tetrachloride	ND	0.71	ND	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.41	
78-87-5	1,2-Dichloropropane	ND	0.71	ND	0.15	
75-27-4	Bromodichloromethane	ND	0.71	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.71	ND	0.20	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.34	
142-82-5	n-Heptane	**0.71**	0.71	**0.17**	0.17	
10061-01-5	cis-1,3-Dichloropropene	ND	0.71	ND	0.16	
108-10-1	4-Methyl-2-pentanone	ND	0.71	ND	0.17	
10061-02-6	trans-1,3-Dichloropropene	ND	0.71	ND	0.16	
108-88-3	Toluene	**9.3**	0.71	**2.5**	0.19	
591-78-6	2-Hexanone	**0.73**	0.71	**0.18**	0.17	
124-48-1	Dibromochloromethane	ND	0.71	ND	0.083	
106-93-4	1,2-Dibromoethane	ND	0.71	ND	0.092	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **45-1F-032912** CAS Sample ID: P1201319-010
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01626

Initial Pressure (psig): -1.65 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**3.5**	0.71	**0.73**	0.15	
111-65-9	n-Octane	ND	0.71	ND	0.15	
108-90-7	Chlorobenzene	ND	0.71	ND	0.15	
179601-23-1	m,p-Xylenes	**3.8**	1.4	**0.88**	0.32	
75-25-2	Bromoform	ND	0.71	ND	0.068	
100-42-5	Styrene	**1.2**	0.71	**0.28**	0.17	
95-47-6	o-Xylene	**1.3**	0.71	**0.30**	0.16	
111-84-2	n-Nonane	ND	0.71	ND	0.13	
98-82-8	Cumene	ND	0.71	ND	0.14	
80-56-8	alpha-Pinene	**3.4**	0.71	**0.61**	0.13	
103-65-1	n-Propylbenzene	ND	0.71	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.71	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.71	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	**1.8**	0.71	**0.37**	0.14	
100-44-7	Benzyl Chloride	ND	0.71	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.71	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.71	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.71	ND	0.12	
5989-27-5	d-Limonene	**13**	0.71	**2.4**	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.71	ND	0.073	
120-82-1	1,2,4-Trichlorobenzene	ND	0.71	ND	0.095	
87-68-3	Hexachlorobutadiene	ND	0.71	ND	0.066	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **42-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-011

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00144

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -2.74 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.77	ND	0.44	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.6**	0.77	**0.32**	0.15	
74-87-3	Chloromethane	ND	0.77	ND	0.37	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.77	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.77	ND	0.35	
74-83-9	Bromomethane	ND	0.77	ND	0.20	
75-00-3	Chloroethane	ND	0.77	ND	0.29	
64-17-5	Ethanol	**2,600**	150	**1,400**	81	**D**
75-05-8	Acetonitrile	ND	0.77	ND	0.46	
107-02-8	Acrolein	**4.8**	3.1	**2.1**	1.3	
67-64-1	Acetone	**44**	7.7	**19**	3.2	
75-69-4	Trichlorofluoromethane	**0.84**	0.77	**0.15**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**46**	1.5	**19**	0.62	
107-13-1	Acrylonitrile	ND	0.77	ND	0.35	
75-35-4	1,1-Dichloroethene	ND	0.77	ND	0.19	
75-09-2	Methylene Chloride	**1.1**	0.77	**0.33**	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.77	ND	0.24	
76-13-1	Trichlorotrifluoroethane	ND	0.77	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.7	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.77	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.77	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.77	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **42-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-011

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AS00144

Initial Pressure (psig): -2.74 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.7	ND	2.2	
156-59-2	cis-1,2-Dichloroethene	ND	0.77	ND	0.19	
78-93-3	2-Butanone (MEK)	ND	7.7	ND	2.6	
141-78-6	Ethyl Acetate	**6.3**	1.5	**1.8**	0.42	
110-54-3	n-Hexane	ND	0.77	ND	0.22	
67-66-3	Chloroform	ND	0.77	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.77	ND	0.26	
71-55-6	1,1,1-Trichloroethane	ND	0.77	ND	0.14	
56-23-5	Carbon Tetrachloride	ND	0.77	ND	0.12	
110-82-7	Cyclohexane	ND	1.5	ND	0.44	
78-87-5	1,2-Dichloropropane	ND	0.77	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.77	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.77	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.37	
142-82-5	n-Heptane	**1.1**	0.77	**0.28**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.77	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.77	ND	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.77	ND	0.17	
108-88-3	Toluene	**3.3**	0.77	**0.87**	0.20	
591-78-6	2-Hexanone	ND	0.77	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.77	ND	0.090	
106-93-4	1,2-Dibromoethane	ND	0.77	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **42-1F-032912** CAS Sample ID: P1201319-011
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AS00144

Initial Pressure (psig): -2.74 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**0.83**	0.77	**0.17**	0.16	
111-65-9	n-Octane	ND	0.77	ND	0.16	
108-90-7	Chlorobenzene	ND	0.77	ND	0.17	
179601-23-1	m,p-Xylenes	ND	1.5	ND	0.35	
75-25-2	Bromoform	ND	0.77	ND	0.074	
100-42-5	Styrene	ND	0.77	ND	0.18	
95-47-6	o-Xylene	ND	0.77	ND	0.18	
111-84-2	n-Nonane	ND	0.77	ND	0.15	
98-82-8	Cumene	ND	0.77	ND	0.16	
80-56-8	alpha-Pinene	**4.9**	0.77	**0.88**	0.14	
103-65-1	n-Propylbenzene	ND	0.77	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.77	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.77	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	ND	0.77	ND	0.16	
100-44-7	Benzyl Chloride	ND	0.77	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.77	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.77	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.77	ND	0.13	
5989-27-5	d-Limonene	**24**	0.77	**4.3**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.77	ND	0.079	
120-82-1	1,2,4-Trichlorobenzene	ND	0.77	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.77	ND	0.072	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **44-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-012

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01183

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -3.92 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.71

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**0.95**	0.86	**0.55**	0.50	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.86	**0.36**	0.17	
74-87-3	Chloromethane	ND	0.86	ND	0.41	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.86	ND	0.12	
106-99-0	1,3-Butadiene	ND	0.86	ND	0.39	
74-83-9	Bromomethane	ND	0.86	ND	0.22	
75-00-3	Chloroethane	ND	0.86	ND	0.32	
64-17-5	Ethanol	**1,400**	86	**740**	45	**D**
75-05-8	Acetonitrile	ND	0.86	ND	0.51	
107-02-8	Acrolein	ND	3.4	ND	1.5	
67-64-1	Acetone	**19**	8.6	**8.1**	3.6	
75-69-4	Trichlorofluoromethane	**1.0**	0.86	**0.18**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**4.0**	1.7	**1.6**	0.70	
107-13-1	Acrylonitrile	ND	0.86	ND	0.39	
75-35-4	1,1-Dichloroethene	ND	0.86	ND	0.22	
75-09-2	Methylene Chloride	ND	0.86	ND	0.25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.86	ND	0.27	
76-13-1	Trichlorotrifluoroethane	ND	0.86	ND	0.11	
75-15-0	Carbon Disulfide	ND	8.6	ND	2.7	
156-60-5	trans-1,2-Dichloroethene	ND	0.86	ND	0.22	
75-34-3	1,1-Dichloroethane	ND	0.86	ND	0.21	
1634-04-4	Methyl tert-Butyl Ether	ND	0.86	ND	0.24	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **44-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-012

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01183

Initial Pressure (psig): -3.92 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.71

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	8.6	ND	2.4	
156-59-2	cis-1,2-Dichloroethene	ND	0.86	ND	0.22	
78-93-3	2-Butanone (MEK)	ND	8.6	ND	2.9	
141-78-6	Ethyl Acetate	**4.5**	1.7	**1.2**	0.47	
110-54-3	n-Hexane	ND	0.86	ND	0.24	
67-66-3	Chloroform	ND	0.86	ND	0.18	
109-99-9	Tetrahydrofuran (THF)	ND	0.86	ND	0.29	
71-55-6	1,1,1-Trichloroethane	ND	0.86	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.86	ND	0.14	
110-82-7	Cyclohexane	ND	1.7	ND	0.50	
78-87-5	1,2-Dichloropropane	ND	0.86	ND	0.19	
75-27-4	Bromodichloromethane	ND	0.86	ND	0.13	
123-91-1	1,4-Dioxane	ND	0.86	ND	0.24	
80-62-6	Methyl Methacrylate	ND	1.7	ND	0.42	
142-82-5	n-Heptane	ND	0.86	ND	0.21	
10061-01-5	cis-1,3-Dichloropropene	ND	0.86	ND	0.19	
108-10-1	4-Methyl-2-pentanone	ND	0.86	ND	0.21	
10061-02-6	trans-1,3-Dichloropropene	ND	0.86	ND	0.19	
108-88-3	Toluene	**3.3**	0.86	**0.87**	0.23	
591-78-6	2-Hexanone	ND	0.86	ND	0.21	
124-48-1	Dibromochloromethane	ND	0.86	ND	0.10	
106-93-4	1,2-Dibromoethane	ND	0.86	ND	0.11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **44-1F-032912** CAS Sample ID: P1201319-012
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01183

Initial Pressure (psig): -3.92 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.71

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.86	ND	0.18	
111-65-9	n-Octane	ND	0.86	ND	0.18	
108-90-7	Chlorobenzene	ND	0.86	ND	0.19	
179601-23-1	m,p-Xylenes	**2.6**	1.7	**0.60**	0.39	
75-25-2	Bromoform	ND	0.86	ND	0.083	
100-42-5	Styrene	ND	0.86	ND	0.20	
95-47-6	o-Xylene	ND	0.86	ND	0.20	
111-84-2	n-Nonane	ND	0.86	ND	0.16	
98-82-8	Cumene	ND	0.86	ND	0.17	
80-56-8	alpha-Pinene	**0.99**	0.86	**0.18**	0.15	
103-65-1	n-Propylbenzene	ND	0.86	ND	0.17	
622-96-8	4-Ethyltoluene	ND	0.86	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.86	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	ND	0.86	ND	0.17	
100-44-7	Benzyl Chloride	ND	0.86	ND	0.17	
541-73-1	1,3-Dichlorobenzene	ND	0.86	ND	0.14	
106-46-7	1,4-Dichlorobenzene	ND	0.86	ND	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.86	ND	0.14	
5989-27-5	d-Limonene	**3.3**	0.86	**0.60**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.86	ND	0.088	
120-82-1	1,2,4-Trichlorobenzene	ND	0.86	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.86	ND	0.080	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **46-1F-033012**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-013

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00810

Date Collected: 3/30/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -4.91 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.88

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**7.4**	0.94	**4.3**	0.55	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.94	**0.36**	0.19	
74-87-3	Chloromethane	ND	0.94	ND	0.46	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.94	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.94	ND	0.43	
74-83-9	Bromomethane	ND	0.94	ND	0.24	
75-00-3	Chloroethane	ND	0.94	ND	0.36	
64-17-5	Ethanol	**3,700**	94	**2,000**	50	**D**
75-05-8	Acetonitrile	ND	0.94	ND	0.56	
107-02-8	Acrolein	ND	3.8	ND	1.6	
67-64-1	Acetone	**56**	9.4	**23**	4.0	
75-69-4	Trichlorofluoromethane	**1.1**	0.94	**0.19**	0.17	
67-63-0	2-Propanol (Isopropyl Alcohol)	**81**	1.9	**33**	0.77	
107-13-1	Acrylonitrile	ND	0.94	ND	0.43	
75-35-4	1,1-Dichloroethene	ND	0.94	ND	0.24	
75-09-2	Methylene Chloride	**1.3**	0.94	**0.37**	0.27	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.94	ND	0.30	
76-13-1	Trichlorotrifluoroethane	ND	0.94	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.4	ND	3.0	
156-60-5	trans-1,2-Dichloroethene	ND	0.94	ND	0.24	
75-34-3	1,1-Dichloroethane	ND	0.94	ND	0.23	
1634-04-4	Methyl tert-Butyl Ether	ND	0.94	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **46-1F-033012** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-013

Test Code: EPA TO-15 Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC00810

Initial Pressure (psig): -4.91 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.88

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.4	ND	2.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.94	ND	0.24	
78-93-3	2-Butanone (MEK)	ND	9.4	ND	3.2	
141-78-6	Ethyl Acetate	**13**	1.9	**3.7**	0.52	
110-54-3	n-Hexane	**2.2**	0.94	**0.64**	0.27	
67-66-3	Chloroform	**1.4**	0.94	**0.29**	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.94	ND	0.32	
71-55-6	1,1,1-Trichloroethane	ND	0.94	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.94	ND	0.15	
110-82-7	Cyclohexane	ND	1.9	ND	0.55	
78-87-5	1,2-Dichloropropane	ND	0.94	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.94	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.94	ND	0.26	
80-62-6	Methyl Methacrylate	ND	1.9	ND	0.46	
142-82-5	n-Heptane	**1.7**	0.94	**0.42**	0.23	
10061-01-5	cis-1,3-Dichloropropene	ND	0.94	ND	0.21	
108-10-1	4-Methyl-2-pentanone	ND	0.94	ND	0.23	
10061-02-6	trans-1,3-Dichloropropene	ND	0.94	ND	0.21	
108-88-3	Toluene	**130**	0.94	**34**	0.25	
591-78-6	2-Hexanone	ND	0.94	ND	0.23	
124-48-1	Dibromochloromethane	ND	0.94	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.94	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **46-1F-033012** CAS Sample ID: P1201319-013
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC00810

Initial Pressure (psig): -4.91 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.88

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**3.6**	0.94	**0.77**	0.20	
111-65-9	n-Octane	**12**	0.94	**2.7**	0.20	
108-90-7	Chlorobenzene	ND	0.94	ND	0.20	
179601-23-1	m,p-Xylenes	**2.0**	1.9	**0.47**	0.43	
75-25-2	Bromoform	ND	0.94	ND	0.091	
100-42-5	Styrene	ND	0.94	ND	0.22	
95-47-6	o-Xylene	ND	0.94	ND	0.22	
111-84-2	n-Nonane	**4.9**	0.94	**0.93**	0.18	
98-82-8	Cumene	ND	0.94	ND	0.19	
80-56-8	alpha-Pinene	**13**	0.94	**2.3**	0.17	
103-65-1	n-Propylbenzene	ND	0.94	ND	0.19	
622-96-8	4-Ethyltoluene	ND	0.94	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.94	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	0.94	ND	0.19	
100-44-7	Benzyl Chloride	ND	0.94	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.94	ND	0.16	
106-46-7	1,4-Dichlorobenzene	ND	0.94	ND	0.16	
95-50-1	1,2-Dichlorobenzene	ND	0.94	ND	0.16	
5989-27-5	d-Limonene	**15**	0.94	**2.7**	0.17	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.94	ND	0.097	
120-82-1	1,2,4-Trichlorobenzene	ND	0.94	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.94	ND	0.088	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **47-1F-033112**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-014

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01122

Date Collected: 3/31/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**2.0**	0.98	**1.2**	0.57	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.7**	0.98	**0.35**	0.20	
74-87-3	Chloromethane	ND	0.98	ND	0.47	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.98	ND	0.14	
106-99-0	1,3-Butadiene	ND	0.98	ND	0.44	
74-83-9	Bromomethane	ND	0.98	ND	0.25	
75-00-3	Chloroethane	ND	0.98	ND	0.37	
64-17-5	Ethanol	**710**	9.8	**380**	5.2	
75-05-8	Acetonitrile	ND	0.98	ND	0.58	
107-02-8	Acrolein	ND	3.9	ND	1.7	
67-64-1	Acetone	**33**	9.8	**14**	4.1	
75-69-4	Trichlorofluoromethane	ND	0.98	ND	0.17	
67-63-0	2-Propanol (Isopropyl Alcohol)	**13**	2.0	**5.4**	0.80	
107-13-1	Acrylonitrile	ND	0.98	ND	0.45	
75-35-4	1,1-Dichloroethene	ND	0.98	ND	0.25	
75-09-2	Methylene Chloride	ND	0.98	ND	0.28	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.98	ND	0.31	
76-13-1	Trichlorotrifluoroethane	ND	0.98	ND	0.13	
75-15-0	Carbon Disulfide	ND	9.8	ND	3.1	
156-60-5	trans-1,2-Dichloroethene	ND	0.98	ND	0.25	
75-34-3	1,1-Dichloroethane	ND	0.98	ND	0.24	
1634-04-4	Methyl tert-Butyl Ether	ND	0.98	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **47-1F-033112** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-014

Test Code: EPA TO-15 Date Collected: 3/31/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01122

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.8	ND	2.8	
156-59-2	cis-1,2-Dichloroethene	ND	0.98	ND	0.25	
78-93-3	2-Butanone (MEK)	ND	9.8	ND	3.3	
141-78-6	Ethyl Acetate	**3.9**	2.0	**1.1**	0.54	
110-54-3	n-Hexane	**1.5**	0.98	**0.44**	0.28	
67-66-3	Chloroform	ND	0.98	ND	0.20	
109-99-9	Tetrahydrofuran (THF)	**2.6**	0.98	**0.87**	0.33	
71-55-6	1,1,1-Trichloroethane	ND	0.98	ND	0.18	
56-23-5	Carbon Tetrachloride	ND	0.98	ND	0.16	
110-82-7	Cyclohexane	ND	2.0	ND	0.57	
78-87-5	1,2-Dichloropropane	ND	0.98	ND	0.21	
75-27-4	Bromodichloromethane	ND	0.98	ND	0.15	
123-91-1	1,4-Dioxane	ND	0.98	ND	0.27	
80-62-6	Methyl Methacrylate	ND	2.0	ND	0.48	
142-82-5	n-Heptane	ND	0.98	ND	0.24	
10061-01-5	cis-1,3-Dichloropropene	ND	0.98	ND	0.22	
108-10-1	4-Methyl-2-pentanone	ND	0.98	ND	0.24	
10061-02-6	trans-1,3-Dichloropropene	ND	0.98	ND	0.22	
108-88-3	Toluene	**5.6**	0.98	**1.5**	0.26	
591-78-6	2-Hexanone	ND	0.98	ND	0.24	
124-48-1	Dibromochloromethane	ND	0.98	ND	0.12	
106-93-4	1,2-Dibromoethane	ND	0.98	ND	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **47-1F-033112** CAS Sample ID: P1201319-014
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/31/12
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/4/12
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01122

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.2**	0.98	**0.26**	0.21	
111-65-9	n-Octane	ND	0.98	ND	0.21	
108-90-7	Chlorobenzene	ND	0.98	ND	0.21	
179601-23-1	m,p-Xylenes	**2.0**	2.0	**0.46**	0.45	
75-25-2	Bromoform	ND	0.98	ND	0.095	
100-42-5	Styrene	**1.2**	0.98	**0.28**	0.23	
95-47-6	o-Xylene	ND	0.98	ND	0.23	
111-84-2	n-Nonane	ND	0.98	ND	0.19	
98-82-8	Cumene	ND	0.98	ND	0.20	
80-56-8	alpha-Pinene	**5.0**	0.98	**0.90**	0.18	
103-65-1	n-Propylbenzene	ND	0.98	ND	0.20	
622-96-8	4-Ethyltoluene	ND	0.98	ND	0.20	
108-67-8	1,3,5-Trimethylbenzene	ND	0.98	ND	0.20	
95-63-6	1,2,4-Trimethylbenzene	ND	0.98	ND	0.20	
100-44-7	Benzyl Chloride	ND	0.98	ND	0.19	
541-73-1	1,3-Dichlorobenzene	ND	0.98	ND	0.16	
106-46-7	1,4-Dichlorobenzene	ND	0.98	ND	0.16	
95-50-1	1,2-Dichlorobenzene	ND	0.98	ND	0.16	
5989-27-5	d-Limonene	**11**	0.98	**2.0**	0.18	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.98	ND	0.10	
120-82-1	1,2,4-Trichlorobenzene	ND	0.98	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.98	ND	0.092	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **Method Blank** CAS Sample ID: P120407-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201319
Client Sample ID: **Method Blank** CAS Sample ID: P120409-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201319

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date(s) Collected: 3/25 - 3/31/12
Analyst: Lusine Hakobyan Date(s) Received: 4/4/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 4/7 - 4/9/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120407-MB	**91**	**96**	**102**	70-130	
Method Blank	P120409-MB	**93**	**99**	**101**	70-130	
Lab Control Sample	P120407-LCS	**90**	**97**	**103**	70-130	
Lab Control Sample	P120409-LCS	**91**	**99**	**102**	70-130	
50-2F-032512	P1201319-001	**92**	**98**	**99**	70-130	
49-1F-032712	P1201319-002	**92**	**98**	**100**	70-130	
38-1F-032812	P1201319-003	**93**	**97**	**100**	70-130	
39-1F-032812	P1201319-004	**92**	**98**	**102**	70-130	
40-1F-032812	P1201319-005	**93**	**97**	**100**	70-130	
55-1F-032812	P1201319-006	**93**	**98**	**99**	70-130	
41-1F-032912	P1201319-007	**93**	**99**	**99**	70-130	
48-1F-032912	P1201319-008	**93**	**96**	**99**	70-130	
43-1F-032912	P1201319-009	**92**	**98**	**100**	70-130	
45-1F-032912	P1201319-010	**93**	**99**	**100**	70-130	
42-1F-032912	P1201319-011	**90**	**99**	**103**	70-130	
44-1F-032912	P1201319-012	**90**	**99**	**102**	70-130	
46-1F-033012	P1201319-013	**90**	**101**	**103**	70-130	
47-1F-033112	P1201319-014	**90**	**98**	**101**	70-130	
47-1F-033112	P1201319-014DUP	**90**	**98**	**102**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**205**	**104**	59-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**145**	**74**	63-115	
74-87-3	Chloromethane	190	**175**	**92**	59-124	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**155**	**78**	65-113	
106-99-0	1,3-Butadiene	204	**193**	**95**	60-138	
74-83-9	Bromomethane	194	**158**	**81**	69-129	
75-00-3	Chloroethane	196	**177**	**90**	60-120	
64-17-5	Ethanol	928	**866**	**93**	58-121	
75-05-8	Acetonitrile	194	**185**	**95**	64-129	
107-02-8	Acrolein	198	**169**	**85**	54-127	
67-64-1	Acetone	1,010	**859**	**85**	59-114	
75-69-4	Trichlorofluoromethane	202	**143**	**71**	66-108	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**282**	**74**	50-113	
107-13-1	Acrylonitrile	198	**207**	**105**	72-135	
75-35-4	1,1-Dichloroethene	212	**182**	**86**	70-117	
75-09-2	Methylene Chloride	206	**170**	**83**	61-108	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**194**	**93**	70-131	
76-13-1	Trichlorotrifluoroethane	206	**172**	**83**	70-113	
75-15-0	Carbon Disulfide	208	**175**	**84**	65-112	
156-60-5	trans-1,2-Dichloroethene	196	**175**	**89**	71-119	
75-34-3	1,1-Dichloroethane	200	**173**	**87**	71-116	
1634-04-4	Methyl tert-Butyl Ether	198	**148**	**75**	67-116	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**805**	**85**	59-142	
156-59-2	cis-1,2-Dichloroethene	206	**175**	**85**	69-119	
78-93-3	2-Butanone (MEK)	206	**188**	**91**	68-125	
141-78-6	Ethyl Acetate	398	**337**	**85**	63-130	
110-54-3	n-Hexane	198	**151**	**76**	57-120	
67-66-3	Chloroform	214	**164**	**77**	69-111	
109-99-9	Tetrahydrofuran (THF)	202	**175**	**87**	57-123	
71-55-6	1,1,1-Trichloroethane	198	**155**	**78**	73-119	
56-23-5	Carbon Tetrachloride	202	**174**	**86**	74-129	
110-82-7	Cyclohexane	390	**314**	**81**	70-113	
78-87-5	1,2-Dichloropropane	198	**173**	**87**	69-118	
75-27-4	Bromodichloromethane	198	**161**	**81**	75-124	
123-91-1	1,4-Dioxane	200	**172**	**86**	71-123	
80-62-6	Methyl Methacrylate	400	**353**	**88**	72-127	
142-82-5	n-Heptane	196	**165**	**84**	68-120	
10061-01-5	cis-1,3-Dichloropropene	188	**168**	**89**	71-130	
108-10-1	4-Methyl-2-pentanone	204	**187**	**92**	69-130	
10061-02-6	trans-1,3-Dichloropropene	210	**194**	**92**	76-133	
108-88-3	Toluene	202	**157**	**78**	67-111	
591-78-6	2-Hexanone	222	**167**	**75**	70-123	
124-48-1	Dibromochloromethane	206	**171**	**83**	75-129	
106-93-4	1,2-Dibromoethane	200	**166**	**83**	73-122	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**177**	**80**	68-132	
111-65-9	n-Octane	200	**161**	**81**	68-116	
108-90-7	Chlorobenzene	202	**161**	**80**	69-113	
179601-23-1	m,p-Xylenes	392	**304**	**78**	70-116	
75-25-2	Bromoform	208	**169**	**81**	69-127	
100-42-5	Styrene	200	**166**	**83**	71-125	
95-47-6	o-Xylene	194	**152**	**78**	70-116	
111-84-2	n-Nonane	196	**150**	**77**	68-116	
98-82-8	Cumene	190	**149**	**78**	70-116	
80-56-8	alpha-Pinene	186	**147**	**79**	71-119	
103-65-1	n-Propylbenzene	192	**150**	**78**	71-119	
622-96-8	4-Ethyltoluene	198	**163**	**82**	71-119	
108-67-8	1,3,5-Trimethylbenzene	200	**158**	**79**	71-121	
95-63-6	1,2,4-Trimethylbenzene	194	**151**	**78**	73-127	
100-44-7	Benzyl Chloride	200	**166**	**83**	65-137	
541-73-1	1,3-Dichlorobenzene	200	**164**	**82**	68-123	
106-46-7	1,4-Dichlorobenzene	206	**162**	**79**	65-120	
95-50-1	1,2-Dichlorobenzene	198	**157**	**79**	67-121	
5989-27-5	d-Limonene	200	**151**	**76**	67-130	
96-12-8	1,2-Dibromo-3-chloropropane	196	**173**	**88**	72-133	
120-82-1	1,2,4-Trichlorobenzene	196	**178**	**91**	62-133	
87-68-3	Hexachlorobutadiene	202	**178**	**88**	60-128	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**226**	**114**	59-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**162**	**83**	63-115	
74-87-3	Chloromethane	190	**202**	**106**	59-124	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**173**	**87**	65-113	
106-99-0	1,3-Butadiene	204	**224**	**110**	60-138	
74-83-9	Bromomethane	194	**178**	**92**	69-129	
75-00-3	Chloroethane	196	**203**	**104**	60-120	
64-17-5	Ethanol	928	**1020**	**110**	58-121	
75-05-8	Acetonitrile	194	**217**	**112**	64-129	
107-02-8	Acrolein	198	**195**	**98**	54-127	
67-64-1	Acetone	1,010	**989**	**98**	59-114	
75-69-4	Trichlorofluoromethane	202	**160**	**79**	66-108	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**347**	**91**	50-113	
107-13-1	Acrylonitrile	198	**237**	**120**	72-135	
75-35-4	1,1-Dichloroethene	212	**202**	**95**	70-117	
75-09-2	Methylene Chloride	206	**189**	**92**	61-108	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**227**	**109**	70-131	
76-13-1	Trichlorotrifluoroethane	206	**192**	**93**	70-113	
75-15-0	Carbon Disulfide	208	**195**	**94**	65-112	
156-60-5	trans-1,2-Dichloroethene	196	**198**	**101**	71-119	
75-34-3	1,1-Dichloroethane	200	**196**	**98**	71-116	
1634-04-4	Methyl tert-Butyl Ether	198	**168**	**85**	67-116	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**908**	**95**	59-142	
156-59-2	cis-1,2-Dichloroethene	206	**197**	**96**	69-119	
78-93-3	2-Butanone (MEK)	206	**210**	**102**	68-125	
141-78-6	Ethyl Acetate	398	**383**	**96**	63-130	
110-54-3	n-Hexane	198	**173**	**87**	57-120	
67-66-3	Chloroform	214	**182**	**85**	69-111	
109-99-9	Tetrahydrofuran (THF)	202	**198**	**98**	57-123	
71-55-6	1,1,1-Trichloroethane	198	**171**	**86**	73-119	
56-23-5	Carbon Tetrachloride	202	**192**	**95**	74-129	
110-82-7	Cyclohexane	390	**350**	**90**	70-113	
78-87-5	1,2-Dichloropropane	198	**193**	**97**	69-118	
75-27-4	Bromodichloromethane	198	**178**	**90**	75-124	
123-91-1	1,4-Dioxane	200	**190**	**95**	71-123	
80-62-6	Methyl Methacrylate	400	**395**	**99**	72-127	
142-82-5	n-Heptane	196	**185**	**94**	68-120	
10061-01-5	cis-1,3-Dichloropropene	188	**189**	**101**	71-130	
108-10-1	4-Methyl-2-pentanone	204	**210**	**103**	69-130	
10061-02-6	trans-1,3-Dichloropropene	210	**217**	**103**	76-133	
108-88-3	Toluene	202	**178**	**88**	67-111	
591-78-6	2-Hexanone	222	**193**	**87**	70-123	
124-48-1	Dibromochloromethane	206	**193**	**94**	75-129	
106-93-4	1,2-Dibromoethane	200	**185**	**93**	73-122	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**205**	**93**	68-132	
111-65-9	n-Octane	200	**187**	**94**	68-116	
108-90-7	Chlorobenzene	202	**181**	**90**	69-113	
179601-23-1	m,p-Xylenes	392	**346**	**88**	70-116	
75-25-2	Bromoform	208	**193**	**93**	69-127	
100-42-5	Styrene	200	**188**	**94**	71-125	
95-47-6	o-Xylene	194	**173**	**89**	70-116	
111-84-2	n-Nonane	196	**175**	**89**	68-116	
98-82-8	Cumene	190	**170**	**89**	70-116	
80-56-8	alpha-Pinene	186	**166**	**89**	71-119	
103-65-1	n-Propylbenzene	192	**171**	**89**	71-119	
622-96-8	4-Ethyltoluene	198	**173**	**87**	71-119	
108-67-8	1,3,5-Trimethylbenzene	200	**181**	**91**	71-121	
95-63-6	1,2,4-Trimethylbenzene	194	**174**	**90**	73-127	
100-44-7	Benzyl Chloride	200	**190**	**95**	65-137	
541-73-1	1,3-Dichlorobenzene	200	**185**	**93**	68-123	
106-46-7	1,4-Dichlorobenzene	206	**183**	**89**	65-120	
95-50-1	1,2-Dichlorobenzene	198	**179**	**90**	67-121	
5989-27-5	d-Limonene	200	**171**	**86**	67-130	
96-12-8	1,2-Dibromo-3-chloropropane	196	**197**	**101**	72-133	
120-82-1	1,2,4-Trichlorobenzene	196	**202**	**103**	62-133	
87-68-3	Hexachlorobutadiene	202	**204**	**101**	60-128	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **47-1F-033112**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-014DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01122

Date Collected: 3/31/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Propene	2.00	1.16	1.87	1.09	1.935	**7**	25	
Dichlorodifluoromethane (CFC 12)	1.74	0.352	1.75	0.353	1.745	**0.6**	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	713	378	705	375	709	**1**	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	32.7	13.8	32.4	13.6	32.55	**0.9**	25	
Trichlorofluoromethane	ND	ND	ND	ND	-	-	25	
2-Propanol (Isopropyl Alcohol)	13.2	5.38	13.1	5.35	13.15	**0.8**	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **47-1F-033112**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-014DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01122

Date Collected: 3/31/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result **µg/m³**	Duplicate Sample Result **ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	3.88	1.08	3.82	1.06	3.85	**2**	25	
n-Hexane	1.55	0.439	1.55	0.440	1.55	**0**	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	2.55	0.866	2.50	0.848	2.525	**2**	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
Toluene	5.57	1.48	5.47	1.45	5.52	**2**	25	
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **47-1F-033112**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-014DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Lusine Hakobyan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01122

Date Collected: 3/31/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
n-Butyl Acetate	1.24	0.262	1.20	0.252	1.22	**3**	25	
n-Octane	ND	ND	ND	ND	-	-	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	1.98	0.455	1.96	0.452	1.97	**1**	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	1.20	0.282	1.18	0.278	1.19	**2**	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
n-Nonane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	5.00	0.897	4.95	0.888	4.975	**1**	25	
n-Propylbenzene	ND	ND	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	11.0	1.98	11.0	1.97	11	**0**	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **50-2F-032512**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-001

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01225

Date Collected: 3/25/12
Date Received: 4/4/12
Date Analyzed: 4/10/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.46 Final Pressure (psig): 3.75
Initial Pressure 2 (psig): -3.36 Final Pressure 2 (psig): 2.06

Canister Dilution Factor: 2.95

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.074	ND	0.029	
107-06-2	1,2-Dichloroethane	**0.12**	0.074	**0.030**	0.018	
71-43-2	Benzene	**15**	0.22	**4.6**	0.069	
79-01-6	Trichloroethene	ND	0.074	ND	0.014	
79-00-5	1,1,2-Trichloroethane	ND	0.30	ND	0.054	
127-18-4	Tetrachloroethene	**2.0**	0.074	**0.30**	0.011	
100-41-4	Ethylbenzene	**6.1**	0.30	**1.4**	0.068	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.074	ND	0.011	
91-20-3	Naphthalene	**1.9**	0.30	**0.37**	0.056	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **49-1F-032712** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-002

Test Code: EPA TO-15 SIM Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01223

Initial Pressure (psig): -2.77 Final Pressure (psig): 3.75

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.039	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.36**	0.039	**0.090**	0.0096	
71-43-2	Benzene	**3.1**	0.12	**0.96**	0.036	
79-01-6	Trichloroethene	**0.050**	0.039	**0.0093**	0.0072	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.028	
127-18-4	Tetrachloroethene	**0.097**	0.039	**0.014**	0.0057	
100-41-4	Ethylbenzene	**1.3**	0.16	**0.30**	0.036	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.039	ND	0.0056	
91-20-3	Naphthalene	**0.35**	0.16	**0.066**	0.030	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **38-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-003

Test Code: EPA TO-15 SIM Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/9 - 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC00993

Initial Pressure (psig): -3.55 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.041	ND	0.016	
107-06-2	1,2-Dichloroethane	**0.068**	0.041	**0.017**	0.010	
71-43-2	Benzene	**0.38**	0.12	**0.12**	0.039	
79-01-6	Trichloroethene	**0.042**	0.041	**0.0078**	0.0076	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.030	
127-18-4	Tetrachloroethene	**0.047**	0.041	**0.0069**	0.0060	
100-41-4	Ethylbenzene	**0.31**	0.16	**0.072**	0.038	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.041	ND	0.0060	
91-20-3	Naphthalene	**130**	1.6	**24**	0.31	**D**

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **39-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-004

Test Code: EPA TO-15 SIM Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01628

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.62

Canister Dilution Factor: 1.48

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.037	ND	0.014	
107-06-2	1,2-Dichloroethane	**0.067**	0.037	**0.017**	0.0091	
71-43-2	Benzene	**0.48**	0.11	**0.15**	0.035	
79-01-6	Trichloroethene	ND	0.037	ND	0.0069	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.027	
127-18-4	Tetrachloroethene	**0.082**	0.037	**0.012**	0.0055	
100-41-4	Ethylbenzene	**0.31**	0.15	**0.071**	0.034	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.037	ND	0.0054	
91-20-3	Naphthalene	**0.26**	0.15	**0.049**	0.028	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **40-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-005

Test Code: EPA TO-15 SIM Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00588

Initial Pressure (psig): -4.22 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.76

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.044	ND	0.017	
107-06-2	1,2-Dichloroethane	**0.36**	0.044	**0.090**	0.011	
71-43-2	Benzene	**0.73**	0.13	**0.23**	0.041	
79-01-6	Trichloroethene	**0.54**	0.044	**0.10**	0.0082	
79-00-5	1,1,2-Trichloroethane	ND	0.18	ND	0.032	
127-18-4	Tetrachloroethene	ND	0.044	ND	0.0065	
100-41-4	Ethylbenzene	ND	0.18	ND	0.041	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.044	ND	0.0064	
91-20-3	Naphthalene	**0.42**	0.18	**0.080**	0.034	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **55-1F-032812** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-006

Test Code: EPA TO-15 SIM Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00131
Initial Pressure (psig): -3.45 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.63

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.041	ND	0.016	
107-06-2	1,2-Dichloroethane	**0.24**	0.041	**0.060**	0.010	
71-43-2	Benzene	**0.70**	0.12	**0.22**	0.038	
79-01-6	Trichloroethene	**0.54**	0.041	**0.10**	0.0076	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.030	
127-18-4	Tetrachloroethene	ND	0.041	ND	0.0060	
100-41-4	Ethylbenzene	ND	0.16	ND	0.038	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.041	ND	0.0059	
91-20-3	Naphthalene	**0.30**	0.16	**0.058**	0.031	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **41-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-007

Test Code: EPA TO-15 SIM Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01819

Initial Pressure (psig): -3.37 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.041	ND	0.016	
107-06-2	1,2-Dichloroethane	**0.11**	0.041	**0.027**	0.010	
71-43-2	Benzene	**1.9**	0.12	**0.59**	0.038	
79-01-6	Trichloroethene	ND	0.041	ND	0.0075	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.030	
127-18-4	Tetrachloroethene	**0.22**	0.041	**0.032**	0.0060	
100-41-4	Ethylbenzene	**1.0**	0.16	**0.24**	0.037	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.041	ND	0.0059	
91-20-3	Naphthalene	**0.51**	0.16	**0.098**	0.031	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **48-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-008

Test Code: EPA TO-15 SIM Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00142
Initial Pressure (psig): -5.15 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.93

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.048	ND	0.019	
107-06-2	1,2-Dichloroethane	**0.62**	0.048	**0.15**	0.012	
71-43-2	Benzene	**9.8**	0.14	**3.1**	0.045	
79-01-6	Trichloroethene	**0.057**	0.048	**0.011**	0.0090	
79-00-5	1,1,2-Trichloroethane	ND	0.19	ND	0.035	
127-18-4	Tetrachloroethene	**3.2**	0.048	**0.47**	0.0071	
100-41-4	Ethylbenzene	**4.5**	0.19	**1.0**	0.044	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.048	ND	0.0070	
91-20-3	Naphthalene	**0.50**	0.19	**0.096**	0.037	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **43-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-009

Test Code: EPA TO-15 SIM Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00603

Initial Pressure (psig): -4.54 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.045	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.12**	0.045	**0.029**	0.011	
71-43-2	Benzene	**0.51**	0.14	**0.16**	0.043	
79-01-6	Trichloroethene	ND	0.045	ND	0.0084	
79-00-5	1,1,2-Trichloroethane	ND	0.18	ND	0.033	
127-18-4	Tetrachloroethene	**0.69**	0.045	**0.10**	0.0067	
100-41-4	Ethylbenzene	**1.5**	0.18	**0.34**	0.042	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.045	ND	0.0066	
91-20-3	Naphthalene	**0.18**	0.18	**0.035**	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **45-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-010

Test Code: EPA TO-15 SIM Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01626
Initial Pressure (psig): -1.65 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.035	ND	0.014	
107-06-2	1,2-Dichloroethane	**0.13**	0.035	**0.032**	0.0087	
71-43-2	Benzene	**1.3**	0.11	**0.42**	0.033	
79-01-6	Trichloroethene	ND	0.035	ND	0.0066	
79-00-5	1,1,2-Trichloroethane	ND	0.14	ND	0.026	
127-18-4	Tetrachloroethene	**0.24**	0.035	**0.035**	0.0052	
100-41-4	Ethylbenzene	**0.89**	0.14	**0.20**	0.032	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.035	ND	0.0051	
91-20-3	Naphthalene	**0.28**	0.14	**0.054**	0.027	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **42-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-011

Test Code: EPA TO-15 SIM Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00144

Initial Pressure (psig): -2.74 Final Pressure (psig): 3.58

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.038	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.19**	0.038	**0.046**	0.0095	
71-43-2	Benzene	**0.46**	0.11	**0.14**	0.036	
79-01-6	Trichloroethene	ND	0.038	ND	0.0071	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.028	
127-18-4	Tetrachloroethene	**2.9**	0.038	**0.43**	0.0056	
100-41-4	Ethylbenzene	**0.39**	0.15	**0.091**	0.035	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.038	ND	0.0056	
91-20-3	Naphthalene	**0.64**	0.15	**0.12**	0.029	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **44-1F-032912** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-012

Test Code: EPA TO-15 SIM Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01183
Initial Pressure (psig): -3.92 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.71

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.043	ND	0.017	
107-06-2	1,2-Dichloroethane	**0.50**	0.043	**0.12**	0.011	
71-43-2	Benzene	**0.83**	0.13	**0.26**	0.040	
79-01-6	Trichloroethene	ND	0.043	ND	0.0080	
79-00-5	1,1,2-Trichloroethane	ND	0.17	ND	0.031	
127-18-4	Tetrachloroethene	**0.064**	0.043	**0.0095**	0.0063	
100-41-4	Ethylbenzene	**0.79**	0.17	**0.18**	0.039	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.043	ND	0.0062	
91-20-3	Naphthalene	ND	0.17	ND	0.033	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **46-1F-033012** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-013

Test Code: EPA TO-15 SIM Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00810
Initial Pressure (psig): -4.91 Final Pressure (psig): 3.67

Canister Dilution Factor: 1.88

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.047	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.091**	0.047	**0.023**	0.012	
71-43-2	Benzene	**1.4**	0.14	**0.43**	0.044	
79-01-6	Trichloroethene	ND	0.047	ND	0.0087	
79-00-5	1,1,2-Trichloroethane	ND	0.19	ND	0.034	
127-18-4	Tetrachloroethene	**0.50**	0.047	**0.074**	0.0069	
100-41-4	Ethylbenzene	**0.52**	0.19	**0.12**	0.043	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.047	ND	0.0068	
91-20-3	Naphthalene	**0.40**	0.19	**0.077**	0.036	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **47-1F-033112** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201319-014

Test Code: EPA TO-15 SIM Date Collected: 3/31/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01122

Initial Pressure (psig): -5.26 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.049	ND	0.019	
107-06-2	1,2-Dichloroethane	**2.0**	0.049	**0.49**	0.012	
71-43-2	Benzene	**1.4**	0.15	**0.43**	0.046	
79-01-6	Trichloroethene	ND	0.049	ND	0.0091	
79-00-5	1,1,2-Trichloroethane	ND	0.20	ND	0.036	
127-18-4	Tetrachloroethene	**0.13**	0.049	**0.020**	0.0072	
100-41-4	Ethylbenzene	**0.61**	0.20	**0.14**	0.045	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.049	ND	0.0071	
91-20-3	Naphthalene	**0.22**	0.20	**0.042**	0.037	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201319

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date(s) Collected: 3/25 - 3/31/12
Analyst: Karen Ryan Date(s) Received: 4/4/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 4/9 - 4/10/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120409-MB	**101**	**110**	**108**	70-130	
Method Blank	P120410-MB	**100**	**109**	**107**	70-130	
Lab Control Sample	P120409-LCS	**102**	**110**	**110**	70-130	
Lab Control Sample	P120410-LCS	**96**	**108**	**109**	70-130	
50-2F-032512	P1201319-001	**99**	**107**	**102**	70-130	
49-1F-032712	P1201319-002	**96**	**110**	**104**	70-130	
38-1F-032812	P1201319-003	**97**	**112**	**109**	70-130	
39-1F-032812	P1201319-004	**99**	**112**	**102**	70-130	
40-1F-032812	P1201319-005	**97**	**108**	**110**	70-130	
55-1F-032812	P1201319-006	**97**	**109**	**110**	70-130	
41-1F-032912	P1201319-007	**96**	**110**	**105**	70-130	
48-1F-032912	P1201319-008	**96**	**107**	**109**	70-130	
43-1F-032912	P1201319-009	**97**	**110**	**106**	70-130	
45-1F-032912	P1201319-010	**97**	**110**	**107**	70-130	
42-1F-032912	P1201319-011	**96**	**111**	**108**	70-130	
44-1F-032912	P1201319-012	**98**	**108**	**108**	70-130	
44-1F-032912	P1201319-012DUP	**97**	**110**	**108**	70-130	
46-1F-033012	P1201319-013	**98**	**111**	**99**	70-130	
47-1F-033112	P1201319-014	**99**	**109**	**108**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**3.08**	**79**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**3.13**	**78**	51-140	
71-43-2	Benzene	3.96	**3.51**	**89**	56-125	
79-01-6	Trichloroethene	3.88	**2.97**	**77**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**2.89**	**74**	49-137	
127-18-4	Tetrachloroethene	3.68	**2.91**	**79**	58-134	
100-41-4	Ethylbenzene	3.96	**3.18**	**80**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**3.04**	**79**	53-148	
91-20-3	Naphthalene	3.44	**3.08**	**90**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201319
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**2.91**	**75**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**2.90**	**73**	51-140	
71-43-2	Benzene	3.96	**3.49**	**88**	56-125	
79-01-6	Trichloroethene	3.88	**2.84**	**73**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**2.77**	**71**	49-137	
127-18-4	Tetrachloroethene	3.68	**2.82**	**77**	58-134	
100-41-4	Ethylbenzene	3.96	**3.25**	**82**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**2.92**	**76**	53-148	
91-20-3	Naphthalene	3.44	**3.12**	**91**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **44-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201319
CAS Sample ID: P1201319-012DUP

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01183

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/10/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.92 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.71

CAS #	Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
75-01-4	Vinyl Chloride	ND	ND	ND	ND	-	-	25	
107-06-2	1,2-Dichloroethane	0.496	0.123	0.491	0.121	0.4935	**1**	25	
71-43-2	Benzene	0.827	0.259	0.827	0.259	0.827	**0**	25	
79-01-6	Trichloroethene	ND	ND	ND	ND	-	-	25	
79-00-5	1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
127-18-4	Tetrachloroethene	0.0642	0.00947	0.0641	0.00946	0.06415	**0.2**	25	
100-41-4	Ethylbenzene	0.790	0.182	0.774	0.178	0.782	**2**	25	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
91-20-3	Naphthalene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

Massachusetts APH ICAL Method: M16022712.M ICAL Date: 2/27/12 Instrument ID: MS16

Hydrocarbon Ranges

	areas							masses					
C5-C8 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopentane	73866	131100	566770	2255808	4522556	8936172		0.520	1.04	5.20	26.0	52.0	104
n-Hexane	78752	129416	532939	2431156	4850068	9520785		0.490	0.98	4.90	24.5	49.0	98
Cyclohexane	71093	131903	610831	2881536	5778021	11355310		0.500	1.00	5.00	25.0	50.0	100
2,3-Dimethylpentane	71330	134802	622005	2909216	5793262	11304627		0.520	1.04	5.20	26.0	52.0	104
n-Heptane	66345	125793	590534	2785727	5552279	10734061		0.490	0.98	4.90	24.5	49.0	98
n-Octane	77181	142834	669465	3160716	6264037	11839954		0.505	1.01	5.05	25.3	50.5	101
area sum:	**438567**	**795848**	**3592544**	**16424159**	**32760223**	**63690909**	**sum:**	**3.025**	**6.050**	**30.25**	**151.30**	**302.50**	**605.00**
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
2,3-Dimethylheptane	83205	154255	731522	3440887	6755851	12700073		0.485	0.97	4.85	24.3	48.5	97
n-Nonane	77550	145499	691987	3274543	6427207	12148314		0.485	0.97	4.85	24.3	48.5	97
n-Decane	78814	152614	738750	3503011	6899987	12851504		0.490	0.98	4.90	24.5	49.0	98
n-Butylcyclohexane	97891	184987	896859	4276591	8376082	15228652		0.495	0.99	4.95	24.8	49.5	99
n-Undecane	79443	152957	755651	3602026	7106272	13091473		0.480	0.96	4.80	24.0	48.0	96
n-Dodecane	75428	146260	753969	3513032	7018288	13181075		0.500	1.00	5.00	25.0	50.0	100
area sum:	**492331**	**936572**	**4568738**	**21610090**	**42583687**	**79201091**	**sum:**	**2.935**	**5.870**	**29.35**	**146.90**	**293.50**	**587.00**
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopropylbenzene	12820	24226	114789	564731	1111501	1927344		0.485	0.97	4.85	24.3	48.5	97
3-Ethyltoluene	14043	26099	127717	633290	1241349	2166999		0.470	0.94	4.70	23.5	47.0	94
1,3,5-Trimethylbenzene	19126	35909	175219	859825	1663097	2896573		0.490	0.98	4.90	24.5	49.0	98
1,2,3-Trimethylbenzene	20434	38242	191458	916640	1653887	2575128		0.495	0.99	4.95	24.8	49.5	99
p-Isopropyltoluene	11392	21601	106407	521026	932930	1434539		0.460	0.92	4.60	23.0	46.0	92
area sum:	**77815**	**146077**	**715590**	**3495512**	**6602764**	**11000583**	**sum:**	**2.400**	**4.800**	**24.00**	**120.10**	**240.00**	**480.00**

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Massachusetts APH ICAL: M16022712.M ICAL Date: 2/27/12 Instrument ID: MS16

Hydrocarbon Ranges

areas

Internal Standards (TIC)	0.5	1	5	25	50	100
Bromochloromethane (IS1)	1821684	1812431	2017469	1784633	1989673	2035509
1,4-Difluorobenzene (IS2)	3489421	3485174	3835800	3398785	3833709	3906245
Chlorobenzene-d5 (IS3)	4171549	4155528	4598058	4065257	4603508	4715823
Internal Standards (EIC)						
Bromochloromethane (IS1)	364034	360985	402561	357490	400808	408393
1,4-Difluorobenzene (IS2)	1609720	1606523	1773852	1570016	1771993	1817421
Chlorobenzene-d5 (IS3)	1436269	1437459	1586205	1400955	1581182	1617631
Surrogates (TIC)	**0.5**	**1**	**5**	**25**	**50**	**100**
1,2-Dichloroethane-d4	1609254	1603178	1763511	1557660	1747893	1788085
Toluene-d8	4583566	4557574	5043245	4455345	5014483	5128344
p-Bromofluorobenzene	3615087	3609366	4056000	3584207	4058148	4175322

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RRFs

C5-C8 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	2.2516	2.0470	1.6738	1.7285	1.5279	1.4481	1.780	17.44
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	2.9198	2.7749	2.4534	2.6251	2.2940	2.0852	2.525	12.27
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	0.5644	0.5293	0.4699	0.5194	0.4350	0.3542	0.479	15.92

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **04071203.D**
Data File Path: **J:\MS16\DATA\2012_04\07**
Operator: **LH**
Date Acquired: **4/7/12 1:51**
Acq. Method File: **TO15.M**
Sample Name: **25ng MAPH CCV STD**
Misc Info: **S25-03291201/S25-03161201**
Instrument Name: **GCMS-16**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	13.51	1477594
16)	Chlorobenzene-d5 (IS3)	17.46	1283723

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	7.06	1775206	1.463	124.3	**-17.82**	**-30**	**30**	Pass
4)	n-Hexane	11.41	1948862						
9)	Cyclohexane	13.44	2333306						
10)	2,3-Dimethylpentane	13.71	2322044	**Spike**	**ICAL**				
11)	n-Heptane	14.58	2209814	**Amt (ng)**	**RRF**				
14)	n-Octane	16.81	2491474	151.30	1.78				
			13080706						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	17.83	2690970	2.293	133.4	**-9.18**	**-30**	**30**	Pass
19)	n-Nonane	18.42	2602638						
25)	n-Decane	19.66	2736378						
28)	Butylcyclohexane	20.16	3274636	**Spike**	**ICAL**				
29)	n-Undecane	20.68	2881643	**Amt (ng)**	**RRF**				
30)	n-Dodecane	21.58	3111762	146.90	2.525				
			17298027						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	18.73	448849	0.439	110.2	**-8.28**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	19.19	504134						
24)	1,3,5-Trimethylbenzene	19.28	676024						
26)	p-Isopropyltoluene	19.95	395875	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	19.96	684651	**Amt (ng)**	**RRF**				
			2709533	120.1	0.479				

LH 4/7/12

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **04091203.D**
Data File Path: **J:\MS16\DATA\2012_04\09**
Operator: **LH**
Date Acquired: **4/9/12 10:01**
Acq. Method File: **TO15.M**
Sample Name: **25ng MAPH CCV STD**
Misc Info: **S25-03291201/S25-03161201**
Instrument Name: **GCMS-16**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	13.51	1292971
16)	Chlorobenzene-d5 (IS3)	17.46	1099977

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	7.06	1834143	1.684	143.2	**-5.38**	**-30**	**30**	Pass
4)	n-Hexane	11.41	1968429						
9)	Cyclohexane	13.44	2344177						
10)	2,3-Dimethylpentane	13.71	2319073	**Spike**	**ICAL**				
11)	n-Heptane	14.58	2219413	**Amt (ng)**	**RRF**				
14)	n-Octane	16.81	2494694	151.30	1.78				
			13179929						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	17.83	2684531	2.630	153.0	**4.18**	**-30**	**30**	Pass
19)	n-Nonane	18.42	2597249						
25)	n-Decane	19.66	2704647						
28)	Butylcyclohexane	20.16	3198559	**Spike**	**ICAL**				
29)	n-Undecane	20.68	2827213	**Amt (ng)**	**RRF**				
30)	n-Dodecane	21.58	2989675	146.90	2.525				
			17001874						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	18.72	436944	0.500	125.4	**4.37**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	19.19	489321						
24)	1,3,5-Trimethylbenzene	19.28	657834						
26)	p-Isopropyltoluene	19.95	387057	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	19.96	670727	**Amt (ng)**	**RRF**				
			2641883	120.1	0.479				

LH 4/9/12

Response Factor Report GCMS-16

Method Path : J:\MS16\METHODS\
Method File : R16022812.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Feb 29 09:45:36 2012
Response Via : Initial Calibration

Calibration Files
0.1 =02281209.D 0.2 =02281210.D 0.5 =02281211.D 1.0 =02281212.D 5.0 =02281213.D 25 =02281214.D
50 =02281215.D 100 =02281216.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	----------	ISTD	----------	----------	----------	----------	----------		
2)	T	Propene	1.266	1.044	0.941	0.879	1.119	1.182	1.117	0.902	1.056	13.21
3)	T	Dichlorodifluo...	3.487	3.057	2.439	2.686	2.602	2.568	2.404	1.980	2.653	17.05
4)	T	Chloromethane	2.142	1.754	1.395	1.560	1.422	1.451	1.319	1.025	1.509	21.81
5)	T	1,2-Dichloro-1...	1.855	1.616	1.317	1.450	1.448	1.403	1.296	1.040	1.428	16.72
6)	T	Vinyl Chloride	1.876	1.726	1.422	1.632	1.615	1.581	1.483	1.238	1.572	12.35
7)	T	1,3-Butadiene	1.206	1.049	0.873	0.989	1.035	1.064	1.043	0.883	1.018	10.46
8)	T	Bromomethane	1.637	1.323	1.022	1.148	1.114	1.146	1.072	0.874	1.167	19.56
9)	T	Chloroethane	0.941	0.886	0.717	0.799	0.790	0.774	0.724	0.612	0.780	13.07
10)	T	Ethanol			0.670	0.746	0.735	0.713	0.684	0.589	0.690	8.31
11)	T	Acetonitrile	2.188	1.812	1.379	1.549	1.515	1.466	1.406	1.238	1.569	19.11
12)	T	Acrolein	0.816	0.658	0.515	0.568	0.544	0.537	0.522	0.458	0.577	19.38
13)	T	Acetone			0.698	0.754	0.700	0.674	0.636	0.523	0.664	11.91
14)	T	Trichlorofluor...	3.048	2.709	2.175	2.469	2.437	2.462	2.331	1.951	2.448	13.50
15)	T	2-Propanol (Is...			2.216	2.820	2.081	1.852	1.780	1.573	2.054	21.34
16)	T	Acrylonitrile	1.076	1.051	0.966	1.110	1.171	1.184	1.148	0.999	1.088	7.35
17)	T	1,1-Dichloroet...	1.332	1.160	0.976	1.094	1.109	1.121	1.063	0.906	1.095	11.55
18)	T	2-Methyl-2-Pro...		3.293	2.593	2.892	2.865	2.031			2.735	17.04
19)	T	Methylene Chlo...			1.380	1.317	1.160	1.135	1.071	0.909	1.162	14.64
20)	T	3-Chloro-1-pro...	1.417	1.185	1.036	1.175	1.253	1.294	1.263	1.100	1.215	9.77
21)	T	Trichlorotrifl...	1.439	1.322	1.027	1.156	1.165	1.178	1.112	0.924	1.166	13.76
22)	T	Carbon Disulfide	5.124	4.418	3.529	3.908	3.928	3.956	3.708	3.097	3.958	15.28
23)	T	trans-1,2-Dich...	1.818	1.612	1.347	1.547	1.597	1.611	1.524	1.278	1.542	10.88
24)	T	1,1-Dichloroet...	2.378	2.110	1.742	1.924	1.931	1.927	1.813	1.526	1.919	13.13
25)	T	Methyl tert-Bu...	4.447	3.935	3.104	3.445	3.441	3.473	3.268	2.702	3.477	15.13
26)	T	Vinyl Acetate	0.246	0.233	0.205	0.241	0.261	0.265	0.242	0.186	0.235	11.45
27)	T	2-Butanone (MEK)	0.685	0.671	0.601	0.699	0.712	0.720	0.636	0.405	0.641	16.09
28)	T	cis-1,2-Dichlo...	1.820	1.609	1.313	1.493	1.519	1.526	1.434	1.202	1.489	12.50
29)	T	Diisopropyl Ether			0.842	0.922	0.913	0.897	0.788	0.579	0.823	15.77
30)	T	Ethyl Acetate	0.365	0.367	0.331	0.379	0.392	0.377	0.344	0.258	0.352	12.15
31)	T	n-Hexane	2.337	1.964	1.576	1.715	1.708	1.647	1.492	1.103	1.693	21.11

Method Path : J:\MS16\METHODS\
Method File : R16022812.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.564	2.289	1.789	2.029	2.039	2.036	1.927	1.626	2.037	14.18
33)	S	1,2-Dichloroet...	1.559	1.561	1.555	1.556	1.534	1.497	1.489	1.489	1.530	2.15
34)	T	Tetrahydrofura...			0.802	0.750	0.715	0.655	0.625	0.532	0.680	14.20
35)	T	Ethyl tert-But...	1.672	1.566	1.239	1.401	1.406	1.438	1.357	1.125	1.401	12.26
36)	T	1,2-Dichloroet...	2.074	1.794	1.470	1.635	1.625	1.623	1.528	1.272	1.628	14.49
37)	IR	1,4-Difluorobenzen...	----------	ISTD	----------							
38)	T	1,1,1-Trichlor...	0.581	0.492	0.403	0.447	0.449	0.471	0.449	0.370	0.458	13.70
39)	T	Isopropyl Acetate	0.183	0.154	0.129	0.150	0.152	0.151	0.141	0.115	0.147	13.39
40)	T	1-Butanol	0.299	0.258	0.202	0.232	0.245	0.247	0.231	0.192	0.238	13.98
41)	T	Benzene	1.522	1.231	0.947	1.003	0.976	0.988	0.923	0.745	1.042	22.55
42)	T	Carbon Tetrach...	0.398	0.357	0.293	0.346	0.371	0.406	0.388	0.320	0.360	10.87
43)	T	Cyclohexane	0.515	0.449	0.358	0.398	0.398	0.399	0.360	0.275	0.394	17.79
44)	T	tert-Amyl Meth...	0.915	0.808	0.654	0.741	0.751	0.769	0.726	0.595	0.745	12.89
45)	T	1,2-Dichloropr...	0.311	0.273	0.213	0.249	0.245	0.248	0.233	0.194	0.246	14.49
46)	T	Bromodichlorom...	0.439	0.377	0.317	0.363	0.375	0.390	0.370	0.301	0.367	11.68
47)	T	Trichloroethene	0.418	0.370	0.287	0.327	0.332	0.345	0.324	0.260	0.333	14.55
48)	T	1,4-Dioxane	0.271	0.230	0.189	0.217	0.218	0.222	0.208	0.165	0.215	14.27
49)	T	2,2,4-Trimethy...	1.281	1.127	0.902	0.998	0.991	0.994	0.922	0.755	0.996	15.69
50)	T	Methyl Methacr...	0.118	0.109	0.093	0.109	0.114	0.118	0.109	0.085	0.107	11.07
51)	T	n-Heptane	0.318	0.261	0.222	0.247	0.248	0.252	0.237	0.194	0.247	14.31
52)	T	cis-1,3-Dichlo...	0.438	0.403	0.342	0.399	0.426	0.448	0.421	0.344	0.403	10.01
53)	T	4-Methyl-2-pen...	0.219	0.212	0.178	0.211	0.217	0.224	0.212	0.177	0.206	8.91
54)	T	trans-1,3-Dich...	0.335	0.348	0.292	0.358	0.392	0.424	0.402	0.331	0.360	12.05
55)	T	1,1,2-Trichlor...	0.317	0.291	0.238	0.266	0.271	0.282	0.265	0.214	0.268	11.76
56)	IR	Chlorobenzene-d5 (...	----------	ISTD	----------							
57)	S	Toluene-d8 (SS2)	2.333	2.340	2.320	2.313	2.322	2.300	2.301	2.268	2.312	0.98
58)	T	Toluene	3.569	3.002	2.316	2.553	2.544	2.520	2.294	1.715	2.564	21.15
59)	T	2-Hexanone	1.402	1.216	0.979	1.077	1.077	1.095	1.034	0.845	1.091	15.06
60)	T	Dibromochlorom...	0.834	0.767	0.621	0.711	0.777	0.829	0.788	0.617	0.743	11.54
61)	T	1,2-Dibromoethane	0.826	0.751	0.623	0.717	0.754	0.779	0.734	0.586	0.721	11.04
62)	T	n-Butyl Acetate	1.568	1.351	1.073	1.255	1.292	1.317	1.279	1.074	1.276	12.40
63)	T	n-Octane	0.652	0.537	0.418	0.465	0.468	0.473	0.444	0.357	0.477	18.31
64)	T	Tetrachloroethene	1.126	0.969	0.792	0.889	0.896	0.927	0.860	0.643	0.888	15.64
65)	T	Chlorobenzene	2.298	2.009	1.568	1.778	1.800	1.798	1.644	1.213	1.764	17.98
66)	T	Ethylbenzene	3.777	3.256	2.554	2.857	2.923	2.925	2.657	1.940	2.861	18.62
67)	T	m- & p-Xylenes	2.941	2.593	2.011	2.269	2.337	2.335	2.078	1.453	2.252	19.37
68)	T	Bromoform	0.747	0.659	0.566	0.659	0.754	0.824	0.778	0.607	0.699	12.84
69)	T	Styrene	2.113	1.852	1.506	1.723	1.841	1.896	1.727	1.280	1.742	14.60
70)	T	o-Xylene	3.164	2.681	2.123	2.394	2.454	2.456	2.202	1.559	2.379	19.38

Method Path : J:\MS16\METHODS\
Method File : R16022812.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	1.425	1.188	0.937	1.041	1.046	1.048	0.976	0.776	1.055	18.04
72)	T	1,1,2,2-Tetrac...	1.385	1.241	0.984	1.136	1.165	1.163	1.056	0.770	1.113	16.41
73)	S	Bromofluoroben...	0.935	0.940	0.961	0.955	0.950	0.961	0.957	0.968	0.953	1.18
74)	T	Cumene	4.019	3.797	2.823	3.129	3.225	3.210	2.836	1.993	3.129	19.94
75)	T	alpha-Pinene	1.863	1.686	1.306	1.478	1.555	1.591	1.452	1.072	1.500	15.96
76)	T	n-Propylbenzene	4.604	4.025	3.229	3.671	3.814	3.776	3.339	2.351	3.601	18.29
77)	T	3-Ethyltoluene	3.610	3.089	2.518	2.900	3.088	3.218	2.774	2.033	2.904	16.41
78)	T	4-Ethyltoluene	3.148	3.062	2.470	2.820	2.972	2.786	2.522	1.670	2.681	17.67
79)	T	1,3,5-Trimethy...	3.111	2.802	2.201	2.446	2.549	2.548	2.267	1.615	2.442	18.14
80)	T	alpha-Methylst...	1.550	1.405	1.154	1.348	1.491	1.524	1.364	0.979	1.352	14.53
81)	T	2-Ethyltoluene	4.097	3.450	2.686	3.061	3.171	3.135	2.778	1.959	3.042	20.32
82)	T	1,2,4-Trimethy...	3.214	2.749	2.134	2.476	2.623	2.486	2.032	1.241	2.369	24.66
83)	T	n-Decane	1.406	1.278	1.042	1.188	1.224	1.254	1.159	0.888	1.180	13.32
84)	T	Benzyl Chloride	2.172	1.840	1.536	1.878	2.188	2.375	2.197	1.600	1.973	15.49
85)	T	1,3-Dichlorobe...	1.923	1.688	1.347	1.533	1.630	1.658	1.498	1.047	1.540	16.86
86)	T	1,4-Dichlorobe...	2.134	1.757	1.415	1.594	1.669	1.700	1.514	1.035	1.602	19.53
87)	T	sec-Butylbenzene	4.029	3.567	2.848	3.283	3.442	3.412	2.992	2.016	3.198	18.69
88)	T	4-Isopropyltol...	3.919	3.433	2.765	3.224	3.443	3.295	2.711	1.683	3.059	22.14
89)	T	1,2,3-Trimethy...	3.053	2.720	2.180	2.524	2.699	2.640	2.243	1.459	2.440	19.82
90)	T	1,2-Dichlorobe...	1.856	1.657	1.322	1.504	1.607	1.623	1.439	1.004	1.501	17.06
91)	T	d-Limonene	0.925	0.877	0.732	0.847	0.906	0.925	0.846	0.619	0.835	12.88
92)	T	1,2-Dibromo-3-...	0.601	0.532	0.442	0.530	0.612	0.651	0.615	0.473	0.557	13.38
93)	T	n-Undecane	1.397	1.229	0.991	1.163	1.220	1.246	1.151	0.874	1.159	13.94
94)	T	1,2,4-Trichlor...	1.556	1.297	1.021	1.160	1.263	1.337	1.235	0.893	1.220	16.52
95)	T	Naphthalene	6.159	4.462	3.447	3.848	4.216	4.297	3.885	2.708	4.128	24.04
96)	T	n-Dodecane	1.391	1.260	1.019	1.160	1.283	1.280	1.205	0.936	1.192	12.55
97)	T	Hexachlorobuta...	1.077	0.859	0.668	0.727	0.782	0.823	0.776	0.563	0.784	19.20
98)	T	Cyclohexanone	1.137	0.944	0.713	0.826	0.829	0.837	0.796	0.654	0.842	17.52
99)	T	tert-Butylbenzene	3.729	3.267	2.630	3.067	3.276	3.135	2.580	1.602	2.911	22.14
100)	T	n-Butylbenzene	2.975	2.669	2.172	2.522	2.655	2.653	2.339	1.639	2.453	16.60

(#) = Out of Range

Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2012_04\07\
Data File : 04071202.D
Acq On : 7 Apr 2012 1:17
Operator : LH
Sample : 25ng TO-15 CCV STD
Misc : S25-03291201/S25-03191203
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 07 07:29:46 2012
Quant Method : J:\MS16\METHODS\R16022812.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 29 09:45:36 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	80	-0.02
2	T	Propene	1.056	1.099	-4.1	75	-0.01
3	T	Dichlorodifluoromethane (CF	2.653	2.078	21.7	65	0.00
4	T	Chloromethane	1.509	1.495	0.9	83	-0.02
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.428	1.186	16.9	68	-0.02
6	T	Vinyl Chloride	1.572	1.487	5.4	76	-0.02
7	T	1,3-Butadiene	1.018	0.994	2.4	75	-0.02
8	T	Bromomethane	1.167	1.021	12.5	72	-0.03
9	T	Chloroethane	0.780	0.755	3.2	78	-0.02
10	T	Ethanol	0.690	0.702	-1.7	79	0.00
11	T	Acetonitrile	1.569	1.445	7.9	79	-0.06
12	T	Acrolein	0.577	0.533	7.6	80	-0.03
13	T	Acetone	0.664	0.606	8.7	72	-0.06
14	T	Trichlorofluoromethane	2.448	2.006	18.1	65	-0.02
15	T	2-Propanol (Isopropanol)	2.054	1.727	15.9	75	-0.06
16	T	Acrylonitrile	1.088	1.160	-6.6	79	-0.04
17	T	1,1-Dichloroethene	1.095	1.024	6.5	73	-0.02
18	T	2-Methyl-2-Propanol (tert-B	2.735	1.397	48.9#	55	-0.04
19	T	Methylene Chloride	1.162	1.045	10.1	74	-0.02
20	T	3-Chloro-1-propene (Allyl C	1.215	1.238	-1.9	77	-0.02
21	T	Trichlorotrifluoroethane	1.166	1.061	9.0	72	-0.02
22	T	Carbon Disulfide	3.958	3.758	5.1	76	-0.02
23	T	trans-1,2-Dichloroethene	1.542	1.497	2.9	75	-0.02
24	T	1,1-Dichloroethane	1.919	1.813	5.5	76	-0.02
25	T	Methyl tert-Butyl Ether	3.477	2.841	18.3	66	-0.02
26	T	Vinyl Acetate	0.235	0.217	7.7	66	-0.04
27	T	2-Butanone (MEK)	0.641	0.640	0.2	71	-0.03
28	T	cis-1,2-Dichloroethene	1.489	1.377	7.5	72	-0.02
29	T	Diisopropyl Ether	0.823	0.747	9.2	67	-0.01
30	T	Ethyl Acetate	0.352	0.327	7.1	70	-0.03
31	T	n-Hexane	1.693	1.394	17.7	68	0.00
32	T	Chloroform	2.037	1.776	12.8	70	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.530	1.360	11.1	73	-0.02
34	T	Tetrahydrofuran (THF)	0.680	0.639	6.0	78	-0.02
35	T	Ethyl tert-Butyl Ether	1.401	1.195	14.7	67	-0.02
36	T	1,2-Dichloroethane	1.628	1.310	19.5	65	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	81	-0.01
38	T	1,1,1-Trichloroethane	0.458	0.394	14.0	68	-0.01

LH 4/7/12

Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2012_04\07\
Data File : 04071202.D
Acq On : 7 Apr 2012 1:17
Operator : LH
Sample : 25ng TO-15 CCV STD
Misc : S25-03291201/S25-03191203
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 07 07:29:46 2012
Quant Method : J:\MS16\METHODS\R16022812.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 29 09:45:36 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.147	0.134	8.8	72	-0.02
40	T	1-Butanol	0.238	0.218	8.4	71	-0.04
41	T	Benzene	1.042	0.898	13.8	74	-0.01
42	T	Carbon Tetrachloride	0.360	0.335	6.9	67	-0.01
43	T	Cyclohexane	0.394	0.348	11.7	71	-0.02
44	T	tert-Amyl Methyl Ether	0.745	0.649	12.9	68	-0.01
45	T	1,2-Dichloropropane	0.246	0.235	4.5	77	-0.01
46	T	Bromodichloromethane	0.367	0.327	10.9	68	-0.01
47	T	Trichloroethene	0.333	0.306	8.1	72	-0.01
48	T	1,4-Dioxane	0.215	0.204	5.1	74	-0.02
49	T	2,2,4-Trimethylpentane (Iso	0.996	0.957	3.9	78	-0.01
50	T	Methyl Methacrylate	0.107	0.105	1.9	72	-0.02
51	T	n-Heptane	0.247	0.230	6.9	74	-0.01
52	T	cis-1,3-Dichloropropene	0.403	0.399	1.0	72	-0.01
53	T	4-Methyl-2-pentanone	0.206	0.208	-1.0	75	-0.02
54	T	trans-1,3-Dichloropropene	0.360	0.368	-2.2	70	0.00
55	T	1,1,2-Trichloroethane	0.268	0.255	4.9	73	0.00
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	83	0.00
57	S	Toluene-d8 (SS2)	2.312	2.259	2.3	82	0.00
58	T	Toluene	2.564	2.191	14.5	72	-0.01
59	T	2-Hexanone	1.091	0.900	17.5	68	-0.01
60	T	Dibromochloromethane	0.743	0.678	8.7	68	0.00
61	T	1,2-Dibromoethane	0.721	0.660	8.5	70	0.00
62	T	n-Butyl Acetate	1.276	1.134	11.1	72	-0.01
63	T	n-Octane	0.477	0.423	11.3	74	-0.01
64	T	Tetrachloroethene	0.888	0.808	9.0	72	0.00
65	T	Chlorobenzene	1.764	1.550	12.1	72	0.00
66	T	Ethylbenzene	2.861	2.493	12.9	71	0.00
67	T	m- & p-Xylenes	2.252	1.921	14.7	68	-0.01
68	T	Bromoform	0.699	0.675	3.4	68	0.00
69	T	Styrene	1.742	1.579	9.4	69	0.00
70	T	o-Xylene	2.379	2.042	14.2	69	-0.01
71	T	n-Nonane	1.055	0.887	15.9	70	0.00
72	T	1,1,2,2-Tetrachloroethane	1.113	0.964	13.4	69	-0.01
73	S	Bromofluorobenzene (SS3)	0.953	0.991	-4.0	86	0.00
74	T	Cumene	3.129	2.704	13.6	70	-0.01
75	T	alpha-Pinene	1.500	1.316	12.3	69	0.00
76	T	n-Propylbenzene	3.601	3.111	13.6	68	0.00

4/7/12

Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2012_04\07\
Data File : 04071202.D
Acq On : 7 Apr 2012 1:17
Operator : LH
Sample : 25ng TO-15 CCV STD
Misc : S25-03291201/S25-03191203
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 07 07:29:46 2012
Quant Method : J:\MS16\METHODS\R16022812.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 29 09:45:36 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	2.904	2.489	14.3	64	-0.01
78	T	4-Ethyltoluene	2.681	2.428	9.4	72	0.00
79	T	1,3,5-Trimethylbenzene	2.442	2.098	14.1	68	0.00
80	T	alpha-Methylstyrene	1.352	1.189	12.1	65	0.00
81	T	2-Ethyltoluene	3.042	2.529	16.9	67	-0.01
82	T	1,2,4-Trimethylbenzene	2.369	1.962	17.2	66	-0.01
83	T	n-Decane	1.180	1.038	12.0	69	0.00
84	T	Benzyl Chloride	1.973	1.839	6.8	64	-0.01
85	T	1,3-Dichlorobenzene	1.540	1.361	11.6	68	-0.01
86	T	1,4-Dichlorobenzene	1.602	1.399	12.7	68	0.00
87	T	sec-Butylbenzene	3.198	2.783	13.0	68	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.059	2.675	12.6	67	0.00
89	T	1,2,3-Trimethylbenzene	2.440	2.093	14.2	66	-0.02
90	T	1,2-Dichlorobenzene	1.501	1.315	12.4	67	0.00
91	T	d-Limonene	0.835	0.715	14.4	64	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.557	0.546	2.0	70	0.00
93	T	n-Undecane	1.159	1.108	4.4	74	0.00
94	T	1,2,4-Trichlorobenzene	1.220	1.211	0.7	75	0.00
95	T	Naphthalene	4.128	3.797	8.0	73	0.00
96	T	n-Dodecane	1.192	1.249	-4.8	81	0.00
97	T	Hexachlorobutadiene	0.784	0.768	2.0	77	0.00
98	T	Cyclohexanone	0.842	0.742	11.9	74	-0.01
99	T	tert-Butylbenzene	2.911	2.545	12.6	67	0.00
100	T	n-Butylbenzene	2.453	2.158	12.0	68	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4/7/12

Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2012_04\09\
Data File : 04091202.D
Acq On : 9 Apr 2012 9:28
Operator : LH
Sample : 25ng TO-15 CCV STD
Misc : S25-03291201/S25-03191203
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 09 11:30:10 2012
Quant Method : J:\MS16\METHODS\R16022812.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 29 09:45:36 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	75	-0.01
2	T	Propene	1.056	1.192	-12.9	76	0.00
3	T	Dichlorodifluoromethane (CF	2.653	2.243	15.5	66	0.00
4	T	Chloromethane	1.509	1.657	-9.8	86	-0.02
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.428	1.262	11.6	67	-0.02
6	T	Vinyl Chloride	1.572	1.636	-4.1	78	-0.02
7	T	1,3-Butadiene	1.018	1.124	-10.4	79	-0.02
8	T	Bromomethane	1.167	1.085	7.0	71	-0.02
9	T	Chloroethane	0.780	0.847	-8.6	82	-0.02
10	T	Ethanol	0.690	0.808	-17.1	85	0.00
11	T	Acetonitrile	1.569	1.685	-7.4	86	-0.06
12	T	Acrolein	0.577	0.604	-4.7	84	-0.03
13	T	Acetone	0.664	0.676	-1.8	75	-0.05
14	T	Trichlorofluoromethane	2.448	2.159	11.8	66	-0.01
15	T	2-Propanol (Isopropanol)	2.054	2.187	-6.5	89	-0.06
16	T	Acrylonitrile	1.088	1.266	-16.4	80	-0.04
17	T	1,1-Dichloroethene	1.095	1.093	0.2	73	-0.02
18	T	2-Methyl-2-Propanol (tert-B	2.735	1.473	46.1#	54	-0.03
19	T	Methylene Chloride	1.162	1.116	4.0	74	-0.02
20	T	3-Chloro-1-propene (Allyl C	1.215	1.424	-17.2	83	-0.02
21	T	Trichlorotrifluoroethane	1.166	1.129	3.2	72	-0.02
22	T	Carbon Disulfide	3.958	4.050	-2.3	77	-0.02
23	T	trans-1,2-Dichloroethene	1.542	1.641	-6.4	76	-0.02
24	T	1,1-Dichloroethane	1.919	1.969	-2.6	77	-0.02
25	T	Methyl tert-Butyl Ether	3.477	3.100	10.8	67	-0.01
26	T	Vinyl Acetate	0.235	0.234	0.4	66	-0.04
27	T	2-Butanone (MEK)	0.641	0.691	-7.8	72	-0.03
28	T	cis-1,2-Dichloroethene	1.489	1.501	-0.8	74	-0.02
29	T	Diisopropyl Ether	0.823	0.809	1.7	68	0.00
30	T	Ethyl Acetate	0.352	0.358	-1.7	71	-0.03
31	T	n-Hexane	1.693	1.556	8.1	71	0.00
32	T	Chloroform	2.037	1.892	7.1	70	-0.02
33	S	1,2-Dichloroethane-d4(SS1)	1.530	1.413	7.6	71	-0.01
34	T	Tetrahydrofuran (THF)	0.680	0.694	-2.1	80	-0.01
35	T	Ethyl tert-Butyl Ether	1.401	1.282	8.5	67	-0.01
36	T	1,2-Dichloroethane	1.628	1.429	12.2	66	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	78	-0.01
38	T	1,1,1-Trichloroethane	0.458	0.408	10.9	67	-0.01

LH 4/9/12

Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2012_04\09\
Data File : 04091202.D
Acq On : 9 Apr 2012 9:28
Operator : LH
Sample : 25ng TO-15 CCV STD
Misc : S25-03291201/S25-03191203
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 09 11:30:10 2012
Quant Method : J:\MS16\METHODS\R16022812.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 29 09:45:36 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.147	0.143	2.7	73	-0.02
40	T	1-Butanol	0.238	0.234	1.7	73	-0.04
41	T	Benzene	1.042	0.934	10.4	73	-0.01
42	T	Carbon Tetrachloride	0.360	0.345	4.2	66	-0.01
43	T	Cyclohexane	0.394	0.366	7.1	71	-0.02
44	T	tert-Amyl Methyl Ether	0.745	0.685	8.1	69	-0.01
45	T	1,2-Dichloropropane	0.246	0.250	-1.6	78	-0.01
46	T	Bromodichloromethane	0.367	0.340	7.4	67	-0.01
47	T	Trichloroethene	0.333	0.312	6.3	70	-0.01
48	T	1,4-Dioxane	0.215	0.211	1.9	73	-0.02
49	T	2,2,4-Trimethylpentane (Iso	0.996	1.026	-3.0	80	-0.01
50	T	Methyl Methacrylate	0.107	0.109	-1.9	72	-0.02
51	T	n-Heptane	0.247	0.241	2.4	74	-0.01
52	T	cis-1,3-Dichloropropene	0.403	0.419	-4.0	72	0.00
53	T	4-Methyl-2-pentanone	0.206	0.221	-7.3	76	-0.01
54	T	trans-1,3-Dichloropropene	0.360	0.389	-8.1	71	0.00
55	T	1,1,2-Trichloroethane	0.268	0.260	3.0	71	0.00
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	77	0.00
57	S	Toluene-d8 (SS2)	2.312	2.308	0.2	78	0.00
58	T	Toluene	2.564	2.344	8.6	72	-0.01
59	T	2-Hexanone	1.091	0.995	8.8	70	-0.01
60	T	Dibromochloromethane	0.743	0.714	3.9	67	0.00
61	T	1,2-Dibromoethane	0.721	0.689	4.4	69	0.00
62	T	n-Butyl Acetate	1.276	1.264	0.9	74	-0.01
63	T	n-Octane	0.477	0.461	3.4	76	0.00
64	T	Tetrachloroethene	0.888	0.850	4.3	71	0.00
65	T	Chlorobenzene	1.764	1.630	7.6	70	0.00
66	T	Ethylbenzene	2.861	2.650	7.4	70	0.00
67	T	m- & p-Xylenes	2.252	2.058	8.6	68	-0.01
68	T	Bromoform	0.699	0.715	-2.3	67	0.00
69	T	Styrene	1.742	1.684	3.3	69	0.00
70	T	o-Xylene	2.379	2.191	7.9	69	-0.01
71	T	n-Nonane	1.055	0.986	6.5	73	0.00
72	T	1,1,2,2-Tetrachloroethane	1.113	1.025	7.9	68	-0.01
73	S	Bromofluorobenzene (SS3)	0.953	0.959	-0.6	77	0.00
74	T	Cumene	3.129	2.877	8.1	69	0.00
75	T	alpha-Pinene	1.500	1.410	6.0	69	0.00
76	T	n-Propylbenzene	3.601	3.311	8.1	68	0.00

MH 4/9/12

Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2012_04\09\
Data File : 04091202.D
Acq On : 9 Apr 2012 9:28
Operator : LH
Sample : 25ng TO-15 CCV STD
Misc : S25-03291201/S25-03191203
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 09 11:30:10 2012
Quant Method : J:\MS16\METHODS\R16022812.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Feb 29 09:45:36 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	2.904	2.828	2.6	68	-0.01
78	T	4-Ethyltoluene	2.681	2.428	9.4	68	0.00
79	T	1,3,5-Trimethylbenzene	2.442	2.244	8.1	68	0.00
80	T	alpha-Methylstyrene	1.352	1.263	6.6	64	0.00
81	T	2-Ethyltoluene	3.042	2.698	11.3	67	-0.01
82	T	1,2,4-Trimethylbenzene	2.369	2.102	11.3	65	-0.01
83	T	n-Decane	1.180	1.129	4.3	70	0.00
84	T	Benzyl Chloride	1.973	1.998	-1.3	65	-0.01
85	T	1,3-Dichlorobenzene	1.540	1.445	6.2	68	-0.01
86	T	1,4-Dichlorobenzene	1.602	1.490	7.0	68	0.00
87	T	sec-Butylbenzene	3.198	2.970	7.1	67	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.059	2.875	6.0	68	0.00
89	T	1,2,3-Trimethylbenzene	2.440	2.243	8.1	66	-0.01
90	T	1,2-Dichlorobenzene	1.501	1.399	6.8	67	0.00
91	T	d-Limonene	0.835	0.778	6.8	65	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.557	0.582	-4.5	69	0.00
93	T	n-Undecane	1.159	1.204	-3.9	75	0.00
94	T	1,2,4-Trichlorobenzene	1.220	1.274	-4.4	74	0.00
95	T	Naphthalene	4.128	4.004	3.0	72	0.00
96	T	n-Dodecane	1.192	1.339	-12.3	81	0.00
97	T	Hexachlorobutadiene	0.784	0.807	-2.9	76	0.00
98	T	Cyclohexanone	0.842	0.813	3.4	75	-0.01
99	T	tert-Butylbenzene	2.911	2.735	6.0	68	0.00
100	T	n-Butylbenzene	2.453	2.299	6.3	67	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Response Factor Report MS07

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
1)	I	Bromochloromethan	ISTD										
2)	T	Dichlorodifluorom	3.784	3.527	3.467	3.822	3.279	2.986	2.875	3.155	2.920	3.313	10.83
3)	T	Chloromethane		1.470	0.956	1.190	0.904	0.778	0.569	0.897	0.827	0.949	28.81
4)	T	Vinyl Chloride	2.802	2.749	2.588	3.044	2.597	2.406	2.314	2.588	2.446	2.615	8.57
5)	T	Bromomethane	1.894	1.496	1.211	1.613	1.335	1.208	1.105	1.433	1.367	1.407	17.11
6)	T	Chloroethane	1.511	1.416	1.357	1.517	1.295	1.237	1.195	1.312	1.224	1.340	8.92
7)	T	Acetone				1.548	1.214	1.122	1.080	1.193	1.090	1.208	14.52
8)	T	Trichlorofluorome	3.051	2.887	2.831	3.145	2.692	2.565	2.447	2.691	2.536	2.761	8.59
9)	T	1,1-Dichloroethen	1.591	1.440	1.366	1.547	1.322	1.229	1.214	1.385	1.295	1.376	9.52
10)	T	Methylene Chlorid		2.134	1.795	1.866	1.536	1.426	1.404	1.494	1.411	1.633	16.43
11)	T	Trichlorotrifluor	1.408	1.325	1.295	1.376	1.169	1.081	1.062	1.170	1.097	1.220	10.87
12)	T	trans-1,2-Dichlor	1.972	1.710	1.589	1.762	1.505	1.406	1.393	1.512	1.439	1.588	12.18
13)	T	1,1-Dichloroethan	3.265	3.020	3.016	3.383	2.925	2.756	2.681	2.937	2.841	2.980	7.60
14)	T	Methyl tert-Butyl	5.168	4.740	4.762	5.045	4.335	4.137	4.166	4.690	4.471	4.613	7.90
15)	T	cis-1,2-Dichloroe	1.885	1.626	1.630	1.776	1.524	1.434	1.388	1.575	1.482	1.591	10.09
16)	T	Chloroform			3.041	3.257	2.586	2.390	2.280	2.524	2.374	2.636	14.03
17)	S	1,2-Dichloroethan	2.000	2.002	2.032	2.018	1.989	1.973	1.960	1.938	1.932	1.983	1.75
18)	T	1,2-Dichloroethan	2.582	2.460	2.375	2.604	2.222	2.090	1.988	2.222	2.094	2.293	9.73
19)	T	1,1,1-Trichloroet	2.587	2.431	2.340	2.573	2.191	2.059	2.007	2.278	2.150	2.291	9.18
20)	T	Benzene			7.536	7.534	6.055	5.665	5.395	5.903	5.468	6.222	14.88
21)	T	Carbon Tetrachlor	2.280	1.842	1.769	1.950	1.676	1.579	1.549	1.771	1.692	1.790	12.41
22)	I	1,4-Difluorobenze	ISTD										
23)	T	1,2-Dichloropropa	0.417	0.397	0.373	0.409	0.354	0.331	0.319	0.358	0.336	0.366	9.68
24)	T	Bromodichlorometh	0.491	0.464	0.436	0.489	0.420	0.398	0.394	0.447	0.416	0.439	8.26
25)	T	Trichloroethene	0.418	0.379	0.349	0.390	0.324	0.305	0.287	0.326	0.307	0.343	12.96
26)	T	1,4-Dioxane	0.324	0.290	0.270	0.278	0.242	0.231	0.227	0.258	0.243	0.263	11.99
27)	T	cis-1,3-Dichlorop	0.567	0.523	0.508	0.540	0.499	0.484	0.488	0.559	0.522	0.521	5.67
28)	T	trans-1,3-Dichlor	0.457	0.434	0.431	0.444	0.419	0.409	0.417	0.505	0.482	0.444	7.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
29)	T	1,1,2-Trichloroet	0.315	0.296	0.286	0.305	0.263	0.248	0.242	0.274	0.257	0.276	9.32
30)	S	Toluene-d8 (SS2)	1.053	1.071	1.054	1.047	1.051	1.052	1.071	1.060	1.049	1.056	0.84
31)	T	Toluene	1.782	1.541	1.420	1.485	1.269	1.198	1.177	1.307	1.186	1.374	14.76
32)	T	1,2-Dibromoethane	0.379	0.362	0.345	0.362	0.323	0.307	0.304	0.351	0.331	0.340	7.65
33)	T	Tetrachloroethene	0.423	0.394	0.371	0.400	0.341	0.320	0.311	0.347	0.326	0.359	11.03
34)	I	Chlorobenzene-d5	ISTD										
35)	T	Chlorobenzene	4.581	4.172	4.017	4.308	3.688	3.469	3.311	3.705	3.345	3.844	11.68
36)	T	Ethylbenzene	7.604	7.082	6.707	7.235	6.297	6.070	5.915	6.682	5.878	6.608	9.30
37)	T	m,p-Xylene	5.861	5.347	5.132	5.536	4.930	4.777	4.719	5.268	4.558	5.125	8.24
38)	T	o-Xylene	6.505	5.826	5.526	5.889	5.188	4.995	4.950	5.594	4.932	5.490	9.67
39)	T	1,1,2,2-Tetrachlo	2.655	2.674	2.710	2.646	2.437	2.371	2.298	2.761	2.498	2.561	6.40
40)	S	Bromofluorobenzen	1.712	1.701	1.695	1.697	1.683	1.680	1.670	1.642	1.593	1.675	2.20
41)	T	1,3-Dichlorobenze	3.304	3.261	3.222	3.204	2.835	2.719	2.608	3.138	2.846	3.015	8.71
42)	T	1,4-Dichlorobenze	3.470	3.303	3.208	3.208	2.803	2.671	2.579	3.174	2.891	3.034	10.13
43)	T	1,2-Dichlorobenze	3.271	3.123	3.112	3.026	2.662	2.536	2.418	3.053	2.772	2.886	10.31
44)	T	1,2,4-Trichlorobe	2.184	2.118	2.169	1.753	1.641	1.608	1.575	2.139	1.978	1.907	13.66
45)	T	Naphthalene	6.857	6.355	6.704	5.143	5.107	5.172	5.297	8.126	7.328	6.232	17.82
46)	T	Hexachlorobutadie	1.486	1.423	1.403	1.217	1.055	1.013	0.975	1.227	1.145	1.216	15.40

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_04\09\
Data File : 04091203.D
Acq On : 9 Apr 2012 7:01 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00163
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 09 08:15:00 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	82	0.00
2	T	Dichlorodifluoromethane (CF	3.313	2.539	23.4	63	0.00
3	T	Chloromethane	0.949	0.738	22.2	67	0.00
4	T	Vinyl Chloride	2.615	2.065	21.0	65	0.00
5	T	Bromomethane	1.407	1.190	15.4	73	0.00
6	T	Chloroethane	1.340	1.065	20.5	67	0.00
7	T	Acetone	1.208	1.043	13.7	70	0.00
8	T	Trichlorofluoromethane	2.761	2.169	21.4	66	0.00
9	T	1,1-Dichloroethene	1.376	1.147	16.6	71	0.00
10	T	Methylene Chloride	1.633	1.261	22.8	67	0.00
11	T	Trichlorotrifluoroethane	1.220	1.046	14.3	73	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.249	21.3	68	0.00
13	T	1,1-Dichloroethane	2.980	2.362	20.7	66	0.00
14	T	Methyl tert-Butyl Ether	4.613	3.609	21.8	68	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.330	16.4	71	0.00
16	T	Chloroform	2.636	2.237	15.1	71	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.917	3.3	79	0.00
18	T	1,2-Dichloroethane	2.293	1.706	25.6	63	0.00
19	T	1,1,1-Trichloroethane	2.291	1.879	18.0	70	0.00
20	T	Benzene	6.222	5.361	13.8	72	0.00
21	T	Carbon Tetrachloride	1.790	1.425	20.4	69	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
23	T	1,2-Dichloropropane	0.366	0.268	26.8	67	0.00
24	T	Bromodichloromethane	0.439	0.322	26.7	68	0.00
25	T	Trichloroethene	0.343	0.255	25.7	70	0.00
26	T	1,4-Dioxane	0.263	0.198	24.7	73	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.396	24.0	70	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.343	22.7	72	0.00
29	T	1,1,2-Trichloroethane	0.276	0.207	25.0	70	0.00
30	S	Toluene-d8 (SS2)	1.056	1.179	-11.6	99	0.00
31	T	Toluene	1.374	1.051	23.5	73	0.00
32	T	1,2-Dibromoethane	0.340	0.264	22.4	72	0.00
33	T	Tetrachloroethene	0.359	0.287	20.1	75	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	85	0.00
35	T	Chlorobenzene	3.844	3.219	16.3	75	0.00
36	T	Ethylbenzene	6.608	5.416	18.0	74	0.00
37	T	m,p-Xylene	5.125	4.308	15.9	75	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_04\09\
Data File : 04091203.D
Acq On : 9 Apr 2012 7:01 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00163
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 09 08:15:00 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	4.561	16.9	75	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.098	18.1	74	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.861	-11.1	95	0.00
41	T	1,3-Dichlorobenzene	3.015	2.704	10.3	82	0.00
42	T	1,4-Dichlorobenzene	3.034	2.684	11.5	82	0.00
43	T	1,2-Dichlorobenzene	2.886	2.603	9.8	84	0.00
44	T	1,2,4-Trichlorobenzene	1.907	1.808	5.2	94	0.00
45	T	Naphthalene	6.232	6.283	-0.8	105	0.00
46	T	Hexachlorobutadiene	1.216	1.083	10.9	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

KR 4/9/12

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_04\10\
Data File : 04101203.D
Acq On : 10 Apr 2012 9:21 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00163
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 10 10:05:18 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	78	0.00
2	T	Dichlorodifluoromethane (CF	3.313	2.565	22.6	61	0.00
3	T	Chloromethane	0.949	0.735	22.6	63	0.00
4	T	Vinyl Chloride	2.615	2.063	21.1	62	0.00
5	T	Bromomethane	1.407	1.209	14.1	71	0.00
6	T	Chloroethane	1.340	1.091	18.6	66	0.00
7	T	Acetone	1.208	1.070	11.4	69	0.00
8	T	Trichlorofluoromethane	2.761	2.217	19.7	64	0.00
9	T	1,1-Dichloroethene	1.376	1.163	15.5	69	0.00
10	T	Methylene Chloride	1.633	1.296	20.6	66	0.00
11	T	Trichlorotrifluoroethane	1.220	1.078	11.6	72	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.296	18.4	67	0.00
13	T	1,1-Dichloroethane	2.980	2.472	17.0	66	0.00
14	T	Methyl tert-Butyl Ether	4.613	3.623	21.5	65	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.314	17.4	67	0.00
16	T	Chloroform	2.636	2.183	17.2	66	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.970	0.7	77	0.00
18	T	1,2-Dichloroethane	2.293	1.741	24.1	61	0.00
19	T	1,1,1-Trichloroethane	2.291	1.853	19.1	66	0.00
20	T	Benzene	6.222	5.270	15.3	68	0.00
21	T	Carbon Tetrachloride	1.790	1.442	19.4	67	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
23	T	1,2-Dichloropropane	0.366	0.260	29.0	65	0.00
24	T	Bromodichloromethane	0.439	0.306	30.3#	64	0.00
25	T	Trichloroethene	0.343	0.253	26.2	69	0.00
26	T	1,4-Dioxane	0.263	0.199	24.3	73	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.396	24.0	70	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.339	23.6	71	0.00
29	T	1,1,2-Trichloroethane	0.276	0.200	27.5	67	0.00
30	S	Toluene-d8 (SS2)	1.056	1.154	-9.3	97	0.00
31	T	Toluene	1.374	1.027	25.3	72	0.00
32	T	1,2-Dibromoethane	0.340	0.257	24.4	70	0.00
33	T	Tetrachloroethene	0.359	0.284	20.9	74	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	84	0.00
35	T	Chlorobenzene	3.844	3.248	15.5	74	0.00
36	T	Ethylbenzene	6.608	5.549	16.0	74	0.00
37	T	m,p-Xylene	5.125	4.350	15.1	74	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_04\10\
Data File : 04101203.D
Acq On : 10 Apr 2012 9:21 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00163
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 10 10:05:18 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	4.592	16.4	74	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.087	18.5	72	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.858	-10.9	93	0.00
41	T	1,3-Dichlorobenzene	3.015	2.719	9.8	80	0.00
42	T	1,4-Dichlorobenzene	3.034	2.710	10.7	81	0.00
43	T	1,2-Dichlorobenzene	2.886	2.620	9.2	83	0.00
44	T	1,2,4-Trichlorobenzene	1.907	1.807	5.2	92	0.00
45	T	Naphthalene	6.232	6.463	-3.7	106	0.00
46	T	Hexachlorobutadiene	1.216	1.083	10.9	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

LABORATORY REPORT

April 18, 2012

Christopher Cote
Montana DEQ
1100 N. Last Chance Gulch
Helena, MT 59601

RE: Background Indoor Air Study

Dear Christopher:

Enclosed are the results of the samples submitted to our laboratory on April 4, 2012. For your reference, these analyses have been assigned our service request number P1201320.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L11-203; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-11-2; Minnesota Department of Health, NELAP Certificate No. 362188; Washington State Department of Ecology, ELAP Lab ID: C946, State of Utah Department of Health, NELAP Certificate No. CA015272011-1; Los Angeles Department of Building and Safety, Approval No: TA00001. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera
Project Manager

Client: Montana DEQ Service Request No: P1201320
Project: Background Indoor Air Study

CASE NARRATIVE

The samples were received intact under chain of custody on April 4, 2012 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009.

Volatile Organic Compound Analysis

The samples were also analyzed in scan and SIM mode for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

DETAIL SUMMARY REPORT

Client: Montana DEQ
Project ID: Background Indoor Air Study
Service Request: P1201320

Date Received: 4/4/2012
Time Received: 09:50

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC Cans	TO-15 - VOC SIM
31-1F-032412	P1201320-001	Air	3/25/2012	15:35	AC01571	-1.72	3.69	X	X	X
37-1F-032612	P1201320-002	Air	3/27/2012	08:12	AC01118	-4.87	3.59	X	X	X
29-1F-032612	P1201320-003	Air	3/27/2012	14:45	AC01127	-2.68	3.65	X	X	X
DUP-54	P1201320-004	Air	3/27/2012	14:45	AC01749	-5.09	3.72	X	X	X
30-1F-032612	P1201320-005	Air	3/27/2012	16:19	AS00147	-5.30	3.68	X	X	X
33-1B-032712	P1201320-006	Air	3/28/2012	17:52	AC00781	-2.17	3.68	X	X	X
32-1F-032812	P1201320-007	Air	3/29/2012	08:15	AC01142	-2.83	3.72	X	X	X
36-1F-032812	P1201320-008	Air	3/29/2012	11:20	AC01413	-4.51	3.73	X	X	X
34-1F-032912	P1201320-009	Air	3/30/2012	13:36	AC01533	-1.39	3.57	X	X	X
35-1F-032912	P1201320-010	Air	3/30/2012	13:03	AC00943	-4.85	3.66	X	X	X

Columbia Analytical Services

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

CAS Project No. P120120

Company Name & Address (Reporting Information)	MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY PO BOX 200901 1100 N LAST CHANCE GULCH HELENA MT 59620-0901
Project Manager	CHRIS COTE
Phone	(406) 841-5078
Fax	
Email Address for Result Reporting	ccote2@mt.gov ; MARTICHBJ@cdm.com
Project Name	BACKGROUND INDOOR AIR STUDY
Project Number	—
P.O. # / Billing Information	REFERENCE AS: BACKGROUND INDOOR AIR STUDY BILL TO CHRIS COTE OF MDEQ
Sampler (Print & Sign)	SHANNON CALA & JESSICA GUTTING
CAS Contact:	

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: TO-15	Analysis Method: TO-15 SIM	Analysis Method: MA-APH	Comments e.g. Actual Preservative or specific instructions
31-1F-032412	①-1.70	03/25/12	1535	AC01571	FCA00136	-28.5	-9.0	19.5	X	X	X	ANALYZE
37-1F-032612	②-4.84	3/27/12	0812	AC01118	FCA00526	-28.0	-9.0	19.0	X	X	X	PROJECT
29-1F-032612	③-2.65	3/27/12	1445	AC01127	FCA00473	-27.0	-3.5	23.5	X	X	X	SPECIFIC
DUP-54	④-5.14	3/27/12	1445	AC01749	FCA00483	-29.25	-10.0	19.25	X	X	X	LIST OF
30-1F-032612	⑤-5.31	3/27/12	1619	AC00147	FCA00490	-28.0	-9.5	18.5	X	X	X	COMPOUNDS
33-1B-032712	⑥-2.16	3/28/12	1952	AC00781	FCA00050	-28.0	-3.5	24.5	X	X	X	TO PROJECT
32-1F-032812	⑦-2.82	3/29/12	0815	AC01142	FCA00291	-28.0	-5.0	23.0	X	X	X	SPECIFIC
36-1F-032812	⑧-4.52	3/29/12	1120	AC01413	FCA00133	-29.0	-9.5	19.5	X	X	X	REPORTING
34-1F-032912	⑨-1.35	3/30/12	1336	AC01533	FCA00381	-29.5	-3.5	26.0	X	X	X	LIMITS
35-1F-032912	⑩-4.84 -1445 -1136	3/30/12	1303	AC00943	FCA00500	-25.5	-6.5	19.0	X	X	X	

Report Tier Levels - please select

Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) X
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: CSV & EXCEL FORMAT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Shannon Cala	Date: 04.03.12	Time: 0945	Received by: (Signature)		Date: 4/4/12	Time: 0950
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Date:	Time:

Cooler / Blank Temperature ____°C

Columbia Analytical Services
Now part of the ALS Group
2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Sample Acceptance Check Form

Client: Montana DEQ Work order: P1201320

Project: Background Indoor Air Study

Sample(s) received on: 4/4/12 Date opened: 4/4/12 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201320-001.01	6.0 L Ambient Can					
P1201320-002.01	6.0 L Ambient Can					
P1201320-003.01	6.0 L Ambient Can					
P1201320-004.01	6.0 L Ambient Can					
P1201320-005.01	6.0 L Silonite Can					
P1201320-006.01	6.0 L Ambient Can					
P1201320-007.01	6.0 L Ambient Can					
P1201320-008.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

Sample Acceptance Check Form

Client: Montana DEQ   Work order: P1201320
Project: Background Indoor Air Study
Sample(s) received on: 4/4/12   Date opened: 4/4/12   by: MZAMORA

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1201320-009.01	6.0 L Ambient Can					
P1201320-010.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **31-1F-032412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-001

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01571

Date Collected: 3/25/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.72 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.42

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**94**	28	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**44**	14	
C_9 - C_{10} Aromatic Hydrocarbons	ND	7.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **37-1F-032612** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-002

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01118

Initial Pressure (psig): -4.87 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.86

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**71**	37	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**62**	19	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **29-1F-032612**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-003

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01127

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.68 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.53

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**370**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**30**	15	
C_9 - C_{10} Aromatic Hydrocarbons	**34**	7.7	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **DUP-54**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-004

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01749

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**280**	38	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**24**	19	
C_9 - C_{10} Aromatic Hydrocarbons	**28**	9.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **30-1F-032612**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-005

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00147

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.30 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.96

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**47**	39	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**23**	20	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.8	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **33-1B-032712** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-006

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:
Container ID: AC00781

Initial Pressure (psig): -2.17 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.47

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**79**	59	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	29	
C_9 - C_{10} Aromatic Hydrocarbons	ND	15	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **32-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-007

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01142

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.83 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.55

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**110**	31	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**46**	16	
C_9 - C_{10} Aromatic Hydrocarbons	**8.6**	7.8	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **36-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-008

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01413

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.51 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.81

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**60**	36	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**18**	18	
C_9 - C_{10} Aromatic Hydrocarbons	ND	9.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **34-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-009

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01533

Date Collected: 3/30/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.39 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.37

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**46**	27	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	14	
C_9 - C_{10} Aromatic Hydrocarbons	ND	6.9	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **35-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-010

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00943

Date Collected: 3/30/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.85 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.86

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	**81**	37	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	**29**	19	
C_9 - C_{10} Aromatic Hydrocarbons	**12**	9.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-MB

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	ND	20	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	ND	10	
C_9 - C_{10} Aromatic Hydrocarbons	ND	5.0	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**25.1**	**102**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**25.2**	**101**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**46.3**	**95**	70-130	

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
C5 - C8 Aliphatic Hydrocarbons	24.5	**24.6**	**100**	70-130	
C9 - C12 Aliphatic Hydrocarbons	25.0	**24.8**	**99**	70-130	
C9 - C10 Aromatic Hydrocarbons	48.5	**45.7**	**94**	70-130	

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **DUP-54** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-004DUP

Test Code: Massachusetts APH, Revision 1, December 2009 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01749

Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

Compound	Sample Result µg/m³	Duplicate Sample Result µg/m³	Average µg/m³	% RPD	RPD Limit	Data Qualifier
C_5 - C_8 Aliphatic Hydrocarbons[1,2]	282	280	281	**0.7**	30	
C_9 - C_{12} Aliphatic Hydrocarbons[1,3]	23.7	21.4	22.55	**10**	30	
C_9 - C_{10} Aromatic Hydrocarbons	28.3	28.5	28.4	**0.7**	30	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
[1]Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C_9-C_{10} Aromatic Hydrocarbons.
ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **31-1F-032412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01571

Date Collected: 3/25/12
Date Received: 4/4/12
Date Analyzed: 4/7/12 & 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -1.72 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**2.4**	0.71	**1.4**	0.41	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.71	**0.43**	0.14	
74-87-3	Chloromethane	ND	0.71	ND	0.34	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.71	ND	0.10	
106-99-0	1,3-Butadiene	ND	0.71	ND	0.32	
74-83-9	Bromomethane	ND	0.71	ND	0.18	
75-00-3	Chloroethane	ND	0.71	ND	0.27	
64-17-5	Ethanol	**1,300**	71	**700**	38	**D**
75-05-8	Acetonitrile	**0.79**	0.71	**0.47**	0.42	
107-02-8	Acrolein	**4.3**	2.8	**1.9**	1.2	
67-64-1	Acetone	**83**	7.1	**35**	3.0	
75-69-4	Trichlorofluoromethane	**1.1**	0.71	**0.20**	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**7.3**	1.4	**3.0**	0.58	
107-13-1	Acrylonitrile	ND	0.71	ND	0.33	
75-35-4	1,1-Dichloroethene	ND	0.71	ND	0.18	
75-09-2	Methylene Chloride	ND	0.71	ND	0.20	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.71	ND	0.23	
76-13-1	Trichlorotrifluoroethane	ND	0.71	ND	0.093	
75-15-0	Carbon Disulfide	ND	7.1	ND	2.3	
156-60-5	trans-1,2-Dichloroethene	ND	0.71	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.71	ND	0.18	
1634-04-4	Methyl tert-Butyl Ether	ND	0.71	ND	0.20	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **31-1F-032412**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01571

Date Collected: 3/25/12
Date Received: 4/4/12
Date Analyzed: 4/7/12 & 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -1.72 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.1	ND	2.0	
156-59-2	cis-1,2-Dichloroethene	ND	0.71	ND	0.18	
78-93-3	2-Butanone (MEK)	ND	7.1	ND	2.4	
141-78-6	Ethyl Acetate	**28**	1.4	**7.9**	0.39	
110-54-3	n-Hexane	**2.2**	0.71	**0.63**	0.20	
67-66-3	Chloroform	**1.2**	0.71	**0.25**	0.15	
109-99-9	Tetrahydrofuran (THF)	**0.80**	0.71	**0.27**	0.24	
71-55-6	1,1,1-Trichloroethane	ND	0.71	ND	0.13	
56-23-5	Carbon Tetrachloride	**0.88**	0.71	**0.14**	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.41	
78-87-5	1,2-Dichloropropane	ND	0.71	ND	0.15	
75-27-4	Bromodichloromethane	ND	0.71	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.71	ND	0.20	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.35	
142-82-5	n-Heptane	**1.3**	0.71	**0.33**	0.17	
10061-01-5	cis-1,3-Dichloropropene	ND	0.71	ND	0.16	
108-10-1	4-Methyl-2-pentanone	**0.87**	0.71	**0.21**	0.17	
10061-02-6	trans-1,3-Dichloropropene	ND	0.71	ND	0.16	
108-88-3	Toluene	**6.1**	0.71	**1.6**	0.19	
591-78-6	2-Hexanone	**0.96**	0.71	**0.24**	0.17	
124-48-1	Dibromochloromethane	ND	0.71	ND	0.083	
106-93-4	1,2-Dibromoethane	ND	0.71	ND	0.092	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **31-1F-032412** CAS Sample ID: P1201320-001
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12 & 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01571

Initial Pressure (psig): -1.72 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**5.9**	0.71	**1.2**	0.15	
111-65-9	n-Octane	ND	0.71	ND	0.15	
108-90-7	Chlorobenzene	ND	0.71	ND	0.15	
179601-23-1	m,p-Xylenes	**2.3**	1.4	**0.52**	0.33	
75-25-2	Bromoform	ND	0.71	ND	0.069	
100-42-5	Styrene	**1.6**	0.71	**0.38**	0.17	
95-47-6	o-Xylene	ND	0.71	ND	0.16	
111-84-2	n-Nonane	ND	0.71	ND	0.14	
98-82-8	Cumene	ND	0.71	ND	0.14	
80-56-8	alpha-Pinene	**3.3**	0.71	**0.60**	0.13	
103-65-1	n-Propylbenzene	ND	0.71	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.71	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.71	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.71	ND	0.14	
100-44-7	Benzyl Chloride	ND	0.71	ND	0.14	
541-73-1	1,3-Dichlorobenzene	ND	0.71	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.71	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.71	ND	0.12	
5989-27-5	d-Limonene	**38**	0.71	**6.7**	0.13	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.71	ND	0.073	
120-82-1	1,2,4-Trichlorobenzene	ND	0.71	ND	0.096	
87-68-3	Hexachlorobutadiene	ND	0.71	ND	0.067	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **37-1F-032612**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01118

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/7/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.87 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**1.3**	0.93	**0.77**	0.54	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.93	**0.42**	0.19	
74-87-3	Chloromethane	ND	0.93	ND	0.45	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.93	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.93	ND	0.42	
74-83-9	Bromomethane	ND	0.93	ND	0.24	
75-00-3	Chloroethane	ND	0.93	ND	0.35	
64-17-5	Ethanol	**320**	9.3	**170**	4.9	
75-05-8	Acetonitrile	ND	0.93	ND	0.55	
107-02-8	Acrolein	ND	3.7	ND	1.6	
67-64-1	Acetone	**37**	9.3	**16**	3.9	
75-69-4	Trichlorofluoromethane	**1.1**	0.93	**0.20**	0.17	
67-63-0	2-Propanol (Isopropyl Alcohol)	**3.3**	1.9	**1.4**	0.76	
107-13-1	Acrylonitrile	ND	0.93	ND	0.43	
75-35-4	1,1-Dichloroethene	ND	0.93	ND	0.23	
75-09-2	Methylene Chloride	ND	0.93	ND	0.27	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.93	ND	0.30	
76-13-1	Trichlorotrifluoroethane	ND	0.93	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.3	ND	3.0	
156-60-5	trans-1,2-Dichloroethene	ND	0.93	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.93	ND	0.23	
1634-04-4	Methyl tert-Butyl Ether	ND	0.93	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **37-1F-032612** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-002

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01118

Initial Pressure (psig): -4.87 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.3	ND	2.6	
156-59-2	cis-1,2-Dichloroethene	ND	0.93	ND	0.23	
78-93-3	2-Butanone (MEK)	ND	9.3	ND	3.2	
141-78-6	Ethyl Acetate	**3.9**	1.9	**1.1**	0.52	
110-54-3	n-Hexane	**1.3**	0.93	**0.36**	0.26	
67-66-3	Chloroform	ND	0.93	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.93	ND	0.32	
71-55-6	1,1,1-Trichloroethane	ND	0.93	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.93	ND	0.15	
110-82-7	Cyclohexane	ND	1.9	ND	0.54	
78-87-5	1,2-Dichloropropane	ND	0.93	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.93	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.93	ND	0.26	
80-62-6	Methyl Methacrylate	ND	1.9	ND	0.45	
142-82-5	n-Heptane	**2.6**	0.93	**0.63**	0.23	
10061-01-5	cis-1,3-Dichloropropene	ND	0.93	ND	0.20	
108-10-1	4-Methyl-2-pentanone	**1.7**	0.93	**0.42**	0.23	
10061-02-6	trans-1,3-Dichloropropene	ND	0.93	ND	0.20	
108-88-3	Toluene	**26**	0.93	**7.0**	0.25	
591-78-6	2-Hexanone	ND	0.93	ND	0.23	
124-48-1	Dibromochloromethane	ND	0.93	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.93	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **37-1F-032612** CAS Sample ID: P1201320-002
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01118

Initial Pressure (psig): -4.87 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.93	ND	0.20	
111-65-9	n-Octane	**1.0**	0.93	**0.22**	0.20	
108-90-7	Chlorobenzene	ND	0.93	ND	0.20	
179601-23-1	m,p-Xylenes	**2.8**	1.9	**0.64**	0.43	
75-25-2	Bromoform	ND	0.93	ND	0.090	
100-42-5	Styrene	ND	0.93	ND	0.22	
95-47-6	o-Xylene	ND	0.93	ND	0.21	
111-84-2	n-Nonane	**4.3**	0.93	**0.81**	0.18	
98-82-8	Cumene	ND	0.93	ND	0.19	
80-56-8	alpha-Pinene	**4.9**	0.93	**0.88**	0.17	
103-65-1	n-Propylbenzene	ND	0.93	ND	0.19	
622-96-8	4-Ethyltoluene	ND	0.93	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.93	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	ND	0.93	ND	0.19	
100-44-7	Benzyl Chloride	ND	0.93	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.93	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.93	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.93	ND	0.15	
5989-27-5	d-Limonene	**33**	0.93	**6.0**	0.17	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.93	ND	0.096	
120-82-1	1,2,4-Trichlorobenzene	ND	0.93	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.93	ND	0.087	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **29-1F-032612**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01127

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.68 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**5.0**	0.77	**2.9**	0.44	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.77	**0.42**	0.15	
74-87-3	Chloromethane	**0.77**	0.77	**0.37**	0.37	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.77	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.77	ND	0.35	
74-83-9	Bromomethane	ND	0.77	ND	0.20	
75-00-3	Chloroethane	ND	0.77	ND	0.29	
64-17-5	Ethanol	**69**	7.7	**37**	4.1	
75-05-8	Acetonitrile	ND	0.77	ND	0.46	
107-02-8	Acrolein	ND	3.1	ND	1.3	
67-64-1	Acetone	**54**	7.7	**23**	3.2	
75-69-4	Trichlorofluoromethane	**1.1**	0.77	**0.20**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**21**	1.5	**8.6**	0.62	
107-13-1	Acrylonitrile	ND	0.77	ND	0.35	
75-35-4	1,1-Dichloroethene	ND	0.77	ND	0.19	
75-09-2	Methylene Chloride	ND	0.77	ND	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.77	ND	0.24	
76-13-1	Trichlorotrifluoroethane	ND	0.77	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.7	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.77	ND	0.19	
75-34-3	1,1-Dichloroethane	ND	0.77	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.77	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **29-1F-032612** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-003

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01127

Initial Pressure (psig): -2.68 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.7	ND	2.2	
156-59-2	cis-1,2-Dichloroethene	ND	0.77	ND	0.19	
78-93-3	2-Butanone (MEK)	ND	7.7	ND	2.6	
141-78-6	Ethyl Acetate	**1.6**	1.5	**0.45**	0.42	
110-54-3	n-Hexane	**16**	0.77	**4.5**	0.22	
67-66-3	Chloroform	ND	0.77	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	**2.9**	0.77	**1.0**	0.26	
71-55-6	1,1,1-Trichloroethane	ND	0.77	ND	0.14	
56-23-5	Carbon Tetrachloride	ND	0.77	ND	0.12	
110-82-7	Cyclohexane	**6.0**	1.5	**1.7**	0.44	
78-87-5	1,2-Dichloropropane	ND	0.77	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.77	ND	0.11	
123-91-1	1,4-Dioxane	ND	0.77	ND	0.21	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.37	
142-82-5	n-Heptane	**4.2**	0.77	**1.0**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.77	ND	0.17	
108-10-1	4-Methyl-2-pentanone	ND	0.77	ND	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.77	ND	0.17	
108-88-3	Toluene	**56**	0.77	**15**	0.20	
591-78-6	2-Hexanone	ND	0.77	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.77	ND	0.090	
106-93-4	1,2-Dibromoethane	ND	0.77	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **29-1F-032612** CAS Sample ID: P1201320-003
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01127

Initial Pressure (psig): -2.68 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.77	ND	0.16	
111-65-9	n-Octane	**1.5**	0.77	**0.31**	0.16	
108-90-7	Chlorobenzene	ND	0.77	ND	0.17	
179601-23-1	m,p-Xylenes	**26**	1.5	**6.0**	0.35	
75-25-2	Bromoform	ND	0.77	ND	0.074	
100-42-5	Styrene	**2.0**	0.77	**0.47**	0.18	
95-47-6	o-Xylene	**7.5**	0.77	**1.7**	0.18	
111-84-2	n-Nonane	**0.88**	0.77	**0.17**	0.15	
98-82-8	Cumene	ND	0.77	ND	0.16	
80-56-8	alpha-Pinene	**7.6**	0.77	**1.4**	0.14	
103-65-1	n-Propylbenzene	**1.6**	0.77	**0.32**	0.16	
622-96-8	4-Ethyltoluene	**2.8**	0.77	**0.57**	0.16	
108-67-8	1,3,5-Trimethylbenzene	**2.7**	0.77	**0.54**	0.16	
95-63-6	1,2,4-Trimethylbenzene	**8.5**	0.77	**1.7**	0.16	
100-44-7	Benzyl Chloride	ND	0.77	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.77	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.77	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.77	ND	0.13	
5989-27-5	d-Limonene	**11**	0.77	**2.0**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.77	ND	0.079	
120-82-1	1,2,4-Trichlorobenzene	ND	0.77	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.77	ND	0.072	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **DUP-54**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01749

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**12**	0.96	**6.8**	0.56	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.96	**0.41**	0.19	
74-87-3	Chloromethane	ND	0.96	ND	0.47	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.96	ND	0.14	
106-99-0	1,3-Butadiene	ND	0.96	ND	0.43	
74-83-9	Bromomethane	ND	0.96	ND	0.25	
75-00-3	Chloroethane	ND	0.96	ND	0.36	
64-17-5	Ethanol	**65**	9.6	**34**	5.1	
75-05-8	Acetonitrile	ND	0.96	ND	0.57	
107-02-8	Acrolein	ND	3.8	ND	1.7	
67-64-1	Acetone	**52**	9.6	**22**	4.0	
75-69-4	Trichlorofluoromethane	**1.1**	0.96	**0.20**	0.17	
67-63-0	2-Propanol (Isopropyl Alcohol)	**67**	1.9	**27**	0.78	
107-13-1	Acrylonitrile	ND	0.96	ND	0.44	
75-35-4	1,1-Dichloroethene	ND	0.96	ND	0.24	
75-09-2	Methylene Chloride	ND	0.96	ND	0.28	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.96	ND	0.31	
76-13-1	Trichlorotrifluoroethane	ND	0.96	ND	0.13	
75-15-0	Carbon Disulfide	ND	9.6	ND	3.1	
156-60-5	trans-1,2-Dichloroethene	ND	0.96	ND	0.24	
75-34-3	1,1-Dichloroethane	ND	0.96	ND	0.24	
1634-04-4	Methyl tert-Butyl Ether	ND	0.96	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **DUP-54** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-004

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01749

Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.6	ND	2.7	
156-59-2	cis-1,2-Dichloroethene	ND	0.96	ND	0.24	
78-93-3	2-Butanone (MEK)	ND	9.6	ND	3.3	
141-78-6	Ethyl Acetate	ND	1.9	ND	0.53	
110-54-3	n-Hexane	**12**	0.96	**3.4**	0.27	
67-66-3	Chloroform	ND	0.96	ND	0.20	
109-99-9	Tetrahydrofuran (THF)	**2.2**	0.96	**0.74**	0.33	
71-55-6	1,1,1-Trichloroethane	ND	0.96	ND	0.18	
56-23-5	Carbon Tetrachloride	ND	0.96	ND	0.15	
110-82-7	Cyclohexane	**4.5**	1.9	**1.3**	0.56	
78-87-5	1,2-Dichloropropane	ND	0.96	ND	0.21	
75-27-4	Bromodichloromethane	ND	0.96	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.96	ND	0.27	
80-62-6	Methyl Methacrylate	ND	1.9	ND	0.47	
142-82-5	n-Heptane	**3.2**	0.96	**0.79**	0.23	
10061-01-5	cis-1,3-Dichloropropene	ND	0.96	ND	0.21	
108-10-1	4-Methyl-2-pentanone	ND	0.96	ND	0.23	
10061-02-6	trans-1,3-Dichloropropene	ND	0.96	ND	0.21	
108-88-3	Toluene	**45**	0.96	**12**	0.25	
591-78-6	2-Hexanone	ND	0.96	ND	0.23	
124-48-1	Dibromochloromethane	ND	0.96	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.96	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **DUP-54** CAS Sample ID: P1201320-004
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01749

Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.96	ND	0.20	
111-65-9	n-Octane	**1.2**	0.96	**0.26**	0.21	
108-90-7	Chlorobenzene	ND	0.96	ND	0.21	
179601-23-1	m,p-Xylenes	**21**	1.9	**4.9**	0.44	
75-25-2	Bromoform	ND	0.96	ND	0.093	
100-42-5	Styrene	**1.8**	0.96	**0.42**	0.23	
95-47-6	o-Xylene	**6.2**	0.96	**1.4**	0.22	
111-84-2	n-Nonane	ND	0.96	ND	0.18	
98-82-8	Cumene	ND	0.96	ND	0.20	
80-56-8	alpha-Pinene	**6.0**	0.96	**1.1**	0.17	
103-65-1	n-Propylbenzene	**1.4**	0.96	**0.28**	0.20	
622-96-8	4-Ethyltoluene	**2.4**	0.96	**0.48**	0.20	
108-67-8	1,3,5-Trimethylbenzene	**2.3**	0.96	**0.46**	0.20	
95-63-6	1,2,4-Trimethylbenzene	**7.2**	0.96	**1.5**	0.20	
100-44-7	Benzyl Chloride	ND	0.96	ND	0.19	
541-73-1	1,3-Dichlorobenzene	ND	0.96	ND	0.16	
106-46-7	1,4-Dichlorobenzene	ND	0.96	ND	0.16	
95-50-1	1,2-Dichlorobenzene	ND	0.96	ND	0.16	
5989-27-5	d-Limonene	**7.0**	0.96	**1.3**	0.17	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.96	ND	0.099	
120-82-1	1,2,4-Trichlorobenzene	ND	0.96	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.96	ND	0.090	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **30-1F-032612**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00147

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.30 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**1.4**	0.98	**0.82**	0.57	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.5**	0.98	**0.50**	0.20	
74-87-3	Chloromethane	ND	0.98	ND	0.47	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.98	ND	0.14	
106-99-0	1,3-Butadiene	ND	0.98	ND	0.44	
74-83-9	Bromomethane	ND	0.98	ND	0.25	
75-00-3	Chloroethane	ND	0.98	ND	0.37	
64-17-5	Ethanol	**130**	9.8	**70**	5.2	
75-05-8	Acetonitrile	ND	0.98	ND	0.58	
107-02-8	Acrolein	ND	3.9	ND	1.7	
67-64-1	Acetone	**20**	9.8	**8.5**	4.1	
75-69-4	Trichlorofluoromethane	**1.1**	0.98	**0.20**	0.17	
67-63-0	2-Propanol (Isopropyl Alcohol)	**6.0**	2.0	**2.4**	0.80	
107-13-1	Acrylonitrile	ND	0.98	ND	0.45	
75-35-4	1,1-Dichloroethene	ND	0.98	ND	0.25	
75-09-2	Methylene Chloride	ND	0.98	ND	0.28	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.98	ND	0.31	
76-13-1	Trichlorotrifluoroethane	ND	0.98	ND	0.13	
75-15-0	Carbon Disulfide	ND	9.8	ND	3.1	
156-60-5	trans-1,2-Dichloroethene	ND	0.98	ND	0.25	
75-34-3	1,1-Dichloroethane	ND	0.98	ND	0.24	
1634-04-4	Methyl tert-Butyl Ether	ND	0.98	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **30-1F-032612** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-005

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00147

Initial Pressure (psig): -5.30 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.8	ND	2.8	
156-59-2	cis-1,2-Dichloroethene	ND	0.98	ND	0.25	
78-93-3	2-Butanone (MEK)	ND	9.8	ND	3.3	
141-78-6	Ethyl Acetate	ND	2.0	ND	0.54	
110-54-3	n-Hexane	**2.0**	0.98	**0.57**	0.28	
67-66-3	Chloroform	ND	0.98	ND	0.20	
109-99-9	Tetrahydrofuran (THF)	ND	0.98	ND	0.33	
71-55-6	1,1,1-Trichloroethane	ND	0.98	ND	0.18	
56-23-5	Carbon Tetrachloride	ND	0.98	ND	0.16	
110-82-7	Cyclohexane	ND	2.0	ND	0.57	
78-87-5	1,2-Dichloropropane	ND	0.98	ND	0.21	
75-27-4	Bromodichloromethane	ND	0.98	ND	0.15	
123-91-1	1,4-Dioxane	ND	0.98	ND	0.27	
80-62-6	Methyl Methacrylate	ND	2.0	ND	0.48	
142-82-5	n-Heptane	ND	0.98	ND	0.24	
10061-01-5	cis-1,3-Dichloropropene	ND	0.98	ND	0.22	
108-10-1	4-Methyl-2-pentanone	ND	0.98	ND	0.24	
10061-02-6	trans-1,3-Dichloropropene	ND	0.98	ND	0.22	
108-88-3	Toluene	**7.7**	0.98	**2.0**	0.26	
591-78-6	2-Hexanone	ND	0.98	ND	0.24	
124-48-1	Dibromochloromethane	ND	0.98	ND	0.12	
106-93-4	1,2-Dibromoethane	ND	0.98	ND	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **30-1F-032612** CAS Sample ID: P1201320-005
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00147

Initial Pressure (psig): -5.30 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.98	ND	0.21	
111-65-9	n-Octane	ND	0.98	ND	0.21	
108-90-7	Chlorobenzene	ND	0.98	ND	0.21	
179601-23-1	m,p-Xylenes	**3.9**	2.0	**0.90**	0.45	
75-25-2	Bromoform	ND	0.98	ND	0.095	
100-42-5	Styrene	ND	0.98	ND	0.23	
95-47-6	o-Xylene	**1.2**	0.98	**0.28**	0.23	
111-84-2	n-Nonane	ND	0.98	ND	0.19	
98-82-8	Cumene	ND	0.98	ND	0.20	
80-56-8	alpha-Pinene	**2.0**	0.98	**0.36**	0.18	
103-65-1	n-Propylbenzene	ND	0.98	ND	0.20	
622-96-8	4-Ethyltoluene	ND	0.98	ND	0.20	
108-67-8	1,3,5-Trimethylbenzene	ND	0.98	ND	0.20	
95-63-6	1,2,4-Trimethylbenzene	**1.2**	0.98	**0.23**	0.20	
100-44-7	Benzyl Chloride	ND	0.98	ND	0.19	
541-73-1	1,3-Dichlorobenzene	ND	0.98	ND	0.16	
106-46-7	1,4-Dichlorobenzene	ND	0.98	ND	0.16	
95-50-1	1,2-Dichlorobenzene	ND	0.98	ND	0.16	
5989-27-5	d-Limonene	**22**	0.98	**4.0**	0.18	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.98	ND	0.10	
120-82-1	1,2,4-Trichlorobenzene	ND	0.98	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.98	ND	0.092	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **33-1B-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00781

Date Collected: 3/28/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 0.50 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -2.17 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**850**	15	**500**	8.5	**D**
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.2**	1.5	**0.45**	0.30	
74-87-3	Chloromethane	ND	1.5	ND	0.71	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	1.5	ND	0.21	
106-99-0	1,3-Butadiene	ND	1.5	ND	0.66	
74-83-9	Bromomethane	ND	1.5	ND	0.38	
75-00-3	Chloroethane	ND	1.5	ND	0.56	
64-17-5	Ethanol	**2,000**	150	**1,000**	78	**D**
75-05-8	Acetonitrile	**1.7**	1.5	**1.0**	0.88	
107-02-8	Acrolein	ND	5.9	ND	2.6	
67-64-1	Acetone	**130**	15	**53**	6.2	
75-69-4	Trichlorofluoromethane	ND	1.5	ND	0.26	
67-63-0	2-Propanol (Isopropyl Alcohol)	**12**	2.9	**4.9**	1.2	
107-13-1	Acrylonitrile	ND	1.5	ND	0.68	
75-35-4	1,1-Dichloroethene	ND	1.5	ND	0.37	
75-09-2	Methylene Chloride	**2.2**	1.5	**0.63**	0.42	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	1.5	ND	0.47	
76-13-1	Trichlorotrifluoroethane	ND	1.5	ND	0.19	
75-15-0	Carbon Disulfide	ND	15	ND	4.7	
156-60-5	trans-1,2-Dichloroethene	ND	1.5	ND	0.37	
75-34-3	1,1-Dichloroethane	ND	1.5	ND	0.36	
1634-04-4	Methyl tert-Butyl Ether	ND	1.5	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **33-1B-032712**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00781

Date Collected: 3/28/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 0.50 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -2.17 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	15	ND	4.2	
156-59-2	cis-1,2-Dichloroethene	ND	1.5	ND	0.37	
78-93-3	2-Butanone (MEK)	ND	15	ND	5.0	
141-78-6	Ethyl Acetate	**4.0**	2.9	**1.1**	0.82	
110-54-3	n-Hexane	ND	1.5	ND	0.42	
67-66-3	Chloroform	**2.1**	1.5	**0.43**	0.30	
109-99-9	Tetrahydrofuran (THF)	**2.5**	1.5	**0.84**	0.50	
71-55-6	1,1,1-Trichloroethane	ND	1.5	ND	0.27	
56-23-5	Carbon Tetrachloride	ND	1.5	ND	0.23	
110-82-7	Cyclohexane	**3.7**	2.9	**1.1**	0.85	
78-87-5	1,2-Dichloropropane	ND	1.5	ND	0.32	
75-27-4	Bromodichloromethane	ND	1.5	ND	0.22	
123-91-1	1,4-Dioxane	ND	1.5	ND	0.41	
80-62-6	Methyl Methacrylate	ND	2.9	ND	0.72	
142-82-5	n-Heptane	**1.7**	1.5	**0.42**	0.36	
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	ND	0.32	
108-10-1	4-Methyl-2-pentanone	ND	1.5	ND	0.36	
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	ND	0.32	
108-88-3	Toluene	**8.7**	1.5	**2.3**	0.39	
591-78-6	2-Hexanone	ND	1.5	ND	0.36	
124-48-1	Dibromochloromethane	ND	1.5	ND	0.17	
106-93-4	1,2-Dibromoethane	ND	1.5	ND	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **33-1B-032712** CAS Sample ID: P1201320-006
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes: 0.050 Liter(s)
Container ID: AC00781

Initial Pressure (psig): -2.17 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**4.2**	1.5	**0.88**	0.31	
111-65-9	n-Octane	ND	1.5	ND	0.31	
108-90-7	Chlorobenzene	ND	1.5	ND	0.32	
179601-23-1	m,p-Xylenes	ND	2.9	ND	0.68	
75-25-2	Bromoform	ND	1.5	ND	0.14	
100-42-5	Styrene	ND	1.5	ND	0.35	
95-47-6	o-Xylene	ND	1.5	ND	0.34	
111-84-2	n-Nonane	ND	1.5	ND	0.28	
98-82-8	Cumene	ND	1.5	ND	0.30	
80-56-8	alpha-Pinene	**52**	1.5	**9.3**	0.26	
103-65-1	n-Propylbenzene	ND	1.5	ND	0.30	
622-96-8	4-Ethyltoluene	ND	1.5	ND	0.30	
108-67-8	1,3,5-Trimethylbenzene	ND	1.5	ND	0.30	
95-63-6	1,2,4-Trimethylbenzene	ND	1.5	ND	0.30	
100-44-7	Benzyl Chloride	ND	1.5	ND	0.28	
541-73-1	1,3-Dichlorobenzene	ND	1.5	ND	0.24	
106-46-7	1,4-Dichlorobenzene	ND	1.5	ND	0.24	
95-50-1	1,2-Dichlorobenzene	ND	1.5	ND	0.24	
5989-27-5	d-Limonene	**46**	1.5	**8.3**	0.26	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.5	ND	0.15	
120-82-1	1,2,4-Trichlorobenzene	ND	1.5	ND	0.20	
87-68-3	Hexachlorobutadiene	ND	1.5	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **32-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-007

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01142

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.83 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**14**	0.78	**8.4**	0.45	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.78	**0.42**	0.16	
74-87-3	Chloromethane	**1.0**	0.78	**0.51**	0.38	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.78	ND	0.11	
106-99-0	1,3-Butadiene	ND	0.78	ND	0.35	
74-83-9	Bromomethane	ND	0.78	ND	0.20	
75-00-3	Chloroethane	ND	0.78	ND	0.29	
64-17-5	Ethanol	**1,300**	78	**670**	41	**D**
75-05-8	Acetonitrile	ND	0.78	ND	0.46	
107-02-8	Acrolein	ND	3.1	ND	1.4	
67-64-1	Acetone	**130**	7.8	**56**	3.3	
75-69-4	Trichlorofluoromethane	**1.2**	0.78	**0.22**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**57**	1.6	**23**	0.63	
107-13-1	Acrylonitrile	ND	0.78	ND	0.36	
75-35-4	1,1-Dichloroethene	ND	0.78	ND	0.20	
75-09-2	Methylene Chloride	ND	0.78	ND	0.22	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.78	ND	0.25	
76-13-1	Trichlorotrifluoroethane	ND	0.78	ND	0.10	
75-15-0	Carbon Disulfide	ND	7.8	ND	2.5	
156-60-5	trans-1,2-Dichloroethene	ND	0.78	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.78	ND	0.19	
1634-04-4	Methyl tert-Butyl Ether	ND	0.78	ND	0.22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **32-1F-032812** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-007

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01142

Initial Pressure (psig): -2.83 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	7.8	ND	2.2	
156-59-2	cis-1,2-Dichloroethene	ND	0.78	ND	0.20	
78-93-3	2-Butanone (MEK)	**26**	7.8	**8.8**	2.6	
141-78-6	Ethyl Acetate	**11**	1.6	**3.0**	0.43	
110-54-3	n-Hexane	**11**	0.78	**3.2**	0.22	
67-66-3	Chloroform	**5.1**	0.78	**1.1**	0.16	
109-99-9	Tetrahydrofuran (THF)	ND	0.78	ND	0.26	
71-55-6	1,1,1-Trichloroethane	ND	0.78	ND	0.14	
56-23-5	Carbon Tetrachloride	**0.82**	0.78	**0.13**	0.12	
110-82-7	Cyclohexane	**2.4**	1.6	**0.71**	0.45	
78-87-5	1,2-Dichloropropane	ND	0.78	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.78	ND	0.12	
123-91-1	1,4-Dioxane	ND	0.78	ND	0.22	
80-62-6	Methyl Methacrylate	ND	1.6	ND	0.38	
142-82-5	n-Heptane	**4.9**	0.78	**1.2**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.78	ND	0.17	
108-10-1	4-Methyl-2-pentanone	**0.80**	0.78	**0.20**	0.19	
10061-02-6	trans-1,3-Dichloropropene	ND	0.78	ND	0.17	
108-88-3	Toluene	**49**	0.78	**13**	0.21	
591-78-6	2-Hexanone	ND	0.78	ND	0.19	
124-48-1	Dibromochloromethane	ND	0.78	ND	0.091	
106-93-4	1,2-Dibromoethane	ND	0.78	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **32-1F-032812** CAS Sample ID: P1201320-007
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC01142

Initial Pressure (psig): -2.83 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.1**	0.78	**0.22**	0.16	
111-65-9	n-Octane	**1.1**	0.78	**0.24**	0.17	
108-90-7	Chlorobenzene	ND	0.78	ND	0.17	
179601-23-1	m,p-Xylenes	**4.4**	1.6	**1.0**	0.36	
75-25-2	Bromoform	ND	0.78	ND	0.075	
100-42-5	Styrene	**2.3**	0.78	**0.55**	0.18	
95-47-6	o-Xylene	**1.4**	0.78	**0.32**	0.18	
111-84-2	n-Nonane	**1.0**	0.78	**0.19**	0.15	
98-82-8	Cumene	ND	0.78	ND	0.16	
80-56-8	alpha-Pinene	**9.1**	0.78	**1.6**	0.14	
103-65-1	n-Propylbenzene	ND	0.78	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.78	ND	0.16	
108-67-8	1,3,5-Trimethylbenzene	ND	0.78	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**1.4**	0.78	**0.29**	0.16	
100-44-7	Benzyl Chloride	ND	0.78	ND	0.15	
541-73-1	1,3-Dichlorobenzene	ND	0.78	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.78	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.78	ND	0.13	
5989-27-5	d-Limonene	**15**	0.78	**2.7**	0.14	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.78	ND	0.080	
120-82-1	1,2,4-Trichlorobenzene	ND	0.78	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.78	ND	0.073	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **36-1F-032812**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-008

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01413

Date Collected: 3/29/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.51 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**1.9**	0.91	**1.1**	0.53	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.2**	0.91	**0.44**	0.18	
74-87-3	Chloromethane	ND	0.91	ND	0.44	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.91	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.91	ND	0.41	
74-83-9	Bromomethane	ND	0.91	ND	0.23	
75-00-3	Chloroethane	ND	0.91	ND	0.34	
64-17-5	Ethanol	**450**	9.1	**240**	4.8	
75-05-8	Acetonitrile	ND	0.91	ND	0.54	
107-02-8	Acrolein	**8.5**	3.6	**3.7**	1.6	
67-64-1	Acetone	**44**	9.1	**18**	3.8	
75-69-4	Trichlorofluoromethane	**1.3**	0.91	**0.23**	0.16	
67-63-0	2-Propanol (Isopropyl Alcohol)	**6.4**	1.8	**2.6**	0.74	
107-13-1	Acrylonitrile	ND	0.91	ND	0.42	
75-35-4	1,1-Dichloroethene	ND	0.91	ND	0.23	
75-09-2	Methylene Chloride	ND	0.91	ND	0.26	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.91	ND	0.29	
76-13-1	Trichlorotrifluoroethane	ND	0.91	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.1	ND	2.9	
156-60-5	trans-1,2-Dichloroethene	ND	0.91	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.91	ND	0.22	
1634-04-4	Methyl tert-Butyl Ether	ND	0.91	ND	0.25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **36-1F-032812** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-008

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01413

Initial Pressure (psig): -4.51 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.1	ND	2.6	
156-59-2	cis-1,2-Dichloroethene	ND	0.91	ND	0.23	
78-93-3	2-Butanone (MEK)	**12**	9.1	**4.1**	3.1	
141-78-6	Ethyl Acetate	**2.7**	1.8	**0.75**	0.50	
110-54-3	n-Hexane	ND	0.91	ND	0.26	
67-66-3	Chloroform	ND	0.91	ND	0.19	
109-99-9	Tetrahydrofuran (THF)	**2.7**	0.91	**0.92**	0.31	
71-55-6	1,1,1-Trichloroethane	ND	0.91	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.91	ND	0.14	
110-82-7	Cyclohexane	ND	1.8	ND	0.53	
78-87-5	1,2-Dichloropropane	ND	0.91	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.91	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.91	ND	0.25	
80-62-6	Methyl Methacrylate	ND	1.8	ND	0.44	
142-82-5	n-Heptane	**1.3**	0.91	**0.31**	0.22	
10061-01-5	cis-1,3-Dichloropropene	ND	0.91	ND	0.20	
108-10-1	4-Methyl-2-pentanone	ND	0.91	ND	0.22	
10061-02-6	trans-1,3-Dichloropropene	ND	0.91	ND	0.20	
108-88-3	Toluene	**7.9**	0.91	**2.1**	0.24	
591-78-6	2-Hexanone	ND	0.91	ND	0.22	
124-48-1	Dibromochloromethane	ND	0.91	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.91	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **36-1F-032812** CAS Sample ID: P1201320-008
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01413

Initial Pressure (psig): -4.51 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.91	ND	0.19	
111-65-9	n-Octane	**1.1**	0.91	**0.23**	0.19	
108-90-7	Chlorobenzene	ND	0.91	ND	0.20	
179601-23-1	m,p-Xylenes	ND	1.8	ND	0.42	
75-25-2	Bromoform	ND	0.91	ND	0.088	
100-42-5	Styrene	ND	0.91	ND	0.21	
95-47-6	o-Xylene	ND	0.91	ND	0.21	
111-84-2	n-Nonane	ND	0.91	ND	0.17	
98-82-8	Cumene	ND	0.91	ND	0.18	
80-56-8	alpha-Pinene	**3.5**	0.91	**0.63**	0.16	
103-65-1	n-Propylbenzene	ND	0.91	ND	0.18	
622-96-8	4-Ethyltoluene	ND	0.91	ND	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.91	ND	0.18	
95-63-6	1,2,4-Trimethylbenzene	ND	0.91	ND	0.18	
100-44-7	Benzyl Chloride	ND	0.91	ND	0.17	
541-73-1	1,3-Dichlorobenzene	ND	0.91	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.91	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.91	ND	0.15	
5989-27-5	d-Limonene	**24**	0.91	**4.3**	0.16	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.91	ND	0.094	
120-82-1	1,2,4-Trichlorobenzene	ND	0.91	ND	0.12	
87-68-3	Hexachlorobutadiene	ND	0.91	ND	0.085	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **34-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-009

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01533

Date Collected: 3/30/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.39 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**2.1**	0.69	**1.2**	0.40	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.0**	0.69	**0.41**	0.14	
74-87-3	Chloromethane	ND	0.69	ND	0.33	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.69	ND	0.098	
106-99-0	1,3-Butadiene	ND	0.69	ND	0.31	
74-83-9	Bromomethane	ND	0.69	ND	0.18	
75-00-3	Chloroethane	ND	0.69	ND	0.26	
64-17-5	Ethanol	**120**	6.9	**65**	3.6	
75-05-8	Acetonitrile	ND	0.69	ND	0.41	
107-02-8	Acrolein	ND	2.7	ND	1.2	
67-64-1	Acetone	**19**	6.9	**7.9**	2.9	
75-69-4	Trichlorofluoromethane	**1.1**	0.69	**0.19**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	**8.0**	1.4	**3.2**	0.56	
107-13-1	Acrylonitrile	ND	0.69	ND	0.32	
75-35-4	1,1-Dichloroethene	ND	0.69	ND	0.17	
75-09-2	Methylene Chloride	ND	0.69	ND	0.20	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.69	ND	0.22	
76-13-1	Trichlorotrifluoroethane	ND	0.69	ND	0.089	
75-15-0	Carbon Disulfide	ND	6.9	ND	2.2	
156-60-5	trans-1,2-Dichloroethene	ND	0.69	ND	0.17	
75-34-3	1,1-Dichloroethane	ND	0.69	ND	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	0.69	ND	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **34-1F-032912** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-009

Test Code: EPA TO-15 Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01533

Initial Pressure (psig): -1.39 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	6.9	ND	1.9	
156-59-2	cis-1,2-Dichloroethene	ND	0.69	ND	0.17	
78-93-3	2-Butanone (MEK)	ND	6.9	ND	2.3	
141-78-6	Ethyl Acetate	**3.5**	1.4	**0.98**	0.38	
110-54-3	n-Hexane	**1.5**	0.69	**0.43**	0.19	
67-66-3	Chloroform	ND	0.69	ND	0.14	
109-99-9	Tetrahydrofuran (THF)	**3.8**	0.69	**1.3**	0.23	
71-55-6	1,1,1-Trichloroethane	ND	0.69	ND	0.13	
56-23-5	Carbon Tetrachloride	ND	0.69	ND	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.40	
78-87-5	1,2-Dichloropropane	ND	0.69	ND	0.15	
75-27-4	Bromodichloromethane	ND	0.69	ND	0.10	
123-91-1	1,4-Dioxane	ND	0.69	ND	0.19	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.33	
142-82-5	n-Heptane	ND	0.69	ND	0.17	
10061-01-5	cis-1,3-Dichloropropene	ND	0.69	ND	0.15	
108-10-1	4-Methyl-2-pentanone	ND	0.69	ND	0.17	
10061-02-6	trans-1,3-Dichloropropene	ND	0.69	ND	0.15	
108-88-3	Toluene	**4.5**	0.69	**1.2**	0.18	
591-78-6	2-Hexanone	ND	0.69	ND	0.17	
124-48-1	Dibromochloromethane	ND	0.69	ND	0.080	
106-93-4	1,2-Dibromoethane	ND	0.69	ND	0.089	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **34-1F-032912** CAS Sample ID: P1201320-009
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01533

Initial Pressure (psig): -1.39 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.69	ND	0.14	
111-65-9	n-Octane	ND	0.69	ND	0.15	
108-90-7	Chlorobenzene	ND	0.69	ND	0.15	
179601-23-1	m,p-Xylenes	**1.5**	1.4	**0.35**	0.32	
75-25-2	Bromoform	ND	0.69	ND	0.066	
100-42-5	Styrene	**0.85**	0.69	**0.20**	0.16	
95-47-6	o-Xylene	ND	0.69	ND	0.16	
111-84-2	n-Nonane	ND	0.69	ND	0.13	
98-82-8	Cumene	ND	0.69	ND	0.14	
80-56-8	alpha-Pinene	**1.3**	0.69	**0.24**	0.12	
103-65-1	n-Propylbenzene	ND	0.69	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.69	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.69	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.69	ND	0.14	
100-44-7	Benzyl Chloride	ND	0.69	ND	0.13	
541-73-1	1,3-Dichlorobenzene	ND	0.69	ND	0.11	
106-46-7	1,4-Dichlorobenzene	ND	0.69	ND	0.11	
95-50-1	1,2-Dichlorobenzene	ND	0.69	ND	0.11	
5989-27-5	d-Limonene	**9.6**	0.69	**1.7**	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.69	ND	0.071	
120-82-1	1,2,4-Trichlorobenzene	ND	0.69	ND	0.092	
87-68-3	Hexachlorobutadiene	ND	0.69	ND	0.064	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **35-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-010

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00943

Date Collected: 3/30/12
Date Received: 4/4/12
Date Analyzed: 4/9 - 4/10/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -4.85 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**6.5**	0.93	**3.8**	0.54	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.2**	0.93	**0.45**	0.19	
74-87-3	Chloromethane	ND	0.93	ND	0.45	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.93	ND	0.13	
106-99-0	1,3-Butadiene	ND	0.93	ND	0.42	
74-83-9	Bromomethane	ND	0.93	ND	0.24	
75-00-3	Chloroethane	ND	0.93	ND	0.35	
64-17-5	Ethanol	**1,500**	93	**790**	49	**D**
75-05-8	Acetonitrile	ND	0.93	ND	0.55	
107-02-8	Acrolein	ND	3.7	ND	1.6	
67-64-1	Acetone	**49**	9.3	**21**	3.9	
75-69-4	Trichlorofluoromethane	**1.5**	0.93	**0.27**	0.17	
67-63-0	2-Propanol (Isopropyl Alcohol)	**46**	1.9	**19**	0.76	
107-13-1	Acrylonitrile	ND	0.93	ND	0.43	
75-35-4	1,1-Dichloroethene	ND	0.93	ND	0.23	
75-09-2	Methylene Chloride	ND	0.93	ND	0.27	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.93	ND	0.30	
76-13-1	Trichlorotrifluoroethane	ND	0.93	ND	0.12	
75-15-0	Carbon Disulfide	ND	9.3	ND	3.0	
156-60-5	trans-1,2-Dichloroethene	ND	0.93	ND	0.23	
75-34-3	1,1-Dichloroethane	ND	0.93	ND	0.23	
1634-04-4	Methyl tert-Butyl Ether	ND	0.93	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **35-1F-032912**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-010

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00943

Date Collected: 3/30/12
Date Received: 4/4/12
Date Analyzed: 4/9 - 4/10/12
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -4.85 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	9.3	ND	2.6	
156-59-2	cis-1,2-Dichloroethene	ND	0.93	ND	0.23	
78-93-3	2-Butanone (MEK)	ND	9.3	ND	3.2	
141-78-6	Ethyl Acetate	**16**	1.9	**4.5**	0.52	
110-54-3	n-Hexane	**3.2**	0.93	**0.90**	0.26	
67-66-3	Chloroform	**1.3**	0.93	**0.28**	0.19	
109-99-9	Tetrahydrofuran (THF)	ND	0.93	ND	0.32	
71-55-6	1,1,1-Trichloroethane	ND	0.93	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.93	ND	0.15	
110-82-7	Cyclohexane	ND	1.9	ND	0.54	
78-87-5	1,2-Dichloropropane	ND	0.93	ND	0.20	
75-27-4	Bromodichloromethane	ND	0.93	ND	0.14	
123-91-1	1,4-Dioxane	ND	0.93	ND	0.26	
80-62-6	Methyl Methacrylate	ND	1.9	ND	0.45	
142-82-5	n-Heptane	**1.5**	0.93	**0.37**	0.23	
10061-01-5	cis-1,3-Dichloropropene	ND	0.93	ND	0.20	
108-10-1	4-Methyl-2-pentanone	**1.4**	0.93	**0.34**	0.23	
10061-02-6	trans-1,3-Dichloropropene	ND	0.93	ND	0.20	
108-88-3	Toluene	**16**	0.93	**4.2**	0.25	
591-78-6	2-Hexanone	ND	0.93	ND	0.23	
124-48-1	Dibromochloromethane	ND	0.93	ND	0.11	
106-93-4	1,2-Dibromoethane	ND	0.93	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **35-1F-032912** CAS Sample ID: P1201320-010
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/4/12
Analyst: Elsa Moctezuma Date Analyzed: 4/9 - 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: AC00943

Initial Pressure (psig): -4.85 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	**1.3**	0.93	**0.27**	0.20	
111-65-9	n-Octane	ND	0.93	ND	0.20	
108-90-7	Chlorobenzene	ND	0.93	ND	0.20	
179601-23-1	m,p-Xylenes	**5.4**	1.9	**1.3**	0.43	
75-25-2	Bromoform	ND	0.93	ND	0.090	
100-42-5	Styrene	ND	0.93	ND	0.22	
95-47-6	o-Xylene	**1.9**	0.93	**0.43**	0.21	
111-84-2	n-Nonane	ND	0.93	ND	0.18	
98-82-8	Cumene	ND	0.93	ND	0.19	
80-56-8	alpha-Pinene	**5.1**	0.93	**0.92**	0.17	
103-65-1	n-Propylbenzene	ND	0.93	ND	0.19	
622-96-8	4-Ethyltoluene	ND	0.93	ND	0.19	
108-67-8	1,3,5-Trimethylbenzene	ND	0.93	ND	0.19	
95-63-6	1,2,4-Trimethylbenzene	**2.3**	0.93	**0.47**	0.19	
100-44-7	Benzyl Chloride	ND	0.93	ND	0.18	
541-73-1	1,3-Dichlorobenzene	ND	0.93	ND	0.15	
106-46-7	1,4-Dichlorobenzene	ND	0.93	ND	0.15	
95-50-1	1,2-Dichlorobenzene	ND	0.93	ND	0.15	
5989-27-5	d-Limonene	**28**	0.93	**5.0**	0.17	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.93	ND	0.096	
120-82-1	1,2,4-Trichlorobenzene	ND	0.93	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.93	ND	0.087	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **Method Blank** CAS Sample ID: P120407-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/7/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **Method Blank** CAS Sample ID: P120409-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/9/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	ND	0.29	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	ND	0.10	
74-87-3	Chloromethane	ND	0.50	ND	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	ND	0.072	
106-99-0	1,3-Butadiene	ND	0.50	ND	0.23	
74-83-9	Bromomethane	ND	0.50	ND	0.13	
75-00-3	Chloroethane	ND	0.50	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	0.50	ND	0.30	
107-02-8	Acrolein	ND	2.0	ND	0.87	
67-64-1	Acetone	ND	5.0	ND	2.1	
75-69-4	Trichlorofluoromethane	ND	0.50	ND	0.089	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	0.50	ND	0.23	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.50	ND	0.16	
76-13-1	Trichlorotrifluoroethane	ND	0.50	ND	0.065	
75-15-0	Carbon Disulfide	ND	5.0	ND	1.6	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	0.50	ND	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
78-93-3	2-Butanone (MEK)	ND	5.0	ND	1.7	
141-78-6	Ethyl Acetate	ND	1.0	ND	0.28	
110-54-3	n-Hexane	ND	0.50	ND	0.14	
67-66-3	Chloroform	ND	0.50	ND	0.10	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.0	ND	0.29	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.50	ND	0.075	
123-91-1	1,4-Dioxane	ND	0.50	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.0	ND	0.24	
142-82-5	n-Heptane	ND	0.50	ND	0.12	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	0.50	ND	0.12	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-88-3	Toluene	ND	0.50	ND	0.13	
591-78-6	2-Hexanone	ND	0.50	ND	0.12	
124-48-1	Dibromochloromethane	ND	0.50	ND	0.059	
106-93-4	1,2-Dibromoethane	ND	0.50	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ** CAS Project ID: P1201320
Client Sample ID: **Method Blank** CAS Sample ID: P120410-MB
Client Project ID: **Background Indoor Air Study**

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
123-86-4	n-Butyl Acetate	ND	0.50	ND	0.11	
111-65-9	n-Octane	ND	0.50	ND	0.11	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
75-25-2	Bromoform	ND	0.50	ND	0.048	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
111-84-2	n-Nonane	ND	0.50	ND	0.095	
98-82-8	Cumene	ND	0.50	ND	0.10	
80-56-8	alpha-Pinene	ND	0.50	ND	0.090	
103-65-1	n-Propylbenzene	ND	0.50	ND	0.10	
622-96-8	4-Ethyltoluene	ND	0.50	ND	0.10	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	ND	0.10	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	ND	0.10	
100-44-7	Benzyl Chloride	ND	0.50	ND	0.097	
541-73-1	1,3-Dichlorobenzene	ND	0.50	ND	0.083	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	ND	0.052	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	ND	0.067	
87-68-3	Hexachlorobutadiene	ND	0.50	ND	0.047	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201320

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 3/25 - 3/30/12
Date(s) Received: 4/4/12
Date(s) Analyzed: 4/7 - 4/10/12

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120407-MB	**106**	**99**	**97**	70-130	
Method Blank	P120409-MB	**105**	**99**	**96**	70-130	
Method Blank	P120410-MB	**104**	**100**	**95**	70-130	
Lab Control Sample	P120407-LCS	**103**	**99**	**100**	70-130	
Lab Control Sample	P120409-LCS	**104**	**99**	**99**	70-130	
Lab Control Sample	P120410-LCS	**112**	**98**	**96**	70-130	
31-1F-032412	P1201320-001	**110**	**99**	**94**	70-130	
37-1F-032612	P1201320-002	**105**	**99**	**96**	70-130	
29-1F-032612	P1201320-003	**106**	**98**	**95**	70-130	
DUP-54	P1201320-004	**106**	**98**	**97**	70-130	
DUP-54	P1201320-004DUP	**106**	**98**	**97**	70-130	
30-1F-032612	P1201320-005	**106**	**100**	**92**	70-130	
33-1B-032712	P1201320-006	**107**	**101**	**92**	70-130	
32-1F-032812	P1201320-007	**104**	**99**	**95**	70-130	
36-1F-032812	P1201320-008	**110**	**99**	**90**	70-130	
34-1F-032912	P1201320-009	**108**	**97**	**91**	70-130	
35-1F-032912	P1201320-010	**110**	**97**	**94**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**215**	**109**	59-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**170**	**87**	63-115	
74-87-3	Chloromethane	190	**173**	**91**	59-124	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**170**	**85**	65-113	
106-99-0	1,3-Butadiene	204	**205**	**100**	60-138	
74-83-9	Bromomethane	194	**174**	**90**	69-129	
75-00-3	Chloroethane	196	**174**	**89**	60-120	
64-17-5	Ethanol	928	**861**	**93**	58-121	
75-05-8	Acetonitrile	194	**194**	**100**	64-129	
107-02-8	Acrolein	198	**183**	**92**	54-127	
67-64-1	Acetone	1,010	**922**	**91**	59-114	
75-69-4	Trichlorofluoromethane	202	**177**	**88**	66-108	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**299**	**78**	50-113	
107-13-1	Acrylonitrile	198	**199**	**101**	72-135	
75-35-4	1,1-Dichloroethene	212	**198**	**93**	70-117	
75-09-2	Methylene Chloride	206	**183**	**89**	61-108	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**217**	**104**	70-131	
76-13-1	Trichlorotrifluoroethane	206	**191**	**93**	70-113	
75-15-0	Carbon Disulfide	208	**186**	**89**	65-112	
156-60-5	trans-1,2-Dichloroethene	196	**188**	**96**	71-119	
75-34-3	1,1-Dichloroethane	200	**192**	**96**	71-116	
1634-04-4	Methyl tert-Butyl Ether	198	**193**	**97**	67-116	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**992**	**104**	59-142	
156-59-2	cis-1,2-Dichloroethene	206	**195**	**95**	69-119	
78-93-3	2-Butanone (MEK)	206	**205**	**100**	68-125	
141-78-6	Ethyl Acetate	398	**391**	**98**	63-130	
110-54-3	n-Hexane	198	**180**	**91**	57-120	
67-66-3	Chloroform	214	**192**	**90**	69-111	
109-99-9	Tetrahydrofuran (THF)	202	**191**	**95**	57-123	
71-55-6	1,1,1-Trichloroethane	198	**186**	**94**	73-119	
56-23-5	Carbon Tetrachloride	202	**194**	**96**	74-129	
110-82-7	Cyclohexane	390	**355**	**91**	70-113	
78-87-5	1,2-Dichloropropane	198	**183**	**92**	69-118	
75-27-4	Bromodichloromethane	198	**188**	**95**	75-124	
123-91-1	1,4-Dioxane	200	**189**	**95**	71-123	
80-62-6	Methyl Methacrylate	400	**390**	**98**	72-127	
142-82-5	n-Heptane	196	**188**	**96**	68-120	
10061-01-5	cis-1,3-Dichloropropene	188	**183**	**97**	71-130	
108-10-1	4-Methyl-2-pentanone	204	**204**	**100**	69-130	
10061-02-6	trans-1,3-Dichloropropene	210	**212**	**101**	76-133	
108-88-3	Toluene	202	**179**	**89**	67-111	
591-78-6	2-Hexanone	222	**213**	**96**	70-123	
124-48-1	Dibromochloromethane	206	**197**	**96**	75-129	
106-93-4	1,2-Dibromoethane	200	**180**	**90**	73-122	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120407-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/07/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**211**	**96**	68-132	
111-65-9	n-Octane	200	**195**	**98**	68-116	
108-90-7	Chlorobenzene	202	**177**	**88**	69-113	
179601-23-1	m,p-Xylenes	392	**360**	**92**	70-116	
75-25-2	Bromoform	208	**188**	**90**	69-127	
100-42-5	Styrene	200	**188**	**94**	71-125	
95-47-6	o-Xylene	194	**176**	**91**	70-116	
111-84-2	n-Nonane	196	**184**	**94**	68-116	
98-82-8	Cumene	190	**174**	**92**	70-116	
80-56-8	alpha-Pinene	186	**174**	**94**	71-119	
103-65-1	n-Propylbenzene	192	**172**	**90**	71-119	
622-96-8	4-Ethyltoluene	198	**174**	**88**	71-119	
108-67-8	1,3,5-Trimethylbenzene	200	**181**	**91**	71-121	
95-63-6	1,2,4-Trimethylbenzene	194	**180**	**93**	73-127	
100-44-7	Benzyl Chloride	200	**206**	**103**	65-137	
541-73-1	1,3-Dichlorobenzene	200	**164**	**82**	68-123	
106-46-7	1,4-Dichlorobenzene	206	**161**	**78**	65-120	
95-50-1	1,2-Dichlorobenzene	198	**163**	**82**	67-121	
5989-27-5	d-Limonene	200	**189**	**95**	67-130	
96-12-8	1,2-Dibromo-3-chloropropane	196	**181**	**92**	72-133	
120-82-1	1,2,4-Trichlorobenzene	196	**163**	**83**	62-133	
87-68-3	Hexachlorobutadiene	202	**166**	**82**	60-128	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**207**	**105**	59-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**168**	**86**	63-115	
74-87-3	Chloromethane	190	**171**	**90**	59-124	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**170**	**85**	65-113	
106-99-0	1,3-Butadiene	204	**205**	**100**	60-138	
74-83-9	Bromomethane	194	**171**	**88**	69-129	
75-00-3	Chloroethane	196	**170**	**87**	60-120	
64-17-5	Ethanol	928	**895**	**96**	58-121	
75-05-8	Acetonitrile	194	**192**	**99**	64-129	
107-02-8	Acrolein	198	**180**	**91**	54-127	
67-64-1	Acetone	1,010	**909**	**90**	59-114	
75-69-4	Trichlorofluoromethane	202	**173**	**86**	66-108	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**313**	**82**	50-113	
107-13-1	Acrylonitrile	198	**198**	**100**	72-135	
75-35-4	1,1-Dichloroethene	212	**195**	**92**	70-117	
75-09-2	Methylene Chloride	206	**181**	**88**	61-108	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**215**	**103**	70-131	
76-13-1	Trichlorotrifluoroethane	206	**185**	**90**	70-113	
75-15-0	Carbon Disulfide	208	**183**	**88**	65-112	
156-60-5	trans-1,2-Dichloroethene	196	**185**	**94**	71-119	
75-34-3	1,1-Dichloroethane	200	**191**	**96**	71-116	
1634-04-4	Methyl tert-Butyl Ether	198	**191**	**96**	67-116	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	CAS Acceptance Limits	**Data Qualifier**
108-05-4	Vinyl Acetate	952	**981**	**103**	59-142	
156-59-2	cis-1,2-Dichloroethene	206	**193**	**94**	69-119	
78-93-3	2-Butanone (MEK)	206	**202**	**98**	68-125	
141-78-6	Ethyl Acetate	398	**389**	**98**	63-130	
110-54-3	n-Hexane	198	**180**	**91**	57-120	
67-66-3	Chloroform	214	**188**	**88**	69-111	
109-99-9	Tetrahydrofuran (THF)	202	**187**	**93**	57-123	
71-55-6	1,1,1-Trichloroethane	198	**181**	**91**	73-119	
56-23-5	Carbon Tetrachloride	202	**189**	**94**	74-129	
110-82-7	Cyclohexane	390	**349**	**89**	70-113	
78-87-5	1,2-Dichloropropane	198	**180**	**91**	69-118	
75-27-4	Bromodichloromethane	198	**185**	**93**	75-124	
123-91-1	1,4-Dioxane	200	**184**	**92**	71-123	
80-62-6	Methyl Methacrylate	400	**385**	**96**	72-127	
142-82-5	n-Heptane	196	**183**	**93**	68-120	
10061-01-5	cis-1,3-Dichloropropene	188	**179**	**95**	71-130	
108-10-1	4-Methyl-2-pentanone	204	**202**	**99**	69-130	
10061-02-6	trans-1,3-Dichloropropene	210	**207**	**99**	76-133	
108-88-3	Toluene	202	**176**	**87**	67-111	
591-78-6	2-Hexanone	222	**210**	**95**	70-123	
124-48-1	Dibromochloromethane	206	**195**	**95**	75-129	
106-93-4	1,2-Dibromoethane	200	**178**	**89**	73-122	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120409-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/09/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**207**	**94**	68-132	
111-65-9	n-Octane	200	**194**	**97**	68-116	
108-90-7	Chlorobenzene	202	**173**	**86**	69-113	
179601-23-1	m,p-Xylenes	392	**352**	**90**	70-116	
75-25-2	Bromoform	208	**184**	**88**	69-127	
100-42-5	Styrene	200	**184**	**92**	71-125	
95-47-6	o-Xylene	194	**173**	**89**	70-116	
111-84-2	n-Nonane	196	**182**	**93**	68-116	
98-82-8	Cumene	190	**171**	**90**	70-116	
80-56-8	alpha-Pinene	186	**170**	**91**	71-119	
103-65-1	n-Propylbenzene	192	**169**	**88**	71-119	
622-96-8	4-Ethyltoluene	198	**173**	**87**	71-119	
108-67-8	1,3,5-Trimethylbenzene	200	**178**	**89**	71-121	
95-63-6	1,2,4-Trimethylbenzene	194	**177**	**91**	73-127	
100-44-7	Benzyl Chloride	200	**204**	**102**	65-137	
541-73-1	1,3-Dichlorobenzene	200	**161**	**81**	68-123	
106-46-7	1,4-Dichlorobenzene	206	**157**	**76**	65-120	
95-50-1	1,2-Dichlorobenzene	198	**160**	**81**	67-121	
5989-27-5	d-Limonene	200	**184**	**92**	67-130	
96-12-8	1,2-Dibromo-3-chloropropane	196	**179**	**91**	72-133	
120-82-1	1,2,4-Trichlorobenzene	196	**158**	**81**	62-133	
87-68-3	Hexachlorobutadiene	202	**161**	**80**	60-128	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
115-07-1	Propene	198	**234**	**118**	59-137	
75-71-8	Dichlorodifluoromethane (CFC 12)	196	**185**	**94**	63-115	
74-87-3	Chloromethane	190	**184**	**97**	59-124	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	200	**170**	**85**	65-113	
106-99-0	1,3-Butadiene	204	**214**	**105**	60-138	
74-83-9	Bromomethane	194	**174**	**90**	69-129	
75-00-3	Chloroethane	196	**179**	**91**	60-120	
64-17-5	Ethanol	928	**891**	**96**	58-121	
75-05-8	Acetonitrile	194	**206**	**106**	64-129	
107-02-8	Acrolein	198	**188**	**95**	54-127	
67-64-1	Acetone	1,010	**945**	**94**	59-114	
75-69-4	Trichlorofluoromethane	202	**181**	**90**	66-108	
67-63-0	2-Propanol (Isopropyl Alcohol)	382	**327**	**86**	50-113	
107-13-1	Acrylonitrile	198	**206**	**104**	72-135	
75-35-4	1,1-Dichloroethene	212	**202**	**95**	70-117	
75-09-2	Methylene Chloride	206	**184**	**89**	61-108	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	208	**230**	**111**	70-131	
76-13-1	Trichlorotrifluoroethane	206	**186**	**90**	70-113	
75-15-0	Carbon Disulfide	208	**192**	**92**	65-112	
156-60-5	trans-1,2-Dichloroethene	196	**196**	**100**	71-119	
75-34-3	1,1-Dichloroethane	200	**202**	**101**	71-116	
1634-04-4	Methyl tert-Butyl Ether	198	**200**	**101**	67-116	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	952	**1010**	**106**	59-142	
156-59-2	cis-1,2-Dichloroethene	206	**203**	**99**	69-119	
78-93-3	2-Butanone (MEK)	206	**209**	**101**	68-125	
141-78-6	Ethyl Acetate	398	**404**	**102**	63-130	
110-54-3	n-Hexane	198	**191**	**96**	57-120	
67-66-3	Chloroform	214	**197**	**92**	69-111	
109-99-9	Tetrahydrofuran (THF)	202	**195**	**97**	57-123	
71-55-6	1,1,1-Trichloroethane	198	**186**	**94**	73-119	
56-23-5	Carbon Tetrachloride	202	**191**	**95**	74-129	
110-82-7	Cyclohexane	390	**350**	**90**	70-113	
78-87-5	1,2-Dichloropropane	198	**185**	**93**	69-118	
75-27-4	Bromodichloromethane	198	**191**	**96**	75-124	
123-91-1	1,4-Dioxane	200	**185**	**93**	71-123	
80-62-6	Methyl Methacrylate	400	**376**	**94**	72-127	
142-82-5	n-Heptane	196	**187**	**95**	68-120	
10061-01-5	cis-1,3-Dichloropropene	188	**185**	**98**	71-130	
108-10-1	4-Methyl-2-pentanone	204	**207**	**101**	69-130	
10061-02-6	trans-1,3-Dichloropropene	210	**213**	**101**	76-133	
108-88-3	Toluene	202	**174**	**86**	67-111	
591-78-6	2-Hexanone	222	**218**	**98**	70-123	
124-48-1	Dibromochloromethane	206	**192**	**93**	75-129	
106-93-4	1,2-Dibromoethane	200	**176**	**88**	73-122	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Elsa Moctezuma Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
123-86-4	n-Butyl Acetate	220	**215**	**98**	68-132	
111-65-9	n-Octane	200	**196**	**98**	68-116	
108-90-7	Chlorobenzene	202	**172**	**85**	69-113	
179601-23-1	m,p-Xylenes	392	**352**	**90**	70-116	
75-25-2	Bromoform	208	**179**	**86**	69-127	
100-42-5	Styrene	200	**182**	**91**	71-125	
95-47-6	o-Xylene	194	**171**	**88**	70-116	
111-84-2	n-Nonane	196	**188**	**96**	68-116	
98-82-8	Cumene	190	**169**	**89**	70-116	
80-56-8	alpha-Pinene	186	**170**	**91**	71-119	
103-65-1	n-Propylbenzene	192	**170**	**89**	71-119	
622-96-8	4-Ethyltoluene	198	**171**	**86**	71-119	
108-67-8	1,3,5-Trimethylbenzene	200	**176**	**88**	71-121	
95-63-6	1,2,4-Trimethylbenzene	194	**177**	**91**	73-127	
100-44-7	Benzyl Chloride	200	**203**	**102**	65-137	
541-73-1	1,3-Dichlorobenzene	200	**158**	**79**	68-123	
106-46-7	1,4-Dichlorobenzene	206	**156**	**76**	65-120	
95-50-1	1,2-Dichlorobenzene	198	**159**	**80**	67-121	
5989-27-5	d-Limonene	200	**187**	**94**	67-130	
96-12-8	1,2-Dibromo-3-chloropropane	196	**177**	**90**	72-133	
120-82-1	1,2,4-Trichlorobenzene	196	**157**	**80**	62-133	
87-68-3	Hexachlorobutadiene	202	**162**	**80**	60-128	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **DUP-54**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-004DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01749

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	Duplicate Sample Result ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Propene	11.7	6.78	10.5	6.13	11.1	**11**	25	
Dichlorodifluoromethane (CFC 12)	2.00	0.405	2.02	0.409	2.01	**1**	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	64.6	34.3	63.7	33.8	64.15	**1**	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	52.4	22.1	52.3	22.0	52.35	**0.2**	25	
Trichlorofluoromethane	1.11	0.197	1.08	0.192	1.095	**3**	25	
2-Propanol (Isopropyl Alcohol)	66.7	27.2	68.4	27.8	67.55	**3**	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **DUP-54**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-004DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01749

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result **µg/m³**	Duplicate Sample Result **ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	ND	ND	ND	ND	-	-	25	
n-Hexane	12.1	3.43	12.2	3.45	12.15	**0.8**	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	2.19	0.743	2.34	0.795	2.265	**7**	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	4.54	1.32	4.60	1.34	4.57	**1**	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	3.23	0.789	3.25	0.793	3.24	**0.6**	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
Toluene	44.9	11.9	45.5	12.1	45.2	**1**	25	
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Montana DEQ**
Client Sample ID: **DUP-54**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-004DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8
Analyst: Elsa Moctezuma
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01749

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/9/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
n-Butyl Acetate	ND	ND	ND	ND	-	-	25	
n-Octane	1.20	0.257	1.17	0.251	1.185	**3**	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	21.4	4.93	21.6	4.98	21.5	**0.9**	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	1.79	0.420	1.78	0.419	1.785	**0.6**	25	
o-Xylene	6.18	1.42	6.26	1.44	6.22	**1**	25	
n-Nonane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	6.03	1.08	6.06	1.09	6.045	**0.5**	25	
n-Propylbenzene	1.39	0.283	1.41	0.286	1.4	**1**	25	
4-Ethyltoluene	2.35	0.479	2.26	0.459	2.305	**4**	25	
1,3,5-Trimethylbenzene	2.26	0.460	2.25	0.459	2.255	**0.4**	25	
1,2,4-Trimethylbenzene	7.22	1.47	7.25	1.48	7.235	**0.4**	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	7.02	1.26	6.83	1.23	6.925	**3**	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **31-1F-032412** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-001

Test Code: EPA TO-15 SIM Date Collected: 3/25/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01571
Initial Pressure (psig): -1.72 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.036	ND	0.014	
107-06-2	1,2-Dichloroethane	**0.15**	0.036	**0.037**	0.0088	
71-43-2	Benzene	**1.8**	0.11	**0.57**	0.033	
79-01-6	Trichloroethene	**0.097**	0.036	**0.018**	0.0066	
79-00-5	1,1,2-Trichloroethane	ND	0.14	ND	0.026	
127-18-4	Tetrachloroethene	**0.051**	0.036	**0.0075**	0.0052	
100-41-4	Ethylbenzene	**0.86**	0.14	**0.20**	0.033	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.036	ND	0.0052	
91-20-3	Naphthalene	**0.51**	0.14	**0.097**	0.027	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **37-1F-032612** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-002

Test Code: EPA TO-15 SIM Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01118

Initial Pressure (psig): -4.87 Final Pressure (psig): 3.59

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.047	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.074**	0.047	**0.018**	0.011	
71-43-2	Benzene	**0.87**	0.14	**0.27**	0.044	
79-01-6	Trichloroethene	**1.3**	0.047	**0.23**	0.0087	
79-00-5	1,1,2-Trichloroethane	ND	0.19	ND	0.034	
127-18-4	Tetrachloroethene	ND	0.047	ND	0.0069	
100-41-4	Ethylbenzene	**0.72**	0.19	**0.16**	0.043	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.047	ND	0.0068	
91-20-3	Naphthalene	**0.58**	0.19	**0.11**	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **29-1F-032612** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-003

Test Code: EPA TO-15 SIM Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01127

Initial Pressure (psig): -2.68 Final Pressure (psig): 3.65

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.038	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.15**	0.038	**0.037**	0.0095	
71-43-2	Benzene	**13**	0.11	**4.1**	0.036	
79-01-6	Trichloroethene	ND	0.038	ND	0.0071	
79-00-5	1,1,2-Trichloroethane	ND	0.15	ND	0.028	
127-18-4	Tetrachloroethene	ND	0.038	ND	0.0056	
100-41-4	Ethylbenzene	**6.1**	0.15	**1.4**	0.035	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.038	ND	0.0056	
91-20-3	Naphthalene	**0.92**	0.15	**0.18**	0.029	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **DUP-54** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-004

Test Code: EPA TO-15 SIM Date Collected: 3/27/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01749
Initial Pressure (psig): -5.09 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.92

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.048	ND	0.019	
107-06-2	1,2-Dichloroethane	**0.17**	0.048	**0.042**	0.012	
71-43-2	Benzene	**10**	0.14	**3.1**	0.045	
79-01-6	Trichloroethene	ND	0.048	ND	0.0089	
79-00-5	1,1,2-Trichloroethane	ND	0.19	ND	0.035	
127-18-4	Tetrachloroethene	ND	0.048	ND	0.0071	
100-41-4	Ethylbenzene	**5.1**	0.19	**1.2**	0.044	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.048	ND	0.0070	
91-20-3	Naphthalene	**0.63**	0.19	**0.12**	0.037	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **30-1F-032612**
Client Project ID: **Background Indoor Air Study**

CAS Project ID: P1201320
CAS Sample ID: P1201320-005

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7
Analyst: Karen Ryan
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AS00147

Date Collected: 3/27/12
Date Received: 4/4/12
Date Analyzed: 4/10/12
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -5.30 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.96

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.049	ND	0.019	
107-06-2	1,2-Dichloroethane	**0.095**	0.049	**0.024**	0.012	
71-43-2	Benzene	**1.7**	0.15	**0.54**	0.046	
79-01-6	Trichloroethene	ND	0.049	ND	0.0091	
79-00-5	1,1,2-Trichloroethane	ND	0.20	ND	0.036	
127-18-4	Tetrachloroethene	ND	0.049	ND	0.0072	
100-41-4	Ethylbenzene	**0.93**	0.20	**0.21**	0.045	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.049	ND	0.0071	
91-20-3	Naphthalene	**0.27**	0.20	**0.052**	0.037	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **33-1B-032712** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-006

Test Code: EPA TO-15 SIM Date Collected: 3/28/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:
Container ID: AC00781
Initial Pressure (psig): -2.17 Final Pressure (psig): 3.68

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.074	ND	0.029	
107-06-2	1,2-Dichloroethane	**0.80**	0.074	**0.20**	0.018	
71-43-2	Benzene	**0.70**	0.22	**0.22**	0.069	
79-01-6	Trichloroethene	ND	0.074	ND	0.014	
79-00-5	1,1,2-Trichloroethane	ND	0.29	ND	0.054	
127-18-4	Tetrachloroethene	**0.31**	0.074	**0.045**	0.011	
100-41-4	Ethylbenzene	**1.3**	0.29	**0.29**	0.068	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.074	ND	0.011	
91-20-3	Naphthalene	**0.36**	0.29	**0.068**	0.056	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **32-1F-032812** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-007

Test Code: EPA TO-15 SIM Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01142
Initial Pressure (psig): -2.83 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.039	ND	0.015	
107-06-2	1,2-Dichloroethane	**0.40**	0.039	**0.10**	0.0096	
71-43-2	Benzene	**2.7**	0.12	**0.84**	0.036	
79-01-6	Trichloroethene	**0.056**	0.039	**0.010**	0.0072	
79-00-5	1,1,2-Trichloroethane	ND	0.16	ND	0.028	
127-18-4	Tetrachloroethene	**0.045**	0.039	**0.0067**	0.0057	
100-41-4	Ethylbenzene	**1.4**	0.16	**0.33**	0.036	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.039	ND	0.0056	
91-20-3	Naphthalene	**0.81**	0.16	**0.16**	0.030	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **36-1F-032812** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-008

Test Code: EPA TO-15 SIM Date Collected: 3/29/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01413

Initial Pressure (psig): -4.51 Final Pressure (psig): 3.73

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.045	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.58**	0.045	**0.14**	0.011	
71-43-2	Benzene	**0.85**	0.14	**0.27**	0.043	
79-01-6	Trichloroethene	ND	0.045	ND	0.0084	
79-00-5	1,1,2-Trichloroethane	ND	0.18	ND	0.033	
127-18-4	Tetrachloroethene	ND	0.045	ND	0.0067	
100-41-4	Ethylbenzene	**0.40**	0.18	**0.093**	0.042	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.045	ND	0.0066	
91-20-3	Naphthalene	**0.21**	0.18	**0.040**	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **34-1F-032912** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-009

Test Code: EPA TO-15 SIM Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC01533
Initial Pressure (psig): -1.39 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.034	ND	0.013	
107-06-2	1,2-Dichloroethane	**0.22**	0.034	**0.053**	0.0085	
71-43-2	Benzene	**1.1**	0.10	**0.35**	0.032	
79-01-6	Trichloroethene	ND	0.034	ND	0.0064	
79-00-5	1,1,2-Trichloroethane	ND	0.14	ND	0.025	
127-18-4	Tetrachloroethene	ND	0.034	ND	0.0051	
100-41-4	Ethylbenzene	**0.48**	0.14	**0.11**	0.032	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.034	ND	0.0050	
91-20-3	Naphthalene	ND	0.14	ND	0.026	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **35-1F-032912** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P1201320-010

Test Code: EPA TO-15 SIM Date Collected: 3/30/12
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: 4/4/12
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC00943

Initial Pressure (psig): -4.85 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.86

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.047	ND	0.018	
107-06-2	1,2-Dichloroethane	**0.35**	0.047	**0.087**	0.011	
71-43-2	Benzene	**2.7**	0.14	**0.84**	0.044	
79-01-6	Trichloroethene	ND	0.047	ND	0.0087	
79-00-5	1,1,2-Trichloroethane	ND	0.19	ND	0.034	
127-18-4	Tetrachloroethene	**2.4**	0.047	**0.36**	0.0069	
100-41-4	Ethylbenzene	**1.4**	0.19	**0.33**	0.043	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.047	ND	0.0068	
91-20-3	Naphthalene	**0.54**	0.19	**0.10**	0.035	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Client: **Montana DEQ**
Client Sample ID: **Method Blank** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
107-06-2	1,2-Dichloroethane	ND	0.025	ND	0.0062	
71-43-2	Benzene	ND	0.075	ND	0.023	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
79-00-5	1,1,2-Trichloroethane	ND	0.10	ND	0.018	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.025	ND	0.0036	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

SURROGATE SPIKE RECOVERY RESULTS

Client: **Montana DEQ**
Client Project ID: **Background Indoor Air Study** CAS Project ID: P1201320

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date(s) Collected: 3/25 - 3/30/12
Analyst: Karen Ryan Date(s) Received: 4/4/12
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 4/10/12
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P120410-MB	**100**	**109**	**107**	70-130	
Lab Control Sample	P120410-LCS	**96**	**108**	**109**	70-130	
31-1F-032412	P1201320-001	**96**	**111**	**102**	70-130	
37-1F-032612	P1201320-002	**99**	**109**	**104**	70-130	
29-1F-032612	P1201320-003	**100**	**109**	**100**	70-130	
DUP-54	P1201320-004	**100**	**108**	**105**	70-130	
30-1F-032612	P1201320-005	**100**	**112**	**110**	70-130	
33-1B-032712	P1201320-006	**97**	**112**	**110**	70-130	
32-1F-032812	P1201320-007	**99**	**109**	**102**	70-130	
36-1F-032812	P1201320-008	**99**	**110**	**107**	70-130	
34-1F-032912	P1201320-009	**98**	**108**	**106**	70-130	
35-1F-032912	P1201320-010	**98**	**107**	**103**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Montana DEQ**
Client Sample ID: **Lab Control Sample** CAS Project ID: P1201320
Client Project ID: **Background Indoor Air Study** CAS Sample ID: P120410-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS7 Date Received: NA
Analyst: Karen Ryan Date Analyzed: 4/10/12
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	CAS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	3.88	**2.91**	**75**	56-127	
107-06-2	1,2-Dichloroethane	4.00	**2.90**	**73**	51-140	
71-43-2	Benzene	3.96	**3.49**	**88**	56-125	
79-01-6	Trichloroethene	3.88	**2.84**	**73**	51-127	
79-00-5	1,1,2-Trichloroethane	3.92	**2.77**	**71**	49-137	
127-18-4	Tetrachloroethene	3.68	**2.82**	**77**	58-134	
100-41-4	Ethylbenzene	3.96	**3.25**	**82**	56-126	
79-34-5	1,1,2,2-Tetrachloroethane	3.84	**2.92**	**76**	53-148	
91-20-3	Naphthalene	3.44	**3.12**	**91**	25-149	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Massachusetts APH ICAL Method: M8011412A.M ICAL Date: 1/14/12 Instrument ID: MS08

Hydrocarbon Ranges

	areas							masses					
C5-C8 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopentane	60478	112606	488243	2480105	4710733	9222808		0.520	1.04	5.20	26.0	52.0	104
n-Hexane	59953	110631	507126	2577865	4931102	9678199		0.490	0.98	4.90	24.5	49.0	98
Cyclohexane	63203	115230	548910	2874726	5524402	10890911		0.500	1.00	5.00	25.0	50.0	100
2,3-Dimethylpentane	68648	127222	585183	2998017	5742104	11319597		0.520	1.04	5.20	26.0	52.0	104
n-Heptane	66143	120286	558074	2884817	5509801	10873046		0.490	0.98	4.90	24.5	49.0	98
n-Octane	76169	137829	632891	3286017	6205035	12092514		0.505	1.01	5.05	25.3	50.5	101
area sum:	**394594**	**723804**	**3320427**	**17101547**	**32623177**	**64077075**	**sum:**	**3.025**	**6.050**	**30.25**	**151.30**	**302.50**	**605.00**
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
2,3-Dimethylheptane	78780	147724	682518	3501487	6691428	13148840		0.485	0.97	4.85	24.3	48.5	97
n-Nonane	77464	140680	662221	3417128	6555165	12940625		0.485	0.97	4.85	24.3	48.5	97
n-Decane	80593	147724	705259	3651028	7021424	13870530		0.490	0.98	4.90	24.5	49.0	98
Butylcyclohexane	88915	166782	776903	4026931	7749936	15415340		0.495	0.99	4.95	24.8	49.5	99
n-Undecane	80867	152557	719618	3772331	7263077	14385881		0.480	0.96	4.80	24.0	48.0	96
n-Dodecane	70045	143746	687255	3673524	7115012	14041583		0.500	1.00	5.00	25.0	50.0	100
area sum:	**476664**	**899213**	**4233774**	**22042429**	**42396042**	**83802799**	**sum:**	**2.935**	**5.870**	**29.35**	**146.90**	**293.50**	**587.00**
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**		**0.5**	**1**	**5**	**25**	**50**	**100**
Isopropylbenzene	10658	19169	87439	448287	849124	1695737		0.485	0.97	4.85	24.3	48.5	97
3-Ethyltoluene	11805	20564	97823	504510	977020	1973178		0.470	0.94	4.70	23.5	47.0	94
1,3,5-Trimethylbenzene	15759	29260	134073	700133	1353305	2726630		0.490	0.98	4.90	24.5	49.0	98
1,2,3-Trimethylbenzene	17195	31328	143473	757946	1493373	3063059		0.495	0.99	4.95	24.8	49.5	99
p-Isopropyltoluene	9490	18116	83401	440962	872799	1814314		0.460	0.92	4.60	23.0	46.0	92
area sum:	**64907**	**118437**	**546209**	**2851838**	**5545621**	**11272918**	**sum:**	**2.400**	**4.800**	**24.00**	**120.10**	**240.00**	**480.00**

Massachusetts APH ICAL: M8011412A.M ICAL Date: 1/14/12 Instrument ID: MS08

Hydrocarbon Ranges

areas

Internal Standards (TIC)	0.5	1	5	25	50	100
Bromochloromethane (IS1)	1312793	1307309	1293586	1289283	1284194	1283817
1,4-Difluorobenzene (IS2)	2547079	2541159	2512498	2475255	2422119	2352159
Chlorobenzene-d5 (IS3)	2929189	2913374	2880258	2895080	2878314	2908396
Internal Standards (EIC)						
Bromochloromethane (IS1)	249696	247899	245985	245585	244327	243561
1,4-Difluorobenzene (IS2)	1153657	1149947	1133233	1136223	1127203	1138730
Chlorobenzene-d5 (IS3)	1007702	1004638	991212	992925	982812	986950
Surrogates (TIC)	**0.5**	**1**	**5**	**25**	**50**	**100**
1,2-Dichloroethane-d4	1162497	1154617	1105630	1126201	1103958	1095945
Toluene-d8	3508018	3490493	3455382	3466688	3437986	3457323
p-Bromofluorobenzene	2298220	2284797	2197239	2227396	2192159	2197999

RRFs

C5-C8 Aliphatics	0.5	1	5	25	50	100	RRF_{avg}	%RSD
	2.8268	2.6009	2.4215	2.4870	2.3919	2.3252	2.509	7.24
C9-C12 Aliphatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	4.0291	3.8120	3.6383	3.7780	3.6744	3.6163	3.758	4.09
C9-C10 Aromatics	**0.5**	**1**	**5**	**25**	**50**	**100**	RRF_{avg}	%RSD
	0.6709	0.6140	0.5740	0.5979	0.5878	0.5949	0.607	5.63

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **04071202.D**
Data File Path: **J:\MS08\Data\2012_04\06**
Operator: **EM**
Date Acquired: **4/7/12 3:06**
Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15/MAPH CCV STD**
Misc Info: **S25-04031203/S25-03161202**
Instrument Name: **MS08**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	15.89	1082412
16)	Chlorobenzene-d5 (IS3)	21.69	941687

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	8.19	2388606	2.538	153.0	**1.14**	**-30**	**30**	Pass
4)	n-Hexane	13.08	2507742						
9)	Cyclohexane	15.81	2792389						
10)	2,3-Dimethylpentane	16.17	2922324	**Spike**	**ICAL**				
11)	n-Heptane	17.35	2804136	**Amt (ng)**	**RRF**				
14)	n-Octane	20.69	3208272	151.30	2.509				
			16623469						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	22.31	3401295	3.834	149.9	**2.02**	**-30**	**30**	Pass
19)	n-Nonane	23.30	3317221						
25)	n-Decane	25.26	3533579						
28)	Butylcyclohexane	25.99	3853565	**Spike**	**ICAL**				
29)	n-Undecane	26.76	3619770	**Amt (ng)**	**RRF**				
30)	n-Dodecane	28.00	3488040	146.90	3.758				
			21213470						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	23.78	439879	0.601	118.9	**-1.03**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	24.52	482296						
24)	1,3,5-Trimethylbenzene	24.66	665021						
26)	p-Isopropyltoluene	25.68	416582	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	25.68	714045	**Amt (ng)**	**RRF**				
			2717823	120.1	0.607				

EM 4/7/12

Massachusetts APH

Continuing Calibration Verification Check Sheet

Data File Name: **04091202.D**
Data File Path: **J:\MS08\Data\2012_04\09**
Operator: **EM**
Date Acquired: **4/9/12 9:14**
Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15/MAPH CCV STD**
Misc Info: **S25-04031203/S25-03161202**
Instrument Name: **MS08**

Enter RRFs from current ICAL!

	Internal Standards	RT	Area
7)	1,4-Difluorobenzene (IS2)	15.89	1084690
16)	Chlorobenzene-d5 (IS3)	21.69	936982

	C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3)	Isopentane	8.20	2405833	2.533	152.7	**0.94**	**-30**	**30**	Pass
4)	n-Hexane	13.08	2517847						
9)	Cyclohexane	15.81	2766222						
10)	2,3-Dimethylpentane	16.17	2918072	**Spike**	**ICAL**				
11)	n-Heptane	17.35	2801114	**Amt (ng)**	**RRF**				
14)	n-Octane	20.69	3216100	151.30	2.509				
			16625188						

	C9-C12 Aliphatics	RT	Area	RRF	ng	% D			
18)	2,3-Dimethylheptane	22.31	3390681	3.837	150.0	**2.09**	**-30**	**30**	Pass
19)	n-Nonane	23.30	3309192						
25)	n-Decane	25.26	3535601						
28)	Butylcyclohexane	25.99	3847831	**Spike**	**ICAL**				
29)	n-Undecane	26.76	3623338	**Amt (ng)**	**RRF**				
30)	n-Dodecane	28.00	3416131	146.90	3.758				
			21122774						

	C9-C10 Aromatics	RT	Area	RRF	ng	% D			
22)	Isopropylbenzene	23.78	435892	0.602	119.1	**-0.84**	**-30**	**30**	Pass
23)	1-Methyl-3-ethylbenzene	24.52	480661						
24)	1,3,5-Trimethylbenzene	24.66	664726						
26)	p-Isopropyltoluene	25.68	414020	**Spike**	**ICAL**				
27)	1,2,3-Trimethylbenzene	25.68	714015	**Amt (ng)**	**RRF**				
			2709314	120.1	0.607				

EM 4/10/12

Response Factor Report MS08

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Dec 12 09:45:45 2011
Response Via : Initial Calibration

Calibration Files
0.1 =12091118.D 0.2 =12091119.D 0.5 =12091120.D 1.0 =12091121.D 5.0 =12091122.D 25 =12091123.D
50 =12091124.D 100 =12091125.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------									
2)	T	Propene	2.487	1.965	1.952	1.692	2.194	2.303	2.185	2.036	2.102	11.62
3)	T	Dichlorodifluo...	3.545	2.805	2.940	2.748	2.432	2.361	2.278	2.199	2.664	16.73
4)	T	Chloromethane	3.290	2.811	2.875	2.512	2.176	2.286	1.977	1.664	2.449	21.62
5)	T	1,2-Dichloro-1...	1.901	1.661	1.575	1.458	1.359	1.333	1.200	1.190	1.460	16.68
6)	T	Vinyl Chloride	2.906	2.590	2.631	2.374	2.145	2.129	1.950	1.939	2.333	15.07
7)	T	1,3-Butadiene	2.145	1.788	1.790	1.718	1.581	1.689	1.621	1.616	1.743	10.33
8)	T	Bromomethane	1.687	1.328	1.349	1.212	1.094	1.142	1.111	1.092	1.252	16.21
9)	T	Chloroethane	1.671	1.259	1.333	1.193	1.101	1.091	1.046	1.044	1.217	17.29
10)	T	Ethanol	2.040	1.345	1.186	1.085	1.022	1.096	1.076	1.064	1.239	27.34
11)	T	Acetonitrile	4.365	2.973	2.723	2.546	2.480	2.562	2.482	2.468	2.825	22.85
12)	T	Acrolein	1.328	0.931	0.907	0.861	0.772	0.814	0.789	0.779	0.897	20.48
13)	T	Acetone	1.645	1.316	1.249	1.129	0.994	1.015	0.981	0.964	1.161	20.26
14)	T	Trichlorofluor...	2.776	2.385	2.496	2.272	2.097	2.135	2.042	2.011	2.277	11.59
15)	T	2-Propanol (Is...		4.463	4.536	4.168	2.920	2.763	2.577	2.672	3.443	26.09
16)	T	Acrylonitrile	2.701	1.907	1.878	1.783	1.745	1.813	1.765	1.738	1.916	16.85
17)	T	1,1-Dichloroet...	1.458	1.418	1.452	1.263	1.206	1.223	1.172	1.152	1.293	9.95
18)	T	2-Methyl-2-Pro...	4.464	3.710	3.939	3.616	3.558	3.584			3.812	9.14
19)	T	Methylene Chlo...			1.958	1.578	1.294	1.273	1.220	1.201	1.421	20.88
20)	T	3-Chloro-1-pro...	2.347	2.260	2.345	2.220	2.150	2.296	2.230	2.191	2.255	3.15
21)	T	Trichlorotrifl...	1.348	1.244	1.299	1.193	1.089	1.098	1.062	1.035	1.171	10.01
22)	T	Carbon Disulfide		6.210	5.678	5.057	4.654	4.699	4.488	4.424	5.030	13.40
23)	T	trans-1,2-Dich...	2.436	2.237	2.206	2.142	1.951	1.953	1.883	1.835	2.080	10.00
24)	T	1,1-Dichloroet...	2.896	2.757	2.747	2.500	2.307	2.379	2.288	2.236	2.514	10.07
25)	T	Methyl tert-Bu...	5.128	4.611	4.650	4.307	4.119	4.185	4.042	3.984	4.378	8.93
26)	T	Vinyl Acetate	0.430	0.368	0.423	0.399	0.393	0.410	0.402	0.398	0.403	4.70
27)	T	2-Butanone (MEK)	1.265	1.003	1.038	0.972	0.927	0.964	0.928	0.794	0.986	13.56
28)	T	cis-1,2-Dichlo...	2.442	2.056	2.101	1.938	1.826	1.836	1.764	1.720	1.960	12.05
29)	T	Diisopropyl Ether	1.446	1.223	1.323	1.262	1.171	1.188	1.153	1.148	1.239	8.26
30)	T	Ethyl Acetate	0.611	0.554	0.573	0.545	0.517	0.535	0.520	0.516	0.546	6.02
31)	T	n-Hexane	3.541	3.006	3.181	2.805	2.582	2.633	2.545	2.543	2.855	12.70

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.679	2.408	2.409	2.204	1.983	2.054	1.974	1.937	2.206	12.18
33)	S	1,2-Dichloroet...	1.586	1.577	1.582	1.590	1.535	1.533	1.520	1.504	1.553	2.19
34)	T	Tetrahydrofura...	1.274	0.932	1.100	0.938	0.910	0.879	0.830	0.821	0.961	15.96
35)	T	Ethyl tert-But...	1.999	1.832	2.033	1.818	1.732	1.757	1.708	1.687	1.821	7.18
36)	T	1,2-Dichloroet...	2.099	1.992	1.976	1.806	1.683	1.700	1.599	1.531	1.798	11.39
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.531	0.465	0.486	0.453	0.419	0.434	0.413	0.403	0.451	9.46
39)	T	Isopropyl Acetate	0.227	0.205	0.220	0.206	0.194	0.201	0.192	0.188	0.204	6.71
40)	T	1-Butanol		0.348	0.319	0.300	0.320	0.335	0.324	0.318	0.323	4.66
41)	T	Benzene	1.633	1.385	1.359	1.227	1.136	1.158	1.101	1.070	1.258	15.11
42)	T	Carbon Tetrach...	0.394	0.356	0.369	0.340	0.334	0.352	0.337	0.333	0.352	6.03
43)	T	Cyclohexane	0.666	0.576	0.588	0.539	0.492	0.500	0.479	0.469	0.539	12.59
44)	T	tert-Amyl Meth...	1.092	0.926	0.998	0.937	0.900	0.918	0.881	0.858	0.939	7.95
45)	T	1,2-Dichloropr...	0.397	0.361	0.368	0.324	0.312	0.316	0.300	0.293	0.334	11.12
46)	T	Bromodichlorom...	0.458	0.387	0.392	0.378	0.362	0.378	0.362	0.353	0.384	8.57
47)	T	Trichloroethene	0.466	0.375	0.379	0.344	0.323	0.328	0.316	0.309	0.355	14.62
48)	T	1,4-Dioxane	0.305	0.282	0.288	0.248	0.245	0.246	0.237	0.230	0.260	10.55
49)	T	2,2,4-Trimethy...	1.964	1.629	1.686	1.546	1.447	1.461	1.387	1.337	1.557	12.98
50)	T	Methyl Methacr...	0.156	0.139	0.150	0.135	0.136	0.142	0.136	0.135	0.141	5.53
51)	T	n-Heptane	0.427	0.373	0.385	0.364	0.341	0.344	0.332	0.324	0.361	9.35
52)	T	cis-1,3-Dichlo...	0.571	0.502	0.521	0.491	0.482	0.500	0.481	0.471	0.502	6.33
53)	T	4-Methyl-2-pen...	0.359	0.295	0.308	0.303	0.297	0.303	0.289	0.284	0.305	7.68
54)	T	trans-1,3-Dich...	0.476	0.413	0.443	0.421	0.429	0.453	0.437	0.427	0.437	4.59
55)	T	1,1,2-Trichlor...	0.340	0.301	0.310	0.284	0.276	0.285	0.271	0.265	0.292	8.44
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	2.305	2.306	2.305	2.309	2.306	2.300	2.310	2.304	2.306	0.14
58)	T	Toluene	3.623	2.920	3.025	2.738	2.571	2.574	2.473	2.421	2.793	14.19
59)	T	2-Hexanone	2.049	1.429	1.515	1.403	1.395	1.422	1.367	1.337	1.490	15.57
60)	T	Dibromochlorom...	0.696	0.618	0.636	0.636	0.612	0.648	0.629	0.625	0.638	4.14
61)	T	1,2-Dibromoethane	0.831	0.730	0.718	0.658	0.641	0.662	0.638	0.628	0.688	9.97
62)	T	n-Butyl Acetate	2.338	1.850	1.857	1.721	1.704	1.765	1.737	1.737	1.839	11.40
63)	T	n-Octane	0.785	0.652	0.714	0.643	0.602	0.611	0.580	0.572	0.645	11.28
64)	T	Tetrachloroethene	1.090	0.904	0.904	0.826	0.767	0.779	0.756	0.755	0.848	13.63
65)	T	Chlorobenzene	2.375	1.868	1.886	1.744	1.610	1.637	1.574	1.548	1.780	15.30
66)	T	Ethylbenzene	3.846	3.171	3.188	2.956	2.803	2.848	2.743	2.680	3.030	12.51
67)	T	m- & p-Xylenes	3.081	2.499	2.611	2.392	2.216	2.273	2.170	2.112	2.419	13.08
68)	T	Bromoform	0.622	0.494	0.556	0.541	0.551	0.598	0.589	0.594	0.568	7.19
69)	T	Styrene	2.478	1.895	1.937	1.800	1.735	1.803	1.726	1.675	1.881	13.64
70)	T	o-Xylene	3.279	2.708	2.726	2.479	2.331	2.373	2.283	2.224	2.550	13.65

Method Path : J:\MS08\Methods\
Method File : R8120911A.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	2.005	1.753	1.847	1.675	1.581	1.597	1.518	1.470	1.681	10.69
72)	T	1,1,2,2-Tetrac...	1.348	1.164	1.262	1.150	1.083	1.121	1.085	1.066	1.160	8.48
73)	S	Bromofluoroben...	0.774	0.771	0.779	0.781	0.775	0.778	0.782	0.780	0.777	0.50
74)	T	Cumene	4.522	3.495	3.524	3.169	2.962	3.002	2.884	2.831	3.299	16.98
75)	T	alpha-Pinene	1.782	1.636	1.734	1.601	1.537	1.578	1.518	1.498	1.611	6.35
76)	T	n-Propylbenzene	5.441	4.229	4.306	3.924	3.710	3.754	3.553	3.394	4.039	16.01
77)	T	3-Ethyltoluene	4.091	3.373	3.461	3.038	2.964	2.981	2.893	2.845	3.206	13.14
78)	T	4-Ethyltoluene	4.003	3.202	3.301	3.151	2.837	2.983	2.810	2.776	3.133	12.84
79)	T	1,3,5-Trimethy...	3.324	2.662	2.723	2.537	2.378	2.426	2.344	2.403	2.600	12.43
80)	T	alpha-Methylst...	1.742	1.386	1.449	1.371	1.390	1.402	1.354	1.399	1.436	8.80
81)	T	2-Ethyltoluene	4.143	3.362	3.430	3.169	2.975	3.048	2.919	2.985	3.254	12.43
82)	T	1,2,4-Trimethy...	3.356	2.663	2.791	2.551	2.433	2.513	2.454	2.548	2.664	11.37
83)	T	n-Decane	1.969	1.702	1.844	1.705	1.582	1.626	1.554	1.609	1.699	8.39
84)	T	Benzyl Chloride	2.373	1.648	1.772	1.688	1.799	2.058	2.054	2.190	1.948	13.35
85)	T	1,3-Dichlorobe...	2.498	1.658	1.649	1.455	1.377	1.409	1.374	1.436	1.607	23.49
86)	T	1,4-Dichlorobe...	2.655	1.785	1.618	1.492	1.380	1.428	1.388	1.449	1.649	25.99
87)	T	sec-Butylbenzene	4.527	3.773	3.816	3.471	3.264	3.328	3.214	3.176	3.571	12.80
88)	T	4-Isopropyltol...	4.426	3.674	3.683	3.416	3.254	3.356	3.253	3.366	3.554	10.98
89)	T	1,2,3-Trimethy...	3.266	2.650	2.852	2.588	2.471	2.573	2.506	2.619	2.691	9.63
90)	T	1,2-Dichlorobe...	2.173	1.589	1.545	1.435	1.332	1.387	1.370	1.415	1.531	17.89
91)	T	d-Limonene	1.124	0.998	1.106	1.069	1.064	1.072	1.040	1.065	1.067	3.58
92)	T	1,2-Dibromo-3-...	0.563	0.488	0.501	0.486	0.494	0.525	0.532	0.542	0.517	5.50
93)	T	n-Undecane	1.922	1.637	1.755	1.671	1.608	1.630	1.608	1.592	1.678	6.63
94)	T	1,2,4-Trichlor...		1.335	1.165	1.062	1.017	1.071	1.086	1.118	1.122	9.32
95)	T	Naphthalene		4.848	3.923	3.638	3.497	3.721	3.755	3.783	3.881	11.50
96)	T	n-Dodecane	1.866	1.599	1.669	1.586	1.545	1.575	1.553	1.509	1.613	6.99
97)	T	Hexachlorobuta...	0.841	0.749	0.730	0.673	0.635	0.664	0.663	0.676	0.704	9.50
98)	T	Cyclohexanone	1.172	0.979	1.021	0.969	0.952	0.962	0.931	0.903	0.986	8.37
99)	T	tert-Butylbenzene	3.486	2.799	2.880	2.658	2.449	2.533	2.453	2.528	2.723	12.71
100)	T	n-Butylbenzene	3.596	2.904	2.958	2.670	2.572	2.625	2.613	2.593	2.817	12.33

(#) = Out of Range

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\07\
Data File : 04071201.D
Acq On : 7 Apr 2012 2:23
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 07 07:01:39 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	82	-0.02
2	T	Propene	2.102	2.305	-9.7	83	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.312	13.2	81	0.00
4	T	Chloromethane	2.449	2.172	11.3	78	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.212	17.0	75	0.00
6	T	Vinyl Chloride	2.333	2.037	12.7	79	0.00
7	T	1,3-Butadiene	1.743	1.733	0.6	85	0.00
8	T	Bromomethane	1.252	1.113	11.1	80	0.00
9	T	Chloroethane	1.217	1.092	10.3	83	0.00
10	T	Ethanol	1.239	1.182	4.6	89	-0.07
11	T	Acetonitrile	2.825	2.653	6.1	85	-0.05
12	T	Acrolein	0.897	0.829	7.6	84	-0.02
13	T	Acetone	1.161	1.067	8.1	87	-0.05
14	T	Trichlorofluoromethane	2.277	2.119	6.9	82	0.00
15	T	2-Propanol (Isopropanol)	3.443	2.761	19.8	82	-0.05
16	T	Acrylonitrile	1.916	1.842	3.9	84	-0.03
17	T	1,1-Dichloroethene	1.293	1.185	8.4	80	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.075	19.3	71	-0.03
19	T	Methylene Chloride	1.421	1.250	12.0	81	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.354	-4.4	85	-0.02
21	T	Trichlorotrifluoroethane	1.171	1.055	9.9	79	0.00
22	T	Carbon Disulfide	5.030	4.592	8.7	81	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.974	5.1	83	-0.01
24	T	1,1-Dichloroethane	2.514	2.417	3.9	84	-0.02
25	T	Methyl tert-Butyl Ether	4.378	4.248	3.0	84	0.00
26	T	Vinyl Acetate	0.403	0.414	-2.7	83	-0.03
27	T	2-Butanone (MEK)	0.986	0.977	0.9	84	-0.03
28	T	cis-1,2-Dichloroethene	1.960	1.856	5.3	83	-0.01
29	T	Diisopropyl Ether	1.239	1.196	3.5	83	-0.01
30	T	Ethyl Acetate	0.546	0.542	0.7	84	-0.03
31	T	n-Hexane	2.855	2.627	8.0	82	-0.01
32	T	Chloroform	2.206	2.031	7.9	82	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.635	-5.3	88	-0.02
34	T	Tetrahydrofuran (THF)	0.961	0.905	5.8	85	-0.01
35	T	Ethyl tert-Butyl Ether	1.821	1.755	3.6	82	-0.01
36	T	1,2-Dichloroethane	1.798	1.708	5.0	83	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	87	-0.01
38	T	1,1,1-Trichloroethane	0.451	0.412	8.6	82	-0.01

EM 4/7/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\07\
Data File : 04071201.D
Acq On : 7 Apr 2012 2:23
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 07 07:01:39 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.194	4.9	83	-0.02
40	T	1-Butanol	0.323	0.356	-10.2	92	-0.05
41	T	Benzene	1.258	1.097	12.8	82	-0.02
42	T	Carbon Tetrachloride	0.352	0.326	7.4	80	-0.01
43	T	Cyclohexane	0.539	0.482	10.6	83	-0.02
44	T	tert-Amyl Methyl Ether	0.939	0.875	6.8	82	-0.02
45	T	1,2-Dichloropropane	0.334	0.303	9.3	83	-0.02
46	T	Bromodichloromethane	0.384	0.357	7.0	82	-0.01
47	T	Trichloroethene	0.355	0.302	14.9	80	-0.02
48	T	1,4-Dioxane	0.260	0.238	8.5	84	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.423	8.6	84	-0.01
50	T	Methyl Methacrylate	0.141	0.134	5.0	82	-0.03
51	T	n-Heptane	0.361	0.336	6.9	84	-0.02
52	T	cis-1,3-Dichloropropene	0.502	0.476	5.2	82	-0.01
53	T	4-Methyl-2-pentanone	0.305	0.298	2.3	85	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.429	1.8	82	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.268	8.2	81	-0.02
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	87	0.00
57	S	Toluene-d8 (SS2)	2.306	2.271	1.5	86	0.00
58	T	Toluene	2.793	2.427	13.1	82	-0.01
59	T	2-Hexanone	1.490	1.418	4.8	87	-0.02
60	T	Dibromochloromethane	0.638	0.594	6.9	80	-0.01
61	T	1,2-Dibromoethane	0.688	0.609	11.5	80	-0.01
62	T	n-Butyl Acetate	1.839	1.752	4.7	86	-0.02
63	T	n-Octane	0.645	0.620	3.9	88	-0.01
64	T	Tetrachloroethene	0.848	0.702	17.2	78	0.00
65	T	Chlorobenzene	1.780	1.527	14.2	81	0.00
66	T	Ethylbenzene	3.030	2.719	10.3	83	0.00
67	T	m- & p-Xylenes	2.419	2.179	9.9	83	-0.02
68	T	Bromoform	0.568	0.540	4.9	79	-0.01
69	T	Styrene	1.881	1.741	7.4	84	-0.01
70	T	o-Xylene	2.550	2.268	11.1	83	-0.01
71	T	n-Nonane	1.681	1.549	7.9	84	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.053	9.2	82	-0.02
73	S	Bromofluorobenzene (SS3)	0.777	0.774	0.4	87	0.00
74	T	Cumene	3.299	2.975	9.8	86	-0.01
75	T	alpha-Pinene	1.611	1.486	7.8	82	-0.01
76	T	n-Propylbenzene	4.039	3.560	11.9	82	-0.01

EM 4/7/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\07\
Data File : 04071201.D
Acq On : 7 Apr 2012 2:23
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 07 07:01:39 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.844	11.3	83	-0.01
78	T	4-Ethyltoluene	3.133	2.708	13.6	79	-0.02
79	T	1,3,5-Trimethylbenzene	2.600	2.285	12.1	82	-0.01
80	T	alpha-Methylstyrene	1.436	1.322	7.9	82	-0.01
81	T	2-Ethyltoluene	3.254	2.841	12.7	81	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.354	11.6	81	-0.02
83	T	n-Decane	1.699	1.553	8.6	83	-0.02
84	T	Benzyl Chloride	1.948	2.052	-5.3	87	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.281	20.3	79	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.304	20.9	79	-0.02
87	T	sec-Butylbenzene	3.571	3.140	12.1	82	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.145	11.5	82	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.401	10.8	81	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.260	17.7	79	-0.01
91	T	d-Limonene	1.067	1.048	1.8	85	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.480	7.2	80	-0.01
93	T	n-Undecane	1.678	1.570	6.4	84	-0.01
94	T	1,2,4-Trichlorobenzene	1.122	0.972	13.4	79	-0.01
95	T	Naphthalene	3.881	3.485	10.2	81	-0.01
96	T	n-Dodecane	1.613	1.578	2.2	87	0.00
97	T	Hexachlorobutadiene	0.704	0.592	15.9	78	0.00
98	T	Cyclohexanone	0.986	0.996	-1.0	90	-0.02
99	T	tert-Butylbenzene	2.723	2.389	12.3	82	-0.02
100	T	n-Butylbenzene	2.817	2.452	13.0	81	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

EM 4/7/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\09\
Data File : 04091201.D
Acq On : 9 Apr 2012 8:31
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 09 09:37:31 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	85	-0.02
2	T	Propene	2.102	1.988	5.4	73	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.317	13.0	83	0.00
4	T	Chloromethane	2.449	2.268	7.4	84	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.239	15.1	79	0.00
6	T	Vinyl Chloride	2.333	2.103	9.9	84	0.00
7	T	1,3-Butadiene	1.743	1.776	-1.9	89	0.00
8	T	Bromomethane	1.252	1.094	12.6	81	0.00
9	T	Chloroethane	1.217	1.068	12.2	83	0.00
10	T	Ethanol	1.239	1.175	5.2	91	-0.07
11	T	Acetonitrile	2.825	2.582	8.6	85	-0.05
12	T	Acrolein	0.897	0.815	9.1	85	-0.02
13	T	Acetone	1.161	1.051	9.5	88	-0.05
14	T	Trichlorofluoromethane	2.277	2.083	8.5	83	0.00
15	T	2-Propanol (Isopropanol)	3.443	3.492	-1.4	107	-0.05
16	T	Acrylonitrile	1.916	1.810	5.5	85	-0.03
17	T	1,1-Dichloroethene	1.293	1.183	8.5	82	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.307	13.2	78	-0.03
19	T	Methylene Chloride	1.421	1.225	13.8	81	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.255	2.381	-5.6	88	-0.02
21	T	Trichlorotrifluoroethane	1.171	1.041	11.1	80	0.00
22	T	Carbon Disulfide	5.030	4.651	7.5	84	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.949	6.3	85	-0.02
24	T	1,1-Dichloroethane	2.514	2.391	4.9	85	-0.02
25	T	Methyl tert-Butyl Ether	4.378	4.214	3.7	85	-0.01
26	T	Vinyl Acetate	0.403	0.413	-2.5	85	-0.03
27	T	2-Butanone (MEK)	0.986	0.968	1.8	85	-0.03
28	T	cis-1,2-Dichloroethene	1.960	1.838	6.2	85	-0.02
29	T	Diisopropyl Ether	1.239	1.180	4.8	84	-0.02
30	T	Ethyl Acetate	0.546	0.537	1.6	85	-0.03
31	T	n-Hexane	2.855	2.627	8.0	84	-0.02
32	T	Chloroform	2.206	2.007	9.0	83	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.644	-5.9	91	-0.02
34	T	Tetrahydrofuran (THF)	0.961	0.893	7.1	86	-0.02
35	T	Ethyl tert-Butyl Ether	1.821	1.753	3.7	84	-0.02
36	T	1,2-Dichloroethane	1.798	1.705	5.2	85	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	-0.01
38	T	1,1,1-Trichloroethane	0.451	0.411	8.9	83	-0.01

EM 4/10/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\09\
Data File : 04091201.D
Acq On : 9 Apr 2012 8:31
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 09 09:37:31 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.196	3.9	85	-0.03
40	T	1-Butanol	0.323	0.354	-9.6	93	-0.05
41	T	Benzene	1.258	1.101	12.5	84	-0.02
42	T	Carbon Tetrachloride	0.352	0.325	7.7	81	-0.02
43	T	Cyclohexane	0.539	0.479	11.1	84	-0.02
44	T	tert-Amyl Methyl Ether	0.939	0.877	6.6	84	-0.02
45	T	1,2-Dichloropropane	0.334	0.303	9.3	84	-0.02
46	T	Bromodichloromethane	0.384	0.358	6.8	83	-0.01
47	T	Trichloroethene	0.355	0.297	16.3	80	-0.02
48	T	1,4-Dioxane	0.260	0.237	8.8	85	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.432	8.0	86	-0.02
50	T	Methyl Methacrylate	0.141	0.134	5.0	83	-0.03
51	T	n-Heptane	0.361	0.338	6.4	86	-0.02
52	T	cis-1,3-Dichloropropene	0.502	0.480	4.4	84	-0.01
53	T	4-Methyl-2-pentanone	0.305	0.304	0.3	88	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.432	1.1	84	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.265	9.2	82	-0.02
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	88	0.00
57	S	Toluene-d8 (SS2)	2.306	2.307	-0.0	88	0.00
58	T	Toluene	2.793	2.439	12.7	84	-0.01
59	T	2-Hexanone	1.490	1.449	2.8	90	-0.02
60	T	Dibromochloromethane	0.638	0.597	6.4	81	-0.01
61	T	1,2-Dibromoethane	0.688	0.615	10.6	82	-0.01
62	T	n-Butyl Acetate	1.839	1.784	3.0	89	-0.02
63	T	n-Octane	0.645	0.621	3.7	90	-0.01
64	T	Tetrachloroethene	0.848	0.701	17.3	79	-0.01
65	T	Chlorobenzene	1.780	1.514	14.9	82	0.00
66	T	Ethylbenzene	3.030	2.768	8.6	86	-0.01
67	T	m- & p-Xylenes	2.419	2.181	9.8	85	-0.02
68	T	Bromoform	0.568	0.545	4.0	80	-0.01
69	T	Styrene	1.881	1.734	7.8	85	-0.01
70	T	o-Xylene	2.550	2.276	10.7	85	-0.02
71	T	n-Nonane	1.681	1.568	6.7	87	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.055	9.1	83	-0.02
73	S	Bromofluorobenzene (SS3)	0.777	0.754	3.0	85	0.00
74	T	Cumene	3.299	2.963	10.2	87	-0.01
75	T	alpha-Pinene	1.611	1.495	7.2	84	-0.01
76	T	n-Propylbenzene	4.039	3.572	11.6	84	-0.01

EM 4/10/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\09\
Data File : 04091201.D
Acq On : 9 Apr 2012 8:31
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 09 09:37:31 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.767	13.7	82	-0.01
78	T	4-Ethyltoluene	3.133	2.782	11.2	82	-0.02
79	T	1,3,5-Trimethylbenzene	2.600	2.267	12.8	82	-0.01
80	T	alpha-Methylstyrene	1.436	1.314	8.5	83	-0.02
81	T	2-Ethyltoluene	3.254	2.834	12.9	82	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.344	12.0	82	-0.02
83	T	n-Decane	1.699	1.566	7.8	85	-0.02
84	T	Benzyl Chloride	1.948	2.097	-7.6	90	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.273	20.8	80	-0.02
86	T	1,4-Dichlorobenzene	1.649	1.273	22.8	79	-0.02
87	T	sec-Butylbenzene	3.571	3.138	12.1	83	-0.02
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.134	11.8	82	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.416	10.2	83	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.248	18.5	79	-0.02
91	T	d-Limonene	1.067	1.051	1.5	86	-0.02
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.485	6.2	81	-0.01
93	T	n-Undecane	1.678	1.574	6.2	85	-0.01
94	T	1,2,4-Trichlorobenzene	1.122	0.928	17.3	76	-0.01
95	T	Naphthalene	3.881	3.358	13.5	80	-0.01
96	T	n-Dodecane	1.613	1.547	4.1	87	0.00
97	T	Hexachlorobutadiene	0.704	0.575	18.3	76	0.00
98	T	Cyclohexanone	0.986	1.009	-2.3	93	-0.02
99	T	tert-Butylbenzene	2.723	2.380	12.6	83	-0.02
100	T	n-Butylbenzene	2.817	2.457	12.8	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

EM 4/10/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\10\
Data File : 04101201.D
Acq On : 10 Apr 2012 6:17
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 10 07:33:42 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	82	-0.01
2	T	Propene	2.102	2.242	-6.7	79	0.00
3	T	Dichlorodifluoromethane (CF	2.664	2.319	13.0	80	0.00
4	T	Chloromethane	2.449	2.130	13.0	76	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.460	1.223	16.2	75	0.00
6	T	Vinyl Chloride	2.333	2.070	11.3	79	0.00
7	T	1,3-Butadiene	1.743	1.755	-0.7	85	0.00
8	T	Bromomethane	1.252	1.098	12.3	78	0.00
9	T	Chloroethane	1.217	1.080	11.3	81	0.00
10	T	Ethanol	1.239	1.168	5.7	87	-0.07
11	T	Acetonitrile	2.825	2.603	7.9	83	-0.05
12	T	Acrolein	0.897	0.817	8.9	82	-0.02
13	T	Acetone	1.161	1.045	10.0	84	-0.04
14	T	Trichlorofluoromethane	2.277	2.073	9.0	79	0.00
15	T	2-Propanol (Isopropanol)	3.443	2.874	16.5	85	-0.05
16	T	Acrylonitrile	1.916	1.809	5.6	81	-0.03
17	T	1,1-Dichloroethene	1.293	1.180	8.7	79	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.812	3.165	17.0	72	-0.03
19	T	Methylene Chloride	1.421	1.244	12.5	80	0.00
20	T	3-Chloro-1-propene (Allyl C	2.255	2.321	-2.9	82	-0.01
21	T	Trichlorotrifluoroethane	1.171	1.047	10.6	78	0.00
22	T	Carbon Disulfide	5.030	4.594	8.7	80	0.00
23	T	trans-1,2-Dichloroethene	2.080	1.949	6.3	81	-0.01
24	T	1,1-Dichloroethane	2.514	2.370	5.7	81	-0.01
25	T	Methyl tert-Butyl Ether	4.378	4.163	4.9	81	0.00
26	T	Vinyl Acetate	0.403	0.407	-1.0	81	-0.03
27	T	2-Butanone (MEK)	0.986	0.963	2.3	81	-0.02
28	T	cis-1,2-Dichloroethene	1.960	1.818	7.2	81	-0.01
29	T	Diisopropyl Ether	1.239	1.180	4.8	81	0.00
30	T	Ethyl Acetate	0.546	0.533	2.4	81	-0.02
31	T	n-Hexane	2.855	2.640	7.5	82	0.00
32	T	Chloroform	2.206	1.998	9.4	79	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.553	1.632	-5.1	87	-0.01
34	T	Tetrahydrofuran (THF)	0.961	0.881	8.3	82	0.00
35	T	Ethyl tert-Butyl Ether	1.821	1.737	4.6	81	-0.01
36	T	1,2-Dichloroethane	1.798	1.688	6.1	81	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	85	0.00
38	T	1,1,1-Trichloroethane	0.451	0.407	9.8	80	0.00

EM 4/10/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\10\
Data File : 04101201.D
Acq On : 10 Apr 2012 6:17
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 10 07:33:42 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.204	0.192	5.9	81	-0.02
40	T	1-Butanol	0.323	0.351	-8.7	89	-0.05
41	T	Benzene	1.258	1.099	12.6	81	-0.01
42	T	Carbon Tetrachloride	0.352	0.321	8.8	78	-0.01
43	T	Cyclohexane	0.539	0.476	11.7	81	-0.01
44	T	tert-Amyl Methyl Ether	0.939	0.871	7.2	81	-0.01
45	T	1,2-Dichloropropane	0.334	0.299	10.5	80	-0.01
46	T	Bromodichloromethane	0.384	0.354	7.8	80	0.00
47	T	Trichloroethene	0.355	0.299	15.8	78	-0.01
48	T	1,4-Dioxane	0.260	0.237	8.8	82	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.557	1.411	9.4	82	-0.01
50	T	Methyl Methacrylate	0.141	0.132	6.4	79	-0.02
51	T	n-Heptane	0.361	0.332	8.0	82	-0.01
52	T	cis-1,3-Dichloropropene	0.502	0.473	5.8	81	0.00
53	T	4-Methyl-2-pentanone	0.305	0.299	2.0	84	-0.02
54	T	trans-1,3-Dichloropropene	0.437	0.426	2.5	80	-0.01
55	T	1,1,2-Trichloroethane	0.292	0.261	10.6	78	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	85	0.00
57	S	Toluene-d8 (SS2)	2.306	2.284	1.0	85	0.00
58	T	Toluene	2.793	2.389	14.5	79	0.00
59	T	2-Hexanone	1.490	1.403	5.8	84	-0.02
60	T	Dibromochloromethane	0.638	0.586	8.2	77	0.00
61	T	1,2-Dibromoethane	0.688	0.604	12.2	78	-0.01
62	T	n-Butyl Acetate	1.839	1.731	5.9	84	-0.01
63	T	n-Octane	0.645	0.616	4.5	86	-0.01
64	T	Tetrachloroethene	0.848	0.697	17.8	76	0.00
65	T	Chlorobenzene	1.780	1.509	15.2	79	0.00
66	T	Ethylbenzene	3.030	2.669	11.9	80	0.00
67	T	m- & p-Xylenes	2.419	2.150	11.1	81	-0.02
68	T	Bromoform	0.568	0.538	5.3	77	-0.01
69	T	Styrene	1.881	1.716	8.8	81	-0.01
70	T	o-Xylene	2.550	2.247	11.9	81	-0.01
71	T	n-Nonane	1.681	1.523	9.4	81	-0.01
72	T	1,1,2,2-Tetrachloroethane	1.160	1.035	10.8	79	-0.02
73	S	Bromofluorobenzene (SS3)	0.777	0.772	0.6	85	0.00
74	T	Cumene	3.299	2.940	10.9	84	0.00
75	T	alpha-Pinene	1.611	1.473	8.6	80	0.00
76	T	n-Propylbenzene	4.039	3.520	12.8	80	0.00

EM 4/10/12

Evaluate Continuing Calibration Report

Data Path : J:\MS08\Data\2012_04\10\
Data File : 04101201.D
Acq On : 10 Apr 2012 6:17
Operator : EM
Sample : 25ng TO-15 CCV STD
Misc : S25-04031203/S25-03191204
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 10 07:33:42 2012
Quant Method : J:\MS08\Methods\R8120911A.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Dec 12 09:45:45 2011
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	3.206	2.771	13.6	79	-0.01
78	T	4-Ethyltoluene	3.133	2.718	13.2	78	-0.01
79	T	1,3,5-Trimethylbenzene	2.600	2.246	13.6	79	-0.01
80	T	alpha-Methylstyrene	1.436	1.310	8.8	80	-0.01
81	T	2-Ethyltoluene	3.254	2.814	13.5	79	-0.01
82	T	1,2,4-Trimethylbenzene	2.664	2.306	13.4	78	-0.01
83	T	n-Decane	1.699	1.542	9.2	81	-0.01
84	T	Benzyl Chloride	1.948	2.028	-4.1	84	-0.02
85	T	1,3-Dichlorobenzene	1.607	1.269	21.0	77	-0.01
86	T	1,4-Dichlorobenzene	1.649	1.282	22.3	77	-0.02
87	T	sec-Butylbenzene	3.571	3.095	13.3	79	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.554	3.092	13.0	79	-0.01
89	T	1,2,3-Trimethylbenzene	2.691	2.371	11.9	79	-0.01
90	T	1,2-Dichlorobenzene	1.531	1.242	18.9	77	-0.01
91	T	d-Limonene	1.067	1.026	3.8	82	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.517	0.478	7.5	78	-0.01
93	T	n-Undecane	1.678	1.544	8.0	81	0.00
94	T	1,2,4-Trichlorobenzene	1.122	0.949	15.4	76	-0.01
95	T	Naphthalene	3.881	3.417	12.0	78	-0.01
96	T	n-Dodecane	1.613	1.535	4.8	83	0.00
97	T	Hexachlorobutadiene	0.704	0.579	17.8	75	0.00
98	T	Cyclohexanone	0.986	0.977	0.9	87	-0.02
99	T	tert-Butylbenzene	2.723	2.358	13.4	80	-0.01
100	T	n-Butylbenzene	2.817	2.428	13.8	79	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Cam 4/10/12

Response Factor Report MS07

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
1)	I	Bromochloromethan	ISTD										
2)	T	Dichlorodifluorom	3.784	3.527	3.467	3.822	3.279	2.986	2.875	3.155	2.920	3.313	10.83
3)	T	Chloromethane		1.470	0.956	1.190	0.904	0.778	0.569	0.897	0.827	0.949	28.81
4)	T	Vinyl Chloride	2.802	2.749	2.588	3.044	2.597	2.406	2.314	2.588	2.446	2.615	8.57
5)	T	Bromomethane	1.894	1.496	1.211	1.613	1.335	1.208	1.105	1.433	1.367	1.407	17.11
6)	T	Chloroethane	1.511	1.416	1.357	1.517	1.295	1.237	1.195	1.312	1.224	1.340	8.92
7)	T	Acetone				1.548	1.214	1.122	1.080	1.193	1.090	1.208	14.52
8)	T	Trichlorofluorome	3.051	2.887	2.831	3.145	2.692	2.565	2.447	2.691	2.536	2.761	8.59
9)	T	1,1-Dichloroethen	1.591	1.440	1.366	1.547	1.322	1.229	1.214	1.385	1.295	1.376	9.52
10)	T	Methylene Chlorid		2.134	1.795	1.866	1.536	1.426	1.404	1.494	1.411	1.633	16.43
11)	T	Trichlorotrifluor	1.408	1.325	1.295	1.376	1.169	1.081	1.062	1.170	1.097	1.220	10.87
12)	T	trans-1,2-Dichlor	1.972	1.710	1.589	1.762	1.505	1.406	1.393	1.512	1.439	1.588	12.18
13)	T	1,1-Dichloroethan	3.265	3.020	3.016	3.383	2.925	2.756	2.681	2.937	2.841	2.980	7.60
14)	T	Methyl tert-Butyl	5.168	4.740	4.762	5.045	4.335	4.137	4.166	4.690	4.471	4.613	7.90
15)	T	cis-1,2-Dichloroe	1.885	1.626	1.630	1.776	1.524	1.434	1.388	1.575	1.482	1.591	10.09
16)	T	Chloroform			3.041	3.257	2.586	2.390	2.280	2.524	2.374	2.636	14.03
17)	S	1,2-Dichloroethan	2.000	2.002	2.032	2.018	1.989	1.973	1.960	1.938	1.932	1.983	1.75
18)	T	1,2-Dichloroethan	2.582	2.460	2.375	2.604	2.222	2.090	1.988	2.222	2.094	2.293	9.73
19)	T	1,1,1-Trichloroet	2.587	2.431	2.340	2.573	2.191	2.059	2.007	2.278	2.150	2.291	9.18
20)	T	Benzene			7.536	7.534	6.055	5.665	5.395	5.903	5.468	6.222	14.88
21)	T	Carbon Tetrachlor	2.280	1.842	1.769	1.950	1.676	1.579	1.549	1.771	1.692	1.790	12.41
22)	I	1,4-Difluorobenze	ISTD										
23)	T	1,2-Dichloropropa	0.417	0.397	0.373	0.409	0.354	0.331	0.319	0.358	0.336	0.366	9.68
24)	T	Bromodichlorometh	0.491	0.464	0.436	0.489	0.420	0.398	0.394	0.447	0.416	0.439	8.26
25)	T	Trichloroethene	0.418	0.379	0.349	0.390	0.324	0.305	0.287	0.326	0.307	0.343	12.96
26)	T	1,4-Dioxane	0.324	0.290	0.270	0.278	0.242	0.231	0.227	0.258	0.243	0.263	11.99
27)	T	cis-1,3-Dichlorop	0.567	0.523	0.508	0.540	0.499	0.484	0.488	0.559	0.522	0.521	5.67
28)	T	trans-1,3-Dichlor	0.457	0.434	0.431	0.444	0.419	0.409	0.417	0.505	0.482	0.444	7.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : J:\Ms07\METHODS\X7021712B.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Calibration Files
10 =02171204.D 25 =02171205.D 75 =02171206.D 100 =02171207.D 500 =02171208.D
1000 =02171209.D 2500 =02171210.D 9999 =02171211.D 20K =02171212.D =

		Compound	10	25	75	100	500	1000	2500	9999	20K	Avg	%RSD
29)	T	1,1,2-Trichloroet	0.315	0.296	0.286	0.305	0.263	0.248	0.242	0.274	0.257	0.276	9.32
30)	S	Toluene-d8 (SS2)	1.053	1.071	1.054	1.047	1.051	1.052	1.071	1.060	1.049	1.056	0.84
31)	T	Toluene	1.782	1.541	1.420	1.485	1.269	1.198	1.177	1.307	1.186	1.374	14.76
32)	T	1,2-Dibromoethane	0.379	0.362	0.345	0.362	0.323	0.307	0.304	0.351	0.331	0.340	7.65
33)	T	Tetrachloroethene	0.423	0.394	0.371	0.400	0.341	0.320	0.311	0.347	0.326	0.359	11.03
34)	I	Chlorobenzene-d5	ISTD										
35)	T	Chlorobenzene	4.581	4.172	4.017	4.308	3.688	3.469	3.311	3.705	3.345	3.844	11.68
36)	T	Ethylbenzene	7.604	7.082	6.707	7.235	6.297	6.070	5.915	6.682	5.878	6.608	9.30
37)	T	m,p-Xylene	5.861	5.347	5.132	5.536	4.930	4.777	4.719	5.268	4.558	5.125	8.24
38)	T	o-Xylene	6.505	5.826	5.526	5.889	5.188	4.995	4.950	5.594	4.932	5.490	9.67
39)	T	1,1,2,2-Tetrachlo	2.655	2.674	2.710	2.646	2.437	2.371	2.298	2.761	2.498	2.561	6.40
40)	S	Bromofluorobenzen	1.712	1.701	1.695	1.697	1.683	1.680	1.670	1.642	1.593	1.675	2.20
41)	T	1,3-Dichlorobenze	3.304	3.261	3.222	3.204	2.835	2.719	2.608	3.138	2.846	3.015	8.71
42)	T	1,4-Dichlorobenze	3.470	3.303	3.208	3.208	2.803	2.671	2.579	3.174	2.891	3.034	10.13
43)	T	1,2-Dichlorobenze	3.271	3.123	3.112	3.026	2.662	2.536	2.418	3.053	2.772	2.886	10.31
44)	T	1,2,4-Trichlorobe	2.184	2.118	2.169	1.753	1.641	1.608	1.575	2.139	1.978	1.907	13.66
45)	T	Naphthalene	6.857	6.355	6.704	5.143	5.107	5.172	5.297	8.126	7.328	6.232	17.82
46)	T	Hexachlorobutadie	1.486	1.423	1.403	1.217	1.055	1.013	0.975	1.227	1.145	1.216	15.40

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_04\10\
Data File : 04101203.D
Acq On : 10 Apr 2012 9:21 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00163
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 10 10:05:18 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	78	0.00
2	T	Dichlorodifluoromethane (CF	3.313	2.565	22.6	61	0.00
3	T	Chloromethane	0.949	0.735	22.6	63	0.00
4	T	Vinyl Chloride	2.615	2.063	21.1	62	0.00
5	T	Bromomethane	1.407	1.209	14.1	71	0.00
6	T	Chloroethane	1.340	1.091	18.6	66	0.00
7	T	Acetone	1.208	1.070	11.4	69	0.00
8	T	Trichlorofluoromethane	2.761	2.217	19.7	64	0.00
9	T	1,1-Dichloroethene	1.376	1.163	15.5	69	0.00
10	T	Methylene Chloride	1.633	1.296	20.6	66	0.00
11	T	Trichlorotrifluoroethane	1.220	1.078	11.6	72	0.00
12	T	trans-1,2-Dichloroethene	1.588	1.296	18.4	67	0.00
13	T	1,1-Dichloroethane	2.980	2.472	17.0	66	0.00
14	T	Methyl tert-Butyl Ether	4.613	3.623	21.5	65	0.00
15	T	cis-1,2-Dichloroethene	1.591	1.314	17.4	67	0.00
16	T	Chloroform	2.636	2.183	17.2	66	0.00
17	S	1,2-Dichloroethane-d4 (SS1)	1.983	1.970	0.7	77	0.00
18	T	1,2-Dichloroethane	2.293	1.741	24.1	61	0.00
19	T	1,1,1-Trichloroethane	2.291	1.853	19.1	66	0.00
20	T	Benzene	6.222	5.270	15.3	68	0.00
21	T	Carbon Tetrachloride	1.790	1.442	19.4	67	0.00
22	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
23	T	1,2-Dichloropropane	0.366	0.260	29.0	65	0.00
24	T	Bromodichloromethane	0.439	0.306	30.3#	64	0.00
25	T	Trichloroethene	0.343	0.253	26.2	69	0.00
26	T	1,4-Dioxane	0.263	0.199	24.3	73	0.00
27	T	cis-1,3-Dichloropropene	0.521	0.396	24.0	70	0.00
28	T	trans-1,3-Dichloropropene	0.444	0.339	23.6	71	0.00
29	T	1,1,2-Trichloroethane	0.276	0.200	27.5	67	0.00
30	S	Toluene-d8 (SS2)	1.056	1.154	-9.3	97	0.00
31	T	Toluene	1.374	1.027	25.3	72	0.00
32	T	1,2-Dibromoethane	0.340	0.257	24.4	70	0.00
33	T	Tetrachloroethene	0.359	0.284	20.9	74	0.00
34	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	84	0.00
35	T	Chlorobenzene	3.844	3.248	15.5	74	0.00
36	T	Ethylbenzene	6.608	5.549	16.0	74	0.00
37	T	m,p-Xylene	5.125	4.350	15.1	74	0.00

Evaluate Continuing Calibration Report

Data Path : J:\Ms07\DATA\2012_04\10\
Data File : 04101203.D
Acq On : 10 Apr 2012 9:21 am
Operator : KR
Sample : 500pg TO-15 SIM CCV STD
Misc : STD00161/STD00163
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 10 10:05:18 2012
Quant Method : J:\Ms07\METHODS\X7021712B.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri Mar 02 08:26:43 2012
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
38	T	o-Xylene	5.490	4.592	16.4	74	0.00
39	T	1,1,2,2-Tetrachloroethane	2.561	2.087	18.5	72	0.00
40	S	Bromofluorobenzene (SS3)	1.675	1.858	-10.9	93	0.00
41	T	1,3-Dichlorobenzene	3.015	2.719	9.8	80	0.00
42	T	1,4-Dichlorobenzene	3.034	2.710	10.7	81	0.00
43	T	1,2-Dichlorobenzene	2.886	2.620	9.2	83	0.00
44	T	1,2,4-Trichlorobenzene	1.907	1.807	5.2	92	0.00
45	T	Naphthalene	6.232	6.463	-3.7	106	0.00
46	T	Hexachlorobutadiene	1.216	1.083	10.9	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Appendix B

Data validation was performed for six analytical laboratory reports issued by Columbia Analytical Services identified as P1200947, P1201004, P1201043, P1201074, P1201121 and P1201247. Indoor air samples were analyzed for EPA Methods TO-15, TO-15 SIM and air-phase petroleum hydrocarbons (APH). Laboratory quality assurance/quality control (QA/QC) provided for each analysis was evaluated. All holding times were met for each analysis and method blank results were non-detect for all analyses. Laboratory control sample (LCS) spike recoveries were met for all analyses and surrogate spike recoveries were acceptable for the TO-15 methods. All laboratory duplicate results were acceptable. A small number of results required qualification due to field duplicate results. Co-elution of peaks was observed in two samples with high concentrations, however, this did not affect the quality of the data. Overall, the laboratory results demonstrated an acceptable level of accuracy (LCS and surrogate results) and precision (duplicate results). The few samples requiring qualification are all considered usable results.

Columbia Analytical Services
Service Request # P1200947

Sample ID	Chemical	Reported Conc. (ug/m^3)	Lab Flag	Qualified Value (ug/m^3)	Flag	Note
03-1F-030512	n-Nonane	3.6		3.6	J	(1)
01-1F-030512	methylene chloride	0.83		0.83	J	(2)
	vinyl acetate	8.1	U	8.1	UJ	(3)
	methyl methacrylate	1.9		1.9	J	(4)
	n-butyl acetate	4.3		4.3	J	(4)
	vinyl chloride	0.048		0.048	J	(2)
	TCE	0.29		0.29	J	(4)
	naphthalene	0.36		0.36	J	(4)
	C9-C12 aliphatics	21		21	J	(4)
	C9-C10 aromatics	12		12	J	(2)
51-1F-030512	methylene chloride	0.86	U	0.86	UJ	(5)
	vinyl acetate	18		18	J	(6)
	methyl methacrylate	3.2		3.2	J	(4)
	n-butyl acetate	3		3	J	(4)
	vinyl chloride	0.043	U	0.043	UJ	(5)
	TCE	0.47		0.47	J	(4)
	naphthalene	0.21		0.21	J	(4)
	C9-C12 aliphatics	40		40	J	(4)
	C9-C10 aromatics	8.6	U	8.6	UJ	(5)

Notes:
(1): Detected value is qualified as estimated and flagged with a J qualifier due to coelution with a non-target compound. The result may be biased high.
(2): Value is qualified as estimated and flagged with a J qualifier as the chemical was detected in the parent sample but nondetect in the field duplicate. The result may be biased high.
(3): Nondetect value is qualified as estimated and flagged with a UJ qualifier as the chemical was not detected in the parent sample but detected in the field duplicate. The result may be biased low.
(4): Value is qualifed as estimated and flagged with a J qualifier based on a high relative percent difference (RPD) calculated between parent and field duplicate samples.
(5): Nondetect value is qualified as estimated and flagged with a UJ qualifier as the chemical was not detected in the field duplicate but detected in the parent sample. The result may be biased low.
(6): Value is qualified as estimated and flagged with a J qualifier as the chemical was detected in the field duplicate but nondetect in the parent sample. The result may be biased high.

Columbia Analytical Services
Service Request # P1201043

Sample ID	Chemical	Reported Conc. (ug/m^3)	Lab Flag	Qualified Value (ug/m^3)	Flag	Note
15-1F-031212	Benzene	0.78		0.78	J	(1)
	m,p-Xylenes	1.6		1.6	J	(1)
	Tetrachloroethene	0.098		0.098	J	(2)
	C9-C12 aliphatics	15	U	15	UJ	(3)

52-1F-031212	Benzene	0.88	U	0.88	UJ	(4)
	m,p-Xylenes	1.8	U	1.8	UJ	(4)
	Tetrachloroethene	0.14		0.14	J	(2)
	C9-C12 aliphatics	19		19	J	(5)

Notes:
(1): Value is qualified as estimated and flagged with a J qualifier as the chemical was detected in the sample but nondetect in the laboratory duplicate. The result may be biased high.
(2): Value is qualifed as estimated and flagged with a J qualifier based on a high relative percent difference (RPD) calculated between parent and field duplicate samples.
(3): Nondetect value is qualified as estimated and flagged with a UJ qualifier as the chemical was not detected in the parent sample but detected in the field duplicate. The result may be biased low.
(4): Nondetect value is qualified as estimated and flagged with a UJ qualifier as the chemical was not detected in the field duplicate but detected in the parent sample. The result may be biased low.
(5): Value is qualified as estimated and flagged with a J qualifier as the chemical was detected in the field duplicate but nondetect in the parent sample. The result may be biased high.

Columbia Analytical Services
Service Request # P1201121

Sample ID	Chemical	Reported Conc. (ug/m^3)	Lab Flag	Qualified Value (ug/m^3)	Flag	Note
26-1F-031912	2-Propanol	11		11	J	(1)
19-1F-031412	Propene	2.4		2.4	J	(2)
	2-Propanol	12		12	J	(2)
	Tetrachloroethene	0.070		0.070	J	(2)
	C9-C12 aliphatics	17	U	17	UJ	(3)
53-1F-031412	Propene	0.72	U		UJ	(4)
	2-Propanol	1.4	U		UJ	(4)
	Tetrachloroethene	0.036	U		UJ	(4)
	C9-C12 aliphatics	20			J	(5)

Notes:
(1): Detected value is qualified as estimated and flagged with a J qualifier due to coelution with a non-target compound. The result may be biased high.
(2): Value is qualified as estimated and flagged with a J qualifier as the chemical was detected in the sample but nondetect in the laboratory duplicate. The result may be biased high.
(3): Nondetect value is qualified as estimated and flagged with a UJ qualifier as the chemical was not detected in the parent sample but detected in the field duplicate. The result may be biased low.
(4): Nondetect value is qualified as estimated and flagged with a UJ qualifier as the chemical was not detected in the field duplicate but detected in the parent sample. The result may be biased low.
(5): Value is qualified as estimated and flagged with a J qualifier as the chemical was detected in the field duplicate but nondetect in the parent sample. The result may be biased high.

Columbia Analytical Services
Service Request # P1201319

Sample ID	Chemical	Reported Conc. (ug/m^3)	Lab Flag	Qualified Value (ug/m^3)	Flag	Note
40-1F-032812	Trichlorotrifluoroethane	0.88	U	0.88	UJ	(1)
	Naphthalene	0.42		0.42	J	(2)
	1,2-Dichloroethane	0.36		0.36	J	(2)
	C9-C12 aliphatics	30		30	J	(2)
55-1F-032812	Trichlorotrifluoroethane	0.82		0.82	J	(3)
	Naphthalene	0.30		0.30	J	(2)
	1,2-Dichloroethane	0.24		0.24	J	(2)
	C9-C12 aliphatics	19		19	J	(2)

Notes:
(1): Nondetect value is qualified as estimated and flagged with a UJ qualifier as the chemical was not detected in the parent sample but detected in the field duplicate. The result may be biased low.
(2): Value is qualifed as estimated and flagged with a J qualifier based on a high relative percent difference (RPD) calculated between parent and field duplicate samples.
(3): Value is qualified as estimated and flagged with a J qualifier as the chemical was detected in the field duplicate but nondetect in the parent sample. The result may be biased high.

Columbia Analytical Services
Service Request # P1201320

Sample ID	Chemical	Reported Conc. (ug/m^3)	Lab Flag	Qualified Value (ug/m^3)	Flag	Note
29-1F-032612	Propene	5.0		5.0	J	(1)
	2-Propanol	21		21	J	(1)
	Chloromethane	0.77		0.77	J	(2)
	Ethyl acetate	1.6		1.6	J	(2)
	n-Nonane	0.88		0.88	J	(2)
	d-Limonene	11		11	J	(1)
	Naphthalene	0.92		0.92	J	(1)
DUP-54	Propene	12		12	J	(1)
	2-Propanol	67		67	J	(1)
	Chloromethane	0.96	U	0.96	UJ	(3)
	Ethyl acetate	1.9	U	1.9	UJ	(3)
	n-Nonane	0.96	U	0.96	UJ	(3)
	d-Limonene	7.0		7.0	J	(1)
	Naphthalene	0.63		0.63	J	(1)

Notes:
(1): Value is qualifed as estimated and flagged with a J qualifier based on a high relative percent difference (RPD) calculated between parent and field duplicate samples.
(2): Value is qualified as estimated and flagged with a J qualifier as the chemical was detected in the sample but nondetect in the laboratory duplicate. The result may be biased high.
(3): Nondetect value is qualified as estimated and flagged with a UJ qualifier as the chemical was not detected in the field duplicate but detected in the parent sample. The result may be biased low.

Appendix C

1,1,1-Trichloroethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,1,1-TCA\Data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C2	50	0.67	11	1.134	0.84	2.178	1.476	0.119	6.404	42.98	1.301

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C2	50	0.71	0.729	0.768	0.773	0.84	0.93	0.946	1.04	1.72	7.178

1,1,2-Trichloroethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,1,2-TCA\1,1,2-TCA.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.13	0.38	0.176	0.165	0.00184	0.0429	0.0222	3.089	11.54	0.244

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.14	0.149	0.15	0.15	0.165	0.188	0.19	0.2	0.25	0.341

1,1,2-Trichlorotrifluoroethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,1,2-TCTFA\1,1,2-TCTFA data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

1,1-Dichloroethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,1-DCA\1,1-DCA data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

1,1-Dichloroethene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,1-DCE\1,1-DCE data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.868	26.86	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.93	0.93	0.982	1.275	2.563

1,2,4-Trichlorobenzene

From File: 1,2,4-TCB.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

1,2,4-Trimethylbenzene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,2,4-TMB\1,2,4-TMB data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
1,2,4-TMB	50	0.67	17	2.233	1.05	8.952	2.992	0.467	3.331	12.59	1.34

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
1,2,4-TMB	50	0.719	0.767	0.828	0.863	1.05	1.875	2.14	4.91	8.665	13.57

1,2-Dibromoethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,2-DBA\1,2-DBA data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

1,2-Dichloroethane

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,2-DCA\1,2-DCA data.wst
Full Precision	OFF
Confidence Coefficient	0.95

C0

Raw Statistics

Number of Valid Observations	50
Number of Distinct Observations	36
Minimum	0.053
Maximum	2.1
Mean of Raw Data	0.374
Standard Deviation of Raw Data	0.446
Kstar	1.084
Mean of Log Transformed Data	-1.482
Standard Deviation of Log Transformed Data	0.966

Normal Distribution Test Results

Correlation Coefficient R	0.824
Shapiro Wilk Test Statistic	0.687
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	5.239E-13
Lilliefors Test Statistic	0.236
Lilliefors Critical (0.95) Value	0.125

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.97
A-D Test Statistic	1.955
A-D Critical (0.95) Value	0.776
K-S Test Statistic	0.186
K-S Critical(0.95) Value	0.129

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.974
Shapiro Wilk Test Statistic	0.931
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.00754
Lilliefors Test Statistic	0.146
Lilliefors Critical (0.95) Value	0.125

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,2-DCA\1,2-DCA data.wst

Summary Statistics for Raw Full Dataset

Variable		NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
	C0	50	0.053	2.1	0.374	0.17	0.199	0.446	0.134	2.458	6.662	1.192

Percentiles for Raw Full Dataset

Variable		NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
	C0	50	0.0675	0.0839	0.0942	0.11	0.17	0.478	0.572	0.82	1.155	2.051

Nonparametric Background Statistics for Full Data Sets

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,2-DCA\1,2-DCA data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Number of Bootstrap Operations	2000

C0

Some Non-Parametric Statistics

Number of Valid Observations	50
Number of Distinct Observations	36
Minimum	0.053
Maximum	2.1
Second Largest	2
Mean	0.374
Geometric Mean	0.227
First Quartile	0.11
Median	0.17
Third Quartile	0.478
SD	0.446
Variance	0.199
Coefficient of Variation	1.192
Skewness	2.458
Mean of Log-Transformed data	-1.482
SD of Log-Transformed data	0.966

Data do not follow a Discernable Distribution (0.05)

Non-Parametric Background Statistics

90% Percentile	0.82
95% Percentile	1.155
99% Percentile	2.051

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	0.23
95% BCA Bootstrap UTL with 50% Coverage	0.285
95% Percentile Bootstrap UTL with 50% Coverage	0.35
95% UPL	1.56
95% Chebyshev UPL	2.339
Upper Limit Based upon IQR	1.029

From File: C:\Documents and Settings\martichbj\Desktop\Data Stats\1,2-DCA\1,2-DCA data.wst

Summary Statistics for Raw Full Data Sets

Variable		NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
	AG	27	0.067	2.1	0.456	0.35	0.213	0.462	0.341	2.051	5.186	1.013
	DG	23	0.053	2	0.279	0.13	0.174	0.417	0.083	3.544	14.06	1.496

Percentiles for Raw Full Data Sets

Variable		NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
	AG	27	0.088	0.104	0.12	0.125	0.35	0.6	0.676	1.04	1.17	1.866
	DG	23	0.0554	0.0692	0.0862	0.0885	0.13	0.275	0.372	0.478	0.768	1.736

Lognormal Background Statistics for Full Data Sets

User Selected Options	
From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\1,2-DCA\1,2-DCA data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

AG

Log-Transformed Statistics

Number of Valid Observations	27
Number of Distinct Observations	23
Minimum	-2.703
Maximum	0.742
Second Largest	0.182
Mean	-1.212
First Quartile	-2.08
Median	-1.05
Third Quartile	-0.511
SD	0.943

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.949
5% Shapiro Wilk Critical Value	0.923

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

90% Percentile (z)	0.996
95% Percentile (z)	1.402
99% Percentile (z)	2.666
95% UPL	1.53
Tolerance Factor K	N/A
95% UTL with 50% Coverage	N/A

Some Nonparametric Background Statistics

95% Chebyshev UPL	2.506
95% Bootstrap BCA UTL with 50% Coverage	0.4
95% Percentile Bootstrap UTL with 50% Coverage	0.5

Nonparametric Background Statistics for Full Data Sets

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\1,2-DCA\1,2-DCA data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Number of Bootstrap Operations	2000

DG

Some Non-Parametric Statistics

Number of Valid Observations	23
Number of Distinct Observations	19
Minimum	0.053
Maximum	2
Second Largest	0.8
Mean	0.279
Geometric Mean	0.166
First Quartile	0.0885
Median	0.13
Third Quartile	0.275
SD	0.417
Variance	0.174
Coefficient of Variation	1.496
Skewness	3.544
Mean of Log-Transformed data	-1.798
SD of Log-Transformed data	0.914

Data do not follow a Discernable Distribution (0.05)

Non-Parametric Background Statistics

90% Percentile	0.478
95% Percentile	0.768
99% Percentile	1.736

95% UTL with 50% Coverage

Order Statistic	15
Achieved CC	0.953
UTL	0.17

95% BCA Bootstrap UTL with 50% Coverage	0.17
95% Percentile Bootstrap UTL with 50% Coverage	0.19

95% UPL	1.76
95% Chebyshev UPL	2.136

Upper Limit Based upon IQR	0.555

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\1,2-DCA\1,2-DCA data.wst
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)
Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median

Area of Concern Data: AG

Background Data: DG

Raw Statistics

	Site	Background
Number of Valid Observations	27	23
Number of Distinct Observations	23	19
Minimum	0.067	0.053
Maximum	2.1	2
Mean	0.456	0.279
Median	0.35	0.13
SD	0.462	0.417
SE of Mean	0.0889	0.087

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

Site Rank Sum W-Stat	805
WMW Test U-Stat	2.258
WMW Critical Value (0.050)	1.645
P-Value	0.012

Conclusion with Alpha = 0.05

Reject H0, Conclude Site > Background

P-Value < alpha (0.05)

1,2-Dichlorobenzene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,2-DCB\1,2-DCB data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

1,2-Dichloropropane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,2-DCP\1,2-DCP data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

1,3,5-Trimethylbenzene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,3,5-TMB\1,3,5-TMB data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	5.5	1.171	0.865	0.757	0.87	0.126	3.297	12.6	0.743

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.77	0.78	0.865	0.97	1.08	1.98	2.91	4.373

1,3-Butadiene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,3-Butadiene\1,3-butadiene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.92	0.835	0.147	0.383	0.126	4.848	26.73	0.417

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.835	0.93	0.932	0.991	1.275	2.563

1,3-Dichlorobenzene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,3-DCB\1,3-DCB data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

1,4-Dichlorobenzene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,4-DCB\1,4-DCB data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	36	2.143	0.835	37.62	6.133	0.126	4.982	24.45	2.862

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.835	0.93	0.946	1.05	2.615	31.59

1,4-Dioxane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\1,4-Dioxane\1,4-dioxane data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

2-Butanone

From File: 2-butanone.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	6.7	32	9.908	8.5	21.39	4.625	1.26	3.391	12.7	0.467

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	7.1	7.29	7.6	7.7	8.5	9.625	9.84	13.2	17.65	29.06

2-Hexanone

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\2-Hexanone\2-hexanone data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.933	0.84	0.15	0.388	0.119	4.636	24.85	0.416

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.725	0.739	0.768	0.77	0.84	0.93	0.932	0.982	1.455	2.563

2-Propanol

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\2-Propanol\2-propanol data.wst
Full Precision	OFF
Confidence Coefficient	0.95

C0

Raw Statistics

Number of Valid Observations	50
Number of Distinct Observations	43
Minimum	3.1
Maximum	170
Mean of Raw Data	35.94
Standard Deviation of Raw Data	33.66
Kstar	1.204
Mean of Log Transformed Data	3.137
Standard Deviation of Log Transformed Data	1.02

Normal Distribution Test Results

Correlation Coefficient R	0.909
Shapiro Wilk Test Statistic	0.833
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	2.6966E-7
Lilliefors Test Statistic	0.165
Lilliefors Critical (0.95) Value	0.125

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.996
A-D Test Statistic	0.304
A-D Critical (0.95) Value	0.773
K-S Test Statistic	0.0766
K-S Critical(0.95) Value	0.128

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.988
Shapiro Wilk Test Statistic	0.96
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.156
Lilliefors Test Statistic	0.089
Lilliefors Critical (0.95) Value	0.125

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\2-Propanol\2-propanol data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C0	50	3.1	170	35.94	27	1133	33.66	28.17	1.813	4.341	0.937

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	50	4.27	5.56	7.86	11.25	27	46	56.2	76.5	94.85	145.5

Lognormal Background Statistics for Full Data Sets

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\2-Propanol\2-propanol data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

C0

Log-Transformed Statistics

Number of Valid Observations	50
Number of Distinct Observations	43
Minimum	1.131
Maximum	5.136
Second Largest	4.787
Mean	3.137
First Quartile	2.42
Median	3.296
Third Quartile	3.829
SD	1.02

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.96
5% Shapiro Wilk Critical Value	0.947

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

90% Percentile (z)	85.19
95% Percentile (z)	123.4
99% Percentile (z)	247.4
95% UPL	129.7
Tolerance Factor K	0.236
95% UTL with 50% Coverage	29.32

Some Nonparametric Background Statistics

95% Chebyshev UPL	184.1
95% Bootstrap BCA UTL with 50% Coverage	36
95% Percentile Bootstrap UTL with 50% Coverage	39

4-Ethyltoluene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\4-Ethyltoluene\4-ethyltoluene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	5.4	1.163	0.865	0.737	0.858	0.133	3.262	12.25	0.738

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.77	0.78	0.865	0.97	1.04	1.97	2.91	4.322

4-Methyl-2-pentanone

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\4-M-2-P\4-M-2-P data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.3	1.113	0.875	0.368	0.607	0.156	2.301	4.978	0.545

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.724	0.749	0.778	0.783	0.875	1	1.16	2.1	2.255	3.251

Acetone

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Acetone\Acetone data.wst
Full Precision	OFF
Confidence Coefficient	0.95

C0

Raw Statistics

Number of Valid Observations	50
Number of Distinct Observations	40
Minimum	16
Maximum	130
Mean of Raw Data	51.58
Standard Deviation of Raw Data	26.84
Kstar	3.92
Mean of Log Transformed Data	3.818
Standard Deviation of Log Transformed Data	0.508

Normal Distribution Test Results

Correlation Coefficient R	0.954
Shapiro Wilk Test Statistic	0.902
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	3.1846E-4
Lilliefors Test Statistic	0.115
Lilliefors Critical (0.95) Value	0.125

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.992
A-D Test Statistic	0.214
A-D Critical (0.95) Value	0.754
K-S Test Statistic	0.0603
K-S Critical(0.95) Value	0.126

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.997
Shapiro Wilk Test Statistic	0.979
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.695
Lilliefors Test Statistic	0.0585
Lilliefors Critical (0.95) Value	0.125

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Acetone\Acetone data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C0	50	16	130	51.58	46	720.1	26.84	23.72	1.181	1.425	0.52

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	50	19.45	23.9	29	30.5	46	65	71.2	83.4	102.8	130

Lognormal Background Statistics for Full Data Sets

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Acetone\Acetone data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

C0

Log-Transformed Statistics

Number of Valid Observations	50
Number of Distinct Observations	40
Minimum	2.773
Maximum	4.868
Second Largest	4.868
Mean	3.818
First Quartile	3.417
Median	3.828
Third Quartile	4.174
SD	0.508

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.979
5% Shapiro Wilk Critical Value	0.947

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

90% Percentile (z)	87.27
95% Percentile (z)	105
99% Percentile (z)	148.4
95% UPL	107.6
Tolerance Factor K	0.236
95% UTL with 50% Coverage	51.31

Some Nonparametric Background Statistics

95% Chebyshev UPL	169.7
95% Bootstrap BCA UTL with 50% Coverage	53
95% Percentile Bootstrap UTL with 50% Coverage	53

Acetonitrile

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Acetonitrile\Acetonitrile data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.971	0.835	0.255	0.505	0.119	3.807	14.67	0.52

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.715	0.739	0.768	0.77	0.835	0.93	0.932	1	1.81	3.2

Acrolein

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Acrolein\Acrolein data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	2.7	13	3.894	3.5	2.902	1.703	0.593	3.861	17.48	0.437

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	2.845	2.9	3.08	3.1	3.5	3.9	4	4.8	6.835	10.8

Acrylonitrile

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Acrylonitrile\Acrylonitrile data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Allyl Chloride

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Allyl chloride\Allyl chloride data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

alpha-Pinene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\alpha-Pinene\alpha-Pinene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

Raw

Raw Statistics

Number of Valid Observations	48
Number of Missing Values	2
Number of Distinct Observations	34
Minimum	0.83
Maximum	52
Mean of Raw Data	6.765
Standard Deviation of Raw Data	9.23
Kstar	1.003
Mean of Log Transformed Data	1.368
Standard Deviation of Log Transformed Data	0.993

Normal Distribution Test Results

Correlation Coefficient R	0.77
Shapiro Wilk Test Statistic	0.618
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	1.399E-14
Lilliefors Test Statistic	0.3
Lilliefors Critical (0.95) Value	0.128

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.946
A-D Test Statistic	1.711
A-D Critical (0.95) Value	0.777
K-S Test Statistic	0.199
K-S Critical(0.95) Value	0.131

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.981
Shapiro Wilk Test Statistic	0.952
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.0802
Lilliefors Test Statistic	0.118
Lilliefors Critical (0.95) Value	0.128

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\alpha-Pinene\alpha-Pinene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
LnROS_Pinene	50	0.429	52	6.535	3.75	83.02	9.112	3.089	3.284	12.92	1.394

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
LnROS_Pinene	50	0.985	1.1	1.5	1.65	3.75	5.5	9.48	13.1	24.65	41.22

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\alpha-Pinene\alpha-Pinene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

Pinene

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	2
Number of Detected Data	48
Minimum Detected	-0.186
Maximum Detected	3.951
Percent Non-Detects	4.00%
Minimum Non-detect	-0.0943
Maximum Non-detect	1.163
Mean of Detected data	1.368
SD of Detected data	0.993

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.952
5% Shapiro Wilk Critical Value	0.947

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	1.307
SD (Log Scale)	1.026
Tolerance Factor K	0.236
95% UTL 50% Coverage	4.706
95% UPL	20.99
90% Percentile (z)	13.76
95% Percentile (z)	19.98
99% Percentile (z)	40.2

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	1.306
SD in Log Scale	1.028
Mean in Orignal Scale	6.535
SD in Original Scale	9.112
95% UTL 50% Coverage	4.705
95% BCA UTL with 50% Coverage	4.9
95% Bootstrap (%) UTL with 50% Coverage	4.95
95% UPL (t)	21.06
90% Percentile (z)	13.79

95% Percentile (z)	20.03
99% Percentile (z)	40.37

Kaplan Meier (KM) Method

Mean	6.543
SD	9.015
SE of Mean	1.289
95% UTL 50% Coverage	8.669
95% KM Chebyshev UPL	46.23
95% KM UPL (t)	21.81
95% KM Percentile (z)	21.37

Bromodichloromethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\BDCM\BDCM data.wsf

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.95	0.84	0.179	0.423	0.119	3.989	17.75	0.445

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.768	0.77	0.84	0.93	0.946	1	1.72	2.71

Benzene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Benzene\Benzene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

Raw

Raw Statistics

Number of Valid Observations	49
Number of Missing Values	1
Number of Distinct Observations	36
Minimum	0.35
Maximum	20
Mean of Raw Data	2.785
Standard Deviation of Raw Data	4.24
Kstar	0.78
Mean of Log Transformed Data	0.299
Standard Deviation of Log Transformed Data	1.105

Normal Distribution Test Results

Correlation Coefficient R	0.773
Shapiro Wilk Test Statistic	0.609
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	2.998E-15
Lilliefors Test Statistic	0.317
Lilliefors Critical (0.95) Value	0.127

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.965
A-D Test Statistic	3.66
A-D Critical (0.95) Value	0.789
K-S Test Statistic	0.212
K-S Critical(0.95) Value	0.131

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.947
Shapiro Wilk Test Statistic	0.88
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	4.0091E-5
Lilliefors Test Statistic	0.146
Lilliefors Critical (0.95) Value	0.127

Data not Lognormal at (0.05) Significance Level

From File: C:\Documents and Settings\martichbj\Desktop\Data Stats\Benzene\Benzene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Benzene	50	0.14	20	2.732	0.895	17.75	4.213	0.645	2.551	6.457	1.542

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Benzene	50	0.38	0.46	0.508	0.52	0.895	2.5	3.28	8.36	12.1	17.55

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Benzene\Benzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

Benzene

Total Number of Data	50
Number of Non-Detect Data	1
Number of Detected Data	49
Minimum Detected	0.35
Maximum Detected	20
Percent Non-Detects	2.00%
Minimum Non-detect	0.14
Maximum Non-detect	0.14
Mean of Detected Data	2.785
SD of Detected Data	4.24
Mean of Log-Transformed Detected Data	0.299
SD of Log-Transformed Detected Data	1.105

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	1.3
Largest Non-detect at Order	1

95% UPL

95% UPL	13.9

Kaplan-Meier (KM) Method

Mean	2.736
SD	4.168
Standard Error of Mean	0.596
95% UTL 50% Coverage	3.72
95% KM Chebyshev UPL	21.09
95% KM UPL (t)	9.794
90% KM Percentile (z)	8.078
95% KM Percentile (z)	9.593
99% KM Percentile (z)	12.43

From File: C:\Documents and Settings\martichbj\Desktop\Data Stats\Benzene\Benzene data.wst

Summary Statistics for Raw Full Data Sets

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
AG	27	0.46	20	4.513	1.9	26.22	5.12	1.779	1.673	2.233	1.135
DG	23	0.14	1.4	0.642	0.52	0.0967	0.311	0.208	1.274	1.601	0.484

Percentiles for Raw Full Data Sets

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
AG	27	0.546	0.778	0.956	1.1	1.9	5.95	8.02	11.8	14.4	18.7
DG	23	0.353	0.38	0.464	0.475	0.52	0.745	0.79	1.054	1.37	1.4

Nonparametric Background Statistics for Full Data Sets

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Benzene\Benzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Number of Bootstrap Operations	2000

AG

Some Non-Parametric Statistics

Number of Valid Observations	27
Number of Distinct Observations	23
Minimum	0.46
Maximum	20
Second Largest	15
Mean	4.513
Geometric Mean	2.559
First Quartile	1.1
Median	1.9
Third Quartile	5.95
SD	5.12
Variance	26.22
Coefficient of Variation	1.135
Skewness	1.673
Mean of Log-Transformed data	0.94
SD of Log-Transformed data	1.088

Data appear Lognormal at 5% Significance Level

Non-Parametric Background Statistics

90% Percentile	11.8
95% Percentile	14.4
99% Percentile	18.7

95% UTL with 50% Coverage

Order Statistic	17
Achieved CC	0.939
UTL	3.1

95% BCA Bootstrap UTL with 50% Coverage	3.1
95% Percentile Bootstrap UTL with 50% Coverage	4

95% UPL	18
95% Chebyshev UPL	27.24

Upper Limit Based upon IQR	13.23

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Benzene\Benzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

DG

Total Number of Data	23
Number of Non-Detect Data	1
Number of Detected Data	22
Minimum Detected	0.35
Maximum Detected	1.4
Percent Non-Detects	4.35%
Minimum Non-detect	0.14
Maximum Non-detect	0.14
Mean of Detected Data	0.665
SD of Detected Data	0.298
Mean of Log-Transformed Detected Data	-0.487
SD of Log-Transformed Detected Data	0.389

Data appear Lognormal at 5% Significance Level

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	15
Achieved CC	0.953
UTL	0.64
Largest Non-detect at Order	1

95% UPL

95% UPL	1.4

Kaplan-Meier (KM) Method

Mean	0.651
SD	0.292
Standard Error of Mean	0.0623
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	1.951
95% KM UPL (t)	1.163
90% KM Percentile (z)	1.025
95% KM Percentile (z)	1.131
99% KM Percentile (z)	1.33

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Benzene\Benzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

DG

Total Number of Data	23
Number of Non-Detect Data	1
Number of Detected Data	22
Minimum Detected	0.35
Maximum Detected	1.4
Percent Non-Detects	4.35%
Minimum Non-detect	0.14
Maximum Non-detect	0.14
Mean of Detected Data	0.665
SD of Detected Data	0.298
Mean of Log-Transformed Detected Data	-0.487
SD of Log-Transformed Detected Data	0.389

Data appear Lognormal at 5% Significance Level

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	15
Achieved CC	0.953
UTL	0.64
Largest Non-detect at Order	1

95% UPL

95% UPL	1.4

Kaplan-Meier (KM) Method

Mean	0.651
SD	0.292
Standard Error of Mean	0.0623
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	1.951
95% KM UPL (t)	1.163
90% KM Percentile (z)	1.025
95% KM Percentile (z)	1.131
99% KM Percentile (z)	1.33

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Benzene\Benzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)
Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median

Area of Concern Data: AG

Background Data: DG

Raw Statistics

	Site	Background
Number of Valid Observations	27	23
Number of Distinct Observations	23	18
Minimum	0.46	0.14
Maximum	20	1.4
Mean	4.513	0.642
Median	1.9	0.52
SD	5.12	0.311
SE of Mean	0.985	0.0648

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

Site Rank Sum W-Stat	938.5
WMW Test U-Stat	4.857
WMW Critical Value (0.050)	1.645
P-Value	5.9716E-7

Conclusion with Alpha = 0.05

Reject H0, Conclude Site > Background

P-Value < alpha (0.05)

Benzyl Chloride

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Benzyl chloride\Benzyl chloride data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Bromoform

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Bromoform\Bromoform data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Bromomethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Bromomethane\Bromomethane data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

C5 - C8 Aliphatics

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C5-C8 Aliphatics\C5-C8 Aliphatics data.'
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	45
Number of Missing Values	5
Number of Distinct Observations	33
Minimum	31
Maximum	500
Mean of Raw Data	131.1
Standard Deviation of Raw Data	119.1
Kstar	1.673
Mean of Log Transformed Data	4.569
Standard Deviation of Log Transformed Data	0.759

Normal Distribution Test Results

Correlation Coefficient R	0.863
Shapiro Wilk Test Statistic	0.741
Shapiro Wilk Critical (0.95) Value	0.945
Approximate Shapiro Wilk P Value	9.436E-10
Lilliefors Test Statistic	0.226
Lilliefors Critical (0.95) Value	0.132

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.964
A-D Test Statistic	1.462
A-D Critical (0.95) Value	0.764
K-S Test Statistic	0.149
K-S Critical(0.95) Value	0.134

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.978
Shapiro Wilk Test Statistic	0.937
Shapiro Wilk Critical (0.95) Value	0.945
Approximate Shapiro Wilk P Value	0.0238
Lilliefors Test Statistic	0.105
Lilliefors Critical (0.95) Value	0.132

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C5-C8 Aliphatics\C5-C8 Aliphatics data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	31	500	123.3	81	13435	115.9	59.3	1.973	3.43	0.94

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	33	34.9	41	46	81	160	182	224	414	480.4

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C5-C8 Aliphatics\C5-C8 Aliphatics data.'
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

C5-C8

Total Number of Data	50
Number of Non-Detect Data	5
Number of Detected Data	45
Minimum Detected	31
Maximum Detected	500
Percent Non-Detects	10.00%
Minimum Non-detect	33
Maximum Non-detect	130
Mean of Detected Data	131.1
SD of Detected Data	119.1
Mean of Log-Transformed Detected Data	4.569
SD of Log-Transformed Detected Data	0.759

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	94
Warning: Largest Non-detect at Order	36

95% UPL

95% UPL	454.5

Kaplan-Meier (KM) Method

Mean	121.8
SD	115.3
Standard Error of Mean	16.49
95% UTL 50% Coverage	149
95% KM Chebyshev UPL	629.2
95% KM UPL (t)	317
90% KM Percentile (z)	269.5
95% KM Percentile (z)	311.4
99% KM Percentile (z)	389.9

From File: C:\Documents and Settings\martichbj\Desktop\Data Stats\C5-C8 Aliphatics\C5-C8 Aliphatics data.wst

Summary Statistics for Raw Full Data Sets

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
AG	27	34	500	163.9	110	19335	139.1	88.95	1.374	0.722	0.849
DG	23	31	200	75.74	50	2690	51.86	26.69	1.265	0.508	0.685

Percentiles for Raw Full Data Sets

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
AG	27	42.5	46.6	62.6	76	110	200	208	402	457	489.6
DG	23	32.1	33	35	37	50	93.5	116.8	162	179	195.6

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\C5-C8 Aliphatics\C5-C8 Aliphatics data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

AG

Total Number of Data	27
Number of Non-Detect Data	1
Number of Detected Data	26
Minimum Detected	41
Maximum Detected	500
Percent Non-Detects	3.70%
Minimum Non-detect	34
Maximum Non-detect	34
Mean of Detected Data	168.8
SD of Detected Data	139.3
Mean of Log-Transformed Detected Data	4.845
SD of Log-Transformed Detected Data	0.75

Data appear Lognormal at 5% Significance Level

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	17
Achieved CC	0.939
UTL	120
Largest Non-detect at Order	1

95% UPL

95% UPL	484

Kaplan-Meier (KM) Method

Mean	164.1
SD	136.2
Standard Error of Mean	26.73
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	768.7
95% KM UPL (t)	400.7
90% KM Percentile (z)	338.7
95% KM Percentile (z)	388.2
99% KM Percentile (z)	481

DG

Total Number of Data	23
Number of Non-Detect Data	4
Number of Detected Data	19
Minimum Detected	31
Maximum Detected	200
Percent Non-Detects	17.39%
Minimum Non-detect	33
Maximum Non-detect	130
Mean of Detected Data	79.42
SD of Detected Data	53.14
Mean of Log-Transformed Detected Data	4.191
SD of Log-Transformed Detected Data	0.604

Data Follow Appr. Gamma Distribution at 5% Significance Level

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	15
Achieved CC	0.953
UTL	71
Warning: Largest Non-detect at Order	19

95% UPL

95% UPL	196

Kaplan-Meier (KM) Method

Mean	71.98
SD	50.05
Standard Error of Mean	10.77
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	294.8
95% KM UPL (t)	159.8
90% KM Percentile (z)	136.1
95% KM Percentile (z)	154.3
99% KM Percentile (z)	188.4

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Data Sets with Non-Detects

User Selected Options	
From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\C5-C8 Aliphatics\C5-C8 Aliphatics data.wst
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference (S)	0.000
Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)
Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median

Area of Concern Data: AG

Background Data: DG

Raw Statistics

	Site	Background
Number of Valid Data	27	23
Number of Non-Detect Data	1	4
Number of Detect Data	26	19
Minimum Non-Detect	34	33
Maximum Non-Detect	34	130
Percent Non detects	3.70%	17.39%
Minimum Detected	41	31
Maximum Detected	500	200
Mean of Detected Data	168.8	79.42
Median of Detected Data	110	66
SD of Detected Data	139.3	53.14

Wilcoxon-Mann-Whitney Site vs Background Test

All observations <= 130 (Max DL) are ranked the same

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

Site Rank Sum W-Stat	773.5
WMW Test U-Stat	1.645
WMW Critical Value (0.050)	1.645
P-Value	0.05

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Site <= Background

P-Value >= alpha (0.05)

C9 – C10 Aromatics

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C9-C10 Aromatics\C9-C10 Aromatics da
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	20
Number of Missing Values	30
Number of Distinct Observations	14
Minimum	8.6
Maximum	70
Mean of Raw Data	19.9
Standard Deviation of Raw Data	16.36
Kstar	2.004
Mean of Log Transformed Data	2.76
Standard Deviation of Log Transformed Data	0.647

Normal Distribution Test Results

Correlation Coefficient R	0.847
Shapiro Wilk Test Statistic	0.725
Shapiro Wilk Critical (0.95) Value	0.905
Approximate Shapiro Wilk P Value	2.9039E-5
Lilliefors Test Statistic	0.268
Lilliefors Critical (0.95) Value	0.198

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.958
A-D Test Statistic	1.431
A-D Critical (0.95) Value	0.751
K-S Test Statistic	0.247
K-S Critical(0.95) Value	0.196

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.93
Shapiro Wilk Test Statistic	0.854
Shapiro Wilk Critical (0.95) Value	0.905
Approximate Shapiro Wilk P Value	0.00591
Lilliefors Test Statistic	0.218
Lilliefors Critical (0.95) Value	0.198

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C9-C10 Aromatics\C9-C10 Aromatics data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C9-C10	50	6.7	70	13.84	9.2	142.6	11.94	2.001	3.055	10.46	0.863

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C9-C10	50	7.19	7.67	8.14	8.4	9.2	12	15	23.9	37.85	58.73

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C9-C10 Aromatics\C9-C10 Aromatics da
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

C9-C10

Total Number of Data	50
Number of Non-Detect Data	30
Number of Detected Data	20
Minimum Detected	8.6
Maximum Detected	70
Percent Non-Detects	60.00%
Minimum Non-detect	6.7
Maximum Non-detect	32
Mean of Detected Data	19.9
SD of Detected Data	16.36
Mean of Log-Transformed Detected Data	2.76
SD of Log-Transformed Detected Data	0.647

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	9.5
Warning: Largest Non-detect at Order	46

95% UPL

95% UPL	43.7

Kaplan-Meier (KM) Method

Mean	13.18
SD	11.5
Standard Error of Mean	1.67
95% UTL 50% Coverage	15.89
95% KM Chebyshev UPL	63.79
95% KM UPL (t)	32.65
90% KM Percentile (z)	27.91
95% KM Percentile (z)	32.09
99% KM Percentile (z)	39.93

C9 – C12 Aliphatics

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C9-C12 Aliphatics\C9-C12 Aliphatics.ws
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	42
Number of Missing Values	8
Number of Distinct Observations	33
Minimum	17
Maximum	850
Mean of Raw Data	87.86
Standard Deviation of Raw Data	151.6
Kstar	1.014
Mean of Log Transformed Data	3.943
Standard Deviation of Log Transformed Data	0.867

Normal Distribution Test Results

Correlation Coefficient R	0.644
Shapiro Wilk Test Statistic	0.436
Shapiro Wilk Critical (0.95) Value	0.942
Approximate Shapiro Wilk P Value	2.220E-16
Lilliefors Test Statistic	0.373
Lilliefors Critical (0.95) Value	0.137

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.848
A-D Test Statistic	3.232
A-D Critical (0.95) Value	0.776
K-S Test Statistic	0.228
K-S Critical(0.95) Value	0.14

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.939
Shapiro Wilk Test Statistic	0.843
Shapiro Wilk Critical (0.95) Value	0.942
Approximate Shapiro Wilk P Value	2.7374E-4
Lilliefors Test Statistic	0.127
Lilliefors Critical (0.95) Value	0.137

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C9-C12 Aliphatics\C9-C12 Aliphatics.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C9-C12	50	14	850	76.58	33	19910	141.1	23.72	4.518	21.71	1.843

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C9-C12	50	15.45	16.9	21	22.25	33	72.75	83	100	195.5	722.6

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\C9-C12 Aliphatics\C9-C12 Aliphatics.ws
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

C9-C12

Total Number of Data	50
Number of Non-Detect Data	8
Number of Detected Data	42
Minimum Detected	17
Maximum Detected	850
Percent Non-Detects	16.00%
Minimum Non-detect	14
Maximum Non-detect	29
Mean of Detected Data	87.86
SD of Detected Data	151.6
Mean of Log-Transformed Detected Data	3.943
SD of Log-Transformed Detected Data	0.867

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	44
Largest Non-detect at Order	20

95% UPL

95% UPL	375.5

Kaplan-Meier (KM) Method

Mean	76.59
SD	139.7
Standard Error of Mean	19.99
95% UTL 50% Coverage	109.5
95% KM Chebyshev UPL	691.4
95% KM UPL (t)	313.1
90% KM Percentile (z)	255.6
95% KM Percentile (z)	306.3
99% KM Percentile (z)	401.5

From File: C:\Documents and Settings\martichbj\Desktop\Data Stats\C9-C12 Aliphatics\C9-C12 Aliphatics.wst

Summary Statistics for Raw Full Data Sets

Variable		NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
	AG	27	14	590	68.96	39	12374	111.2	31.13	4.294	20.06	1.613
	DG	23	15	850	85.57	32	29560	171.9	22.24	4.355	19.91	2.009

Percentiles for Raw Full Data Sets

Variable		NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
	AG	27	16.3	17	21	22	39	68	73	94.6	170	488.6
	DG	23	15.2	17	21.4	24	32	86.5	97	100	181	704.8

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\C9-C12 Aliphatics\C9-C12 Aliphatics.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

AG

Total Number of Data	27
Number of Non-Detect Data	4
Number of Detected Data	23
Minimum Detected	18
Maximum Detected	590
Percent Non-Detects	14.81%
Minimum Non-detect	14
Maximum Non-detect	17
Mean of Detected Data	78.17
SD of Detected Data	118.4
Mean of Log-Transformed Detected Data	3.919
SD of Log-Transformed Detected Data	0.812

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	17
Achieved CC	0.939
UTL	56
Largest Non-detect at Order	4

95% UPL

95% UPL	434

Kaplan-Meier (KM) Method

Mean	69.26
SD	109
Standard Error of Mean	21.45
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	553.2
95% KM UPL (t)	258.6
90% KM Percentile (z)	209
95% KM Percentile (z)	248.6
99% KM Percentile (z)	322.9

DG

Total Number of Data	23
Number of Non-Detect Data	4
Number of Detected Data	19
Minimum Detected	17
Maximum Detected	850
Percent Non-Detects	17.39%
Minimum Non-detect	15
Maximum Non-detect	29
Mean of Detected Data	99.58
SD of Detected Data	186.9
Mean of Log-Transformed Detected Data	3.972
SD of Log-Transformed Detected Data	0.952

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	15
Achieved CC	0.953
UTL	43
Largest Non-detect at Order	10

95% UPL

95% UPL	718

Kaplan-Meier (KM) Method

Mean	85.4
SD	168.2
Standard Error of Mean	36.03
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	834.3
95% KM UPL (t)	380.4
90% KM Percentile (z)	301
95% KM Percentile (z)	362.1
99% KM Percentile (z)	476.7

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Data Sets with Non-Detects

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\C9-C12 Aliphatics\C9-C12 Aliphatics.wst
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference (S)	0.000
Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)
Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median

Area of Concern Data: AG

Background Data: DG

Raw Statistics

	Site	Background
Number of Valid Data	27	23
Number of Non-Detect Data	4	4
Number of Detect Data	23	19
Minimum Non-Detect	14	15
Maximum Non-Detect	17	29
Percent Non detects	14.81%	17.39%
Minimum Detected	18	17
Maximum Detected	590	850
Mean of Detected Data	78.17	99.58
Median of Detected Data	46	39
SD of Detected Data	118.4	186.9

Wilcoxon-Mann-Whitney Site vs Background Test

All observations <= 29 (Max DL) are ranked the same

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

Site Rank Sum W-Stat	683.5
WMW Test U-Stat	-0.107
WMW Critical Value (0.050)	1.645
P-Value	0.543

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Site <= Background

P-Value >= alpha (0.05)

Carbon Disulfide

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Carbon disulfide\Carbon disulfide data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	6.7	32	9.168	8.25	14.72	3.837	1.26	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	7.1	7.29	7.6	7.7	8.25	9.275	9.3	9.82	12.75	25.63

Carbon Tetrachloride

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Carbon tetrachloride\Carbon Tetrachloride data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.939	0.85	0.152	0.39	0.119	4.541	23.99	0.415

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.715	0.739	0.768	0.773	0.85	0.93	0.946	1	1.5	2.563

cis-1,2-Dichloroethene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\cDCE\cDCE data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

cis-1,3-Dichloropropene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\cDCP\cDCP data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Trichlorofluoromethane (CFC 11)

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\CFC 11\CFC11 data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	45
Number of Missing Values	5
Number of Distinct Observations	18
Minimum	0.84
Maximum	5.3
Mean of Raw Data	1.583
Standard Deviation of Raw Data	0.916
Kstar	4.549
Mean of Log Transformed Data	0.353
Standard Deviation of Log Transformed Data	0.423

Normal Distribution Test Results

Correlation Coefficient R	0.808
Shapiro Wilk Test Statistic	0.668
Shapiro Wilk Critical (0.95) Value	0.945
Approximate Shapiro Wilk P Value	4.770E-12
Lilliefors Test Statistic	0.288
Lilliefors Critical (0.95) Value	0.132

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.902
A-D Test Statistic	4.251
A-D Critical (0.95) Value	0.753
K-S Test Statistic	0.272
K-S Critical(0.95) Value	0.132

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.896
Shapiro Wilk Test Statistic	0.804
Shapiro Wilk Critical (0.95) Value	0.945
Approximate Shapiro Wilk P Value	1.2809E-7
Lilliefors Test Statistic	0.251
Lilliefors Critical (0.95) Value	0.132

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\CFC 11\CFC11 data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
CFC11	50	0.84	5.3	1.596	1.2	0.823	0.907	0.222	2.309	5.632	0.568

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
CFC11	50	0.989	1	1.1	1.1	1.2	1.775	1.92	2.66	3.6	4.614

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\CFC 11\CFC11 data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

CFC11

Total Number of Data	50
Number of Non-Detect Data	5
Number of Detected Data	45
Minimum Detected	0.84
Maximum Detected	5.3
Percent Non-Detects	10.00%
Minimum Non-detect	0.98
Maximum Non-detect	3.2
Mean of Detected Data	1.583
SD of Detected Data	0.916
Mean of Log-Transformed Detected Data	0.353
SD of Log-Transformed Detected Data	0.423

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	1.3
Warning: Largest Non-detect at Order	46

95% UPL

95% UPL	3.735

Kaplan-Meier (KM) Method

Mean	1.531
SD	0.878
Standard Error of Mean	0.126
95% UTL 50% Coverage	1.738
95% KM Chebyshev UPL	5.395
95% KM UPL (t)	3.017
90% KM Percentile (z)	2.656
95% KM Percentile (z)	2.975
99% KM Percentile (z)	3.573

1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\CFC 114\CFC-114 data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Dichlorodifluoromethane (CFC 12)

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\CFC 12\CFC12 data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	49
Number of Missing Values	1
Number of Distinct Observations	10
Minimum	1.4
Maximum	2.7
Mean of Raw Data	2.008
Standard Deviation of Raw Data	0.213
Kstar	84.12
Mean of Log Transformed Data	0.692
Standard Deviation of Log Transformed Data	0.108

Normal Distribution Test Results

Correlation Coefficient R	0.952
Shapiro Wilk Test Statistic	0.931
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.00854
Lilliefors Test Statistic	0.17
Lilliefors Critical (0.95) Value	0.127

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.953
A-D Test Statistic	1.517
A-D Critical (0.95) Value	0.748
K-S Test Statistic	0.168
K-S Critical(0.95) Value	0.126

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.951
Shapiro Wilk Test Statistic	0.929
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.00693
Lilliefors Test Statistic	0.17
Lilliefors Critical (0.95) Value	0.127

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\CFC 12\CFC12 data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
raw	49	1.4	2.7	2.008	2	0.0453	0.213	0.148	0.186	2.468	0.106

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
raw	49	1.7	1.8	1.8	1.9	2	2.1	2.1	2.2	2.2	2.604

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\CFC 12\CFC12 data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

CFC12

Total Number of Data	50
Number of Non-Detect Data	1
Number of Detected Data	49
Minimum Detected	1.4
Maximum Detected	2.7
Percent Non-Detects	2.00%
Minimum Non-detect	3.2
Maximum Non-detect	3.2
Mean of Detected Data	2.008
SD of Detected Data	0.213
Mean of Log-Transformed Detected Data	0.692
SD of Log-Transformed Detected Data	0.108

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	2.1
Warning: Largest Non-detect at Order	50

95% UPL

95% UPL	2.59

Kaplan-Meier (KM) Method

Mean	2.008
SD	0.211
Standard Error of Mean	0.0304
95% UTL 50% Coverage	2.058
95% KM Chebyshev UPL	2.936
95% KM UPL (t)	2.365
90% KM Percentile (z)	2.278
95% KM Percentile (z)	2.355
99% KM Percentile (z)	2.498

Chlorobenzene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Chlorobenzene\Chlorobenzene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Chloroethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Chloroethane\Chloroethane data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Chloroform

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Chloroform\Chloroform data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	18
Number of Missing Values	32
Number of Distinct Observations	14
Minimum	1.1
Maximum	5.2
Mean of Raw Data	2.406
Standard Deviation of Raw Data	1.252
Kstar	3.885
Mean of Log Transformed Data	0.766
Standard Deviation of Log Transformed Data	0.476

Normal Distribution Test Results

Correlation Coefficient R	0.926
Shapiro Wilk Test Statistic	0.85
Shapiro Wilk Critical (0.95) Value	0.897
Approximate Shapiro Wilk P Value	0.00785
Lilliefors Test Statistic	0.208
Lilliefors Critical (0.95) Value	0.209

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.971
A-D Test Statistic	0.498
A-D Critical (0.95) Value	0.743
K-S Test Statistic	0.162
K-S Critical(0.95) Value	0.204

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.978
Shapiro Wilk Test Statistic	0.943
Shapiro Wilk Critical (0.95) Value	0.897
Approximate Shapiro Wilk P Value	0.37
Lilliefors Test Statistic	0.131
Lilliefors Critical (0.95) Value	0.209

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Chloroform\Chloroform data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
CFM	50	0.67	5.2	1.428	0.93	1.12	1.058	0.237	2.253	5.062	0.741

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
CFM	50	0.715	0.767	0.78	0.815	0.93	1.725	2.02	2.73	3.55	5.151

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Chloroform\Chloroform data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

CFM

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	32
Number of Detected Data	18
Minimum Detected	0.0953
Maximum Detected	1.649
Percent Non-Detects	64.00%
Minimum Non-detect	-0.4
Maximum Non-detect	0.642
Mean of Detected data	0.766
SD of Detected data	0.476

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.943
5% Shapiro Wilk Critical Value	0.897

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	-0.263
SD (Log Scale)	0.841
Tolerance Factor K	0.236
95% UTL 50% Coverage	0.937
95% UPL	3.191
90% Percentile (z)	2.257
95% Percentile (z)	3.064
99% Percentile (z)	5.434

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	-0.154
SD in Log Scale	0.78
Mean in Orignal Scale	1.204
SD in Original Scale	1.176
95% UTL 50% Coverage	1.03
95% BCA UTL with 50% Coverage	0.77
95% Bootstrap (%) UTL with 50% Coverage	0.77
95% UPL (t)	3.212
90% Percentile (z)	2.33

95% Percentile (z)	3.093
99% Percentile (z)	5.265

Kaplan Meier (KM) Method

Mean	1.571
SD	0.962
SE of Mean	0.14
95% UTL 50% Coverage	1.798
95% KM Chebyshev UPL	5.805
95% KM UPL (t)	3.2
95% KM Percentile (z)	3.153

Chloromethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Chloromethane\Chloromethane data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.923	0.835	0.146	0.383	0.119	4.865	26.87	0.415

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.715	0.739	0.768	0.77	0.835	0.93	0.932	1	1.275	2.563

Cumene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Cumene\Cumene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Cyclohexane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Cyclohexane\Cyclohexane data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	1.3	6.8	2.236	1.8	1.528	1.236	0.297	2.514	6.083	0.553

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	1.4	1.49	1.58	1.6	1.8	2.225	2.44	3.81	5.055	6.555

Dibromochloromethane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\DBCM\DBCM data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.928	0.835	0.15	0.387	0.119	4.691	25.39	0.417

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.768	0.77	0.835	0.93	0.932	1	1.41	2.563

1,2-Dibromo-3-chloropropane

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\DBCP\DBCP data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

d-Limonene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\d-Limonene\d-Limonene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

C0

Raw Statistics

Number of Valid Observations	50
Number of Distinct Observations	33
Minimum	3.2
Maximum	230
Mean of Raw Data	28.97
Standard Deviation of Raw Data	40.7
Kstar	1.147
Mean of Log Transformed Data	2.897
Standard Deviation of Log Transformed Data	0.891

Normal Distribution Test Results

Correlation Coefficient R	0.72
Shapiro Wilk Test Statistic	0.545
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.27
Lilliefors Critical (0.95) Value	0.125

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.9
A-D Test Statistic	2.296
A-D Critical (0.95) Value	0.775
K-S Test Statistic	0.176
K-S Critical(0.95) Value	0.128

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.977
Shapiro Wilk Test Statistic	0.954
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.0897
Lilliefors Test Statistic	0.116
Lilliefors Critical (0.95) Value	0.125

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\d-Limonene\d-Limonene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C0	50	3.2	230	28.97	16	1656	40.7	10.38	3.645	14.5	1.405

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	50	4.23	7.15	10.8	11	16	27.5	34	46.4	94.8	200.6

Lognormal Background Statistics for Full Data Sets

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\d-Limonene\d-Limonene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

C0

Log-Transformed Statistics

Number of Valid Observations	50
Number of Distinct Observations	33
Minimum	1.163
Maximum	5.438
Second Largest	5.136
Mean	2.897
First Quartile	2.398
Median	2.773
Third Quartile	3.314
SD	0.891

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.954
5% Shapiro Wilk Critical Value	0.947

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

90% Percentile (z)	56.8
95% Percentile (z)	78.52
99% Percentile (z)	144.1
95% UPL	81.98
Tolerance Factor K	0.236
95% UTL with 50% Coverage	22.37

Some Nonparametric Background Statistics

95% Chebyshev UPL	208.1
95% Bootstrap BCA UTL with 50% Coverage	21
95% Percentile Bootstrap UTL with 50% Coverage	22.5

Ethanol

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethanol\Ethanol data.wst
Full Precision	OFF
Confidence Coefficient	0.95

C0

Raw Statistics

Number of Valid Observations	50
Number of Distinct Observations	40
Minimum	69
Maximum	5900
Mean of Raw Data	986.3
Standard Deviation of Raw Data	1078
Kstar	1.092
Mean of Log Transformed Data	6.399
Standard Deviation of Log Transformed Data	1.046

Normal Distribution Test Results

Correlation Coefficient R	0.855
Shapiro Wilk Test Statistic	0.75
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	1.096E-10
Lilliefors Test Statistic	0.197
Lilliefors Critical (0.95) Value	0.125

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.982
A-D Test Statistic	0.406
A-D Critical (0.95) Value	0.776
K-S Test Statistic	0.0889
K-S Critical(0.95) Value	0.129

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.994
Shapiro Wilk Test Statistic	0.977
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.638
Lilliefors Test Statistic	0.0737
Lilliefors Critical (0.95) Value	0.125

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethanol\Ethanol data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C0	50	69	5900	986.3	625	1161081	1078	659.7	2.532	8.44	1.093

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C0	50	120	130	198	287.5	625	1375	1420	2020	2930	4822

Lognormal Background Statistics for Full Data Sets

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethanol\Ethanol data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

C0

Log-Transformed Statistics

Number of Valid Observations	50
Number of Distinct Observations	40
Minimum	4.234
Maximum	8.683
Second Largest	8.216
Mean	6.399
First Quartile	5.66
Median	6.437
Third Quartile	7.226
SD	1.046

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.977
5% Shapiro Wilk Critical Value	0.947

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

90% Percentile (z)	2296
95% Percentile (z)	3356
99% Percentile (z)	6844
95% UPL	3530
Tolerance Factor K	0.236
95% UTL with 50% Coverage	769.2

Some Nonparametric Background Statistics

95% Chebyshev UPL	5730
95% Bootstrap BCA UTL with 50% Coverage	780
95% Percentile Bootstrap UTL with 50% Coverage	860

Ethyl Acetate

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethyl Acetate\Ehtyl acetate data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	45
Number of Missing Values	5
Number of Distinct Observations	33
Minimum	1.6
Maximum	40
Mean of Raw Data	11.43
Standard Deviation of Raw Data	9.902
Kstar	1.477
Mean of Log Transformed Data	2.084
Standard Deviation of Log Transformed Data	0.86

Normal Distribution Test Results

Correlation Coefficient R	0.914
Shapiro Wilk Test Statistic	0.826
Shapiro Wilk Critical (0.95) Value	0.945
Approximate Shapiro Wilk P Value	8.5417E-7
Lilliefors Test Statistic	0.18
Lilliefors Critical (0.95) Value	0.132

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.987
A-D Test Statistic	0.929
A-D Critical (0.95) Value	0.767
K-S Test Statistic	0.138
K-S Critical(0.95) Value	0.134

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.986
Shapiro Wilk Test Statistic	0.953
Shapiro Wilk Critical (0.95) Value	0.945
Approximate Shapiro Wilk P Value	0.11
Lilliefors Test Statistic	0.12
Lilliefors Critical (0.95) Value	0.132

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethyl Acetate\Ehtyl acetate data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
EA	50	1.6	40	10.59	6.3	94.73	9.733	6.153	1.47	1.559	0.919

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
EA	50	1.8	2.27	3.5	3.725	6.3	14.5	16	25	31.3	38.53

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethyl Acetate\Ehtyl acetate data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

EA

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	5
Number of Detected Data	45
Minimum Detected	0.47
Maximum Detected	3.689
Percent Non-Detects	10.00%
Minimum Non-detect	0.47
Maximum Non-detect	1.841
Mean of Detected data	2.084
SD of Detected data	0.86

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.953
5% Shapiro Wilk Critical Value	0.945

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	1.905
SD (Log Scale)	0.993
Tolerance Factor K	0.236
95% UTL 50% Coverage	8.492
95% UPL	36.11
90% Percentile (z)	23.99
95% Percentile (z)	34.42
99% Percentile (z)	67.73

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	1.927
SD in Log Scale	0.957
Mean in Orignal Scale	10.47
SD in Original Scale	9.823
95% UTL 50% Coverage	8.606
95% BCA UTL with 50% Coverage	10.25
95% Bootstrap (%) UTL with 50% Coverage	10.25
95% UPL (t)	34.69
90% Percentile (z)	23.4

95% Percentile (z)	33.12
99% Percentile (z)	63.56

Kaplan Meier (KM) Method

Mean	10.5
SD	9.7
SE of Mean	1.388
95% UTL 50% Coverage	12.79
95% KM Chebyshev UPL	53.2
95% KM UPL (t)	26.93
95% KM Percentile (z)	26.46

Ethylbenzene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethylbenzene\Ethylbenzene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	47
Number of Missing Values	3
Number of Distinct Observations	38
Minimum	0.18
Maximum	11
Mean of Raw Data	1.68
Standard Deviation of Raw Data	2.085
Kstar	1.002
Mean of Log Transformed Data	-0.025
Standard Deviation of Log Transformed Data	1.025

Normal Distribution Test Results

Correlation Coefficient R	0.819
Shapiro Wilk Test Statistic	0.689
Shapiro Wilk Critical (0.95) Value	0.946
Approximate Shapiro Wilk P Value	5.455E-12
Lilliefors Test Statistic	0.239
Lilliefors Critical (0.95) Value	0.129

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.972
A-D Test Statistic	1.366
A-D Critical (0.95) Value	0.777
K-S Test Statistic	0.159
K-S Critical(0.95) Value	0.133

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.988
Shapiro Wilk Test Statistic	0.962
Shapiro Wilk Critical (0.95) Value	0.946
Approximate Shapiro Wilk P Value	0.211
Lilliefors Test Statistic	0.093
Lilliefors Critical (0.95) Value	0.129

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethylbenzene\Ethylbenzene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
EB	50	0.17	11	1.589	0.775	4.212	2.052	0.778	2.682	8.706	1.291

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
EB	50	0.18	0.209	0.326	0.408	0.775	2.125	2.42	3.96	5.965	8.599

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Ethylbenzene\Ethylbenzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

EB

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	4
Number of Detected Data	46
Minimum Detected	-1.715
Maximum Detected	2.398
Percent Non-Detects	8.00%
Minimum Non-detect	-1.772
Maximum Non-detect	-0.151
Mean of Detected data	-0.0222
SD of Detected data	1.036

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.961
5% Shapiro Wilk Critical Value	0.945

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	-0.183
SD (Log Scale)	1.152
Tolerance Factor K	0.236
95% UTL 50% Coverage	1.093
95% UPL	5.86
90% Percentile (z)	3.647
95% Percentile (z)	5.542
99% Percentile (z)	12.15

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	-0.185
SD in Log Scale	1.156
Mean in Orignal Scale	1.575
SD in Original Scale	2.06
95% UTL 50% Coverage	1.091
95% BCA UTL with 50% Coverage	1
95% Bootstrap (%) UTL with 50% Coverage	1.045
95% UPL (t)	5.887
90% Percentile (z)	3.657

95% Percentile (z)	5.566
99% Percentile (z)	12.24

Kaplan Meier (KM) Method

Mean	1.581
SD	2.036
SE of Mean	0.291
95% UTL 50% Coverage	2.061
95% KM Chebyshev UPL	10.54
95% KM UPL (t)	5.028
95% KM Percentile (z)	4.929

From File: C:\Documents and Settings\martichbj\Desktop\Data Stats\Ethylbenzene\Ethylbenzene data.wst

Summary Statistics for Raw Full Data Sets

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
AG	27	0.31	11	2.416	1.4	6.109	2.472	1.364	1.97	4.507	1.023
DG	23	0.17	2.5	0.619	0.48	0.339	0.582	0.356	2.003	4.114	0.94

Percentiles for Raw Full Data Sets

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
AG	27	0.409	0.46	0.766	0.79	1.4	2.9	3.7	5.92	6.1	9.726
DG	23	0.18	0.18	0.204	0.215	0.48	0.665	0.704	1.46	1.59	2.302

Nonparametric Background Statistics for Full Data Sets

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Ethylbenzene\Ethylbenzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Number of Bootstrap Operations	2000

AG

Some Non-Parametric Statistics

Number of Valid Observations	27
Number of Distinct Observations	22
Minimum	0.31
Maximum	11
Second Largest	6.1
Mean	2.416
Geometric Mean	1.564
First Quartile	0.79
Median	1.4
Third Quartile	2.9
SD	2.472
Variance	6.109
Coefficient of Variation	1.023
Skewness	1.97
Mean of Log-Transformed data	0.447
SD of Log-Transformed data	0.952

Data appear Gamma Distributed at 5% Significance Level

Non-Parametric Background Statistics

90% Percentile	5.92
95% Percentile	6.1
99% Percentile	9.726

95% UTL with 50% Coverage

Order Statistic	17
Achieved CC	0.939
UTL	2.3

95% BCA Bootstrap UTL with 50% Coverage	2.3
95% Percentile Bootstrap UTL with 50% Coverage	2.4

95% UPL	9.04
95% Chebyshev UPL	13.39

Upper Limit Based upon IQR	6.065

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Ethylbenzene\Ethylbenzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

DG

Total Number of Data	23
Number of Non-Detect Data	3
Number of Detected Data	20
Minimum Detected	0.18
Maximum Detected	2.5
Percent Non-Detects	13.04%
Minimum Non-detect	0.17
Maximum Non-detect	0.18
Mean of Detected Data	0.686
SD of Detected Data	0.597
Mean of Log-Transformed Detected Data	-0.662
SD of Log-Transformed Detected Data	0.748

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	15
Achieved CC	0.953
UTL	0.53
Largest Non-detect at Order	3

95% UPL

95% UPL	2.32

Kaplan-Meier (KM) Method

Mean	0.62
SD	0.569
Standard Error of Mean	0.122
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	3.152
95% KM UPL (t)	1.617
90% KM Percentile (z)	1.348
95% KM Percentile (z)	1.555
99% KM Percentile (z)	1.943

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Ethylbenzene\Ethylbenzene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)
Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median

Area of Concern Data: AG

Background Data: DG

Raw Statistics

	Site	Background
Number of Valid Observations	27	23
Number of Distinct Observations	22	20
Minimum	0.31	0.17
Maximum	11	2.5
Mean	2.416	0.619
Median	1.4	0.48
SD	2.472	0.582
SE of Mean	0.476	0.121

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

Site Rank Sum W-Stat	903.5
WMW Test U-Stat	4.175
WMW Critical Value (0.050)	1.645
P-Value	1.4880E-5

Conclusion with Alpha = 0.05

Reject H0, Conclude Site > Background

P-Value < alpha (0.05)

Hexachlorobutadiene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\HXCB\HXCB data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

m,p-Xylenes

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\m&p-Xylenes\m&p-Xylenes data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	33
Number of Missing Values	17
Number of Distinct Observations	29
Minimum	1.5
Maximum	50
Mean of Raw Data	8.745
Standard Deviation of Raw Data	10.4
Kstar	1.049
Mean of Log Transformed Data	1.665
Standard Deviation of Log Transformed Data	0.979

Normal Distribution Test Results

Correlation Coefficient R	0.83
Shapiro Wilk Test Statistic	0.704
Shapiro Wilk Critical (0.95) Value	0.931
Approximate Shapiro Wilk P Value	7.0119E-8
Lilliefors Test Statistic	0.243
Lilliefors Critical (0.95) Value	0.154

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.977
A-D Test Statistic	1.191
A-D Critical (0.95) Value	0.773
K-S Test Statistic	0.173
K-S Critical(0.95) Value	0.157

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.974
Shapiro Wilk Test Statistic	0.933
Shapiro Wilk Critical (0.95) Value	0.931
Approximate Shapiro Wilk P Value	0.0532
Lilliefors Test Statistic	0.124
Lilliefors Critical (0.95) Value	0.154

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\m&p-Xylenes\m&p-Xylenes data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
m&p-x	50	1.5	50	6.454	2.65	81.45	9.025	1.705	3.045	11.06	1.398

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
m&p-x	50	1.5	1.5	1.6	1.7	2.65	6.6	8.92	16.2	24.2	39.71

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\m&p-Xylenes\m&p-Xylenes data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

m&p-x

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	17
Number of Detected Data	33
Minimum Detected	0.405
Maximum Detected	3.912
Percent Non-Detects	34.00%
Minimum Non-detect	0.405
Maximum Non-detect	1.841
Mean of Detected data	1.665
SD of Detected data	0.979

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.933
5% Shapiro Wilk Critical Value	0.931

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	1.073
SD (Log Scale)	1.167
Tolerance Factor K	0.236
95% UTL 50% Coverage	3.85
95% UPL	21.09
90% Percentile (z)	13.05
95% Percentile (z)	19.94
99% Percentile (z)	44.17

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	0.953
SD in Log Scale	1.315
Mean in Orignal Scale	6.025
SD in Original Scale	9.237
95% UTL 50% Coverage	3.538
95% BCA UTL with 50% Coverage	3.35
95% Bootstrap (%) UTL with 50% Coverage	3.8
95% UPL (t)	24.03
90% Percentile (z)	13.98

95% Percentile (z)	22.55
99% Percentile (z)	55.22

Kaplan Meier (KM) Method

Mean	6.306
SD	8.989
SE of Mean	1.291
95% UTL 50% Coverage	8.426
95% KM Chebyshev UPL	45.88
95% KM UPL (t)	21.53
95% KM Percentile (z)	21.09

Methyl Methacrylate

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Methyl Meth\Methyl Meth data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	1.3	6.3	1.836	1.7	0.568	0.754	0.297	4.804	26.38	0.411

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	1.4	1.49	1.5	1.5	1.7	1.9	1.9	2	2.495	5.075

Methylene Chloride

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Methylene chloride\Methylene chloride c
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	19
Number of Missing Values	31
Number of Distinct Observations	19
Minimum	0.83
Maximum	170
Mean of Raw Data	19.43
Standard Deviation of Raw Data	43.31
Kstar	0.382
Mean of Log Transformed Data	1.379
Standard Deviation of Log Transformed Data	1.656

Normal Distribution Test Results

Correlation Coefficient R	0.69
Shapiro Wilk Test Statistic	0.497
Shapiro Wilk Critical (0.95) Value	0.901
Approximate Shapiro Wilk P Value	3.1139E-8
Lilliefors Test Statistic	0.364
Lilliefors Critical (0.95) Value	0.203

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.96
A-D Test Statistic	2.128
A-D Critical (0.95) Value	0.82
K-S Test Statistic	0.301
K-S Critical(0.95) Value	0.212

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.923
Shapiro Wilk Test Statistic	0.843
Shapiro Wilk Critical (0.95) Value	0.901
Approximate Shapiro Wilk P Value	0.00457
Lilliefors Test Statistic	0.242
Lilliefors Critical (0.95) Value	0.203

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Methylene chloride\Methylene chloride data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
MC	50	0.67	170	7.948	0.93	771.5	27.78	0.237	5.009	26.35	3.495

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
MC	50	0.71	0.739	0.778	0.783	0.93	1.45	2.12	8.95	28.55	135.7

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Methylene chloride\Methylene chloride c
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

MC

Total Number of Data	50
Number of Non-Detect Data	31
Number of Detected Data	19
Minimum Detected	0.83
Maximum Detected	170
Percent Non-Detects	62.00%
Minimum Non-detect	0.67
Maximum Non-detect	3.2
Mean of Detected Data	19.43
SD of Detected Data	43.31
Mean of Log-Transformed Detected Data	1.379
SD of Log-Transformed Detected Data	1.656

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	0.98
Warning: Largest Non-detect at Order	43

95% UPL

95% UPL	65.9

Kaplan-Meier (KM) Method

Mean	7.901
SD	27.51
Standard Error of Mean	3.997
95% UTL 50% Coverage	14.39
95% KM Chebyshev UPL	129
95% KM UPL (t)	54.48
90% KM Percentile (z)	43.15
95% KM Percentile (z)	53.15
99% KM Percentile (z)	71.89

Methyl tert-Butyl Ether

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\MTBE\MTBE data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Naphthalene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Naphthalene\Naphthalene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	40
Number of Missing Values	10
Number of Distinct Observations	33
Minimum	0.18
Maximum	130
Mean of Raw Data	3.725
Standard Deviation of Raw Data	20.48
Kstar	0.32
Mean of Log Transformed Data	-0.757
Standard Deviation of Log Transformed Data	1.074

Normal Distribution Test Results

Correlation Coefficient R	0.371
Shapiro Wilk Test Statistic	0.172
Shapiro Wilk Critical (0.95) Value	0.94
Approximate Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.51
Lilliefors Critical (0.95) Value	0.14

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.699
A-D Test Statistic	10.98
A-D Critical (0.95) Value	0.851
K-S Test Statistic	0.419
K-S Critical(0.95) Value	0.151

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.78
Shapiro Wilk Test Statistic	0.646
Shapiro Wilk Critical (0.95) Value	0.94
Approximate Shapiro Wilk P Value	4.516E-11
Lilliefors Test Statistic	0.206
Lilliefors Critical (0.95) Value	0.14

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Naphthalene\Naphthalene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Naph	50	0.14	130	3.017	0.355	335.9	18.33	0.23	7.067	49.96	6.075

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Naph	50	0.155	0.17	0.18	0.21	0.355	0.51	0.572	0.821	1.32	67.23

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Naphthalene\Naphthalene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

Naph

Total Number of Data	50
Number of Non-Detect Data	10
Number of Detected Data	40
Minimum Detected	0.18
Maximum Detected	130
Percent Non-Detects	20.00%
Minimum Non-detect	0.14
Maximum Non-detect	0.38
Mean of Detected Data	3.725
SD of Detected Data	20.48
Mean of Log-Transformed Detected Data	-0.757
SD of Log-Transformed Detected Data	1.074

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	0.39
Largest Non-detect at Order	29

95% UPL

95% UPL	1.68

Kaplan-Meier (KM) Method

Mean	3.017
SD	18.14
Standard Error of Mean	2.599
95% UTL 50% Coverage	7.297
95% KM Chebyshev UPL	82.89
95% KM UPL (t)	33.74
90% KM Percentile (z)	26.27
95% KM Percentile (z)	32.86
99% KM Percentile (z)	45.23

From File: C:\Documents and Settings\martichbj\Desktop\Data Stats\Naphthalene\Naphthalene data.wst

Summary Statistics for Raw Full Data Sets

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
AG	27	0.14	1.9	0.528	0.39	0.176	0.419	0.237	1.941	3.976	0.793
DG	23	0.15	130	5.939	0.24	731.4	27.04	0.133	4.796	23	4.554

Percentiles for Raw Full Data Sets

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
AG	27	0.17	0.176	0.236	0.265	0.39	0.61	0.722	0.992	1.38	1.796
DG	23	0.151	0.164	0.18	0.18	0.24	0.41	0.432	0.556	0.634	101.5

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Naphthalene\Naphthalene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

AG

Total Number of Data	27
Number of Non-Detect Data	4
Number of Detected Data	23
Minimum Detected	0.21
Maximum Detected	1.9
Percent Non-Detects	14.81%
Minimum Non-detect	0.14
Maximum Non-detect	0.18
Mean of Detected Data	0.591
SD of Detected Data	0.424
Mean of Log-Transformed Detected Data	-0.713
SD of Log-Transformed Detected Data	0.596

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	17
Achieved CC	0.939
UTL	0.51
Largest Non-detect at Order	4

95% UPL

95% UPL	1.74

Kaplan-Meier (KM) Method

Mean	0.535
SD	0.406
Standard Error of Mean	0.0798
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	2.335
95% KM UPL (t)	1.239
90% KM Percentile (z)	1.055
95% KM Percentile (z)	1.202
99% KM Percentile (z)	1.478

DG

Total Number of Data	23
Number of Non-Detect Data	6
Number of Detected Data	17
Minimum Detected	0.18
Maximum Detected	130
Percent Non-Detects	26.09%
Minimum Non-detect	0.15
Maximum Non-detect	0.38
Mean of Detected Data	7.964
SD of Detected Data	31.45
Mean of Log-Transformed Detected Data	-0.818
SD of Log-Transformed Detected Data	1.522

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	N/A

95% UTL with 50% Coverage

Order Statistic	15
Achieved CC	0.953
UTL	0.37

Warning: Largest Non-detect at Order 16

95% UPL

95% UPL	104.1

Kaplan-Meier (KM) Method

Mean	5.935
SD	26.45
Standard Error of Mean	5.685
95% UTL 50% Coverage	N/A
95% KM Chebyshev UPL	123.7
95% KM UPL (t)	52.33
90% KM Percentile (z)	39.83
95% KM Percentile (z)	49.44
99% KM Percentile (z)	67.47

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Data Sets with Non-Detects

User Selected Options	
From File	C:\Documents and Settings\martichbj\Desktop\Data Stats\Naphthalene\Naphthalene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference (S)	0.000
Selected Null Hypothesis	Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1)
Alternative Hypothesis	Site or AOC Mean/Median Greater Than Background Mean/Median

Area of Concern Data: AG

Background Data: DG

Raw Statistics

	Site	Background
Number of Valid Data	27	23
Number of Non-Detect Data	4	6
Number of Detect Data	23	17
Minimum Non-Detect	0.14	0.15
Maximum Non-Detect	0.18	0.38
Percent Non detects	14.81%	26.09%
Minimum Detected	0.21	0.18
Maximum Detected	1.9	130
Mean of Detected Data	0.591	7.964
Median of Detected Data	0.5	0.36
SD of Detected Data	0.424	31.45

Wilcoxon-Mann-Whitney Site vs Background Test

All observations <= 0.38 (Max DL) are ranked the same

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

Site Rank Sum W-Stat	768
WMW Test U-Stat	1.538
WMW Critical Value (0.050)	1.645
P-Value	0.0621

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Site <= Background

P-Value >= alpha (0.05)

n-Butyl Acetate

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Butyl Acetate\n-Butyl acetate data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	31
Number of Missing Values	19
Number of Distinct Observations	23
Minimum	0.83
Maximum	14
Mean of Raw Data	2.882
Standard Deviation of Raw Data	2.681
Kstar	1.724
Mean of Log Transformed Data	0.77
Standard Deviation of Log Transformed Data	0.731

Normal Distribution Test Results

Correlation Coefficient R	0.833
Shapiro Wilk Test Statistic	0.715
Shapiro Wilk Critical (0.95) Value	0.929
Approximate Shapiro Wilk P Value	3.1207E-7
Lilliefors Test Statistic	0.222
Lilliefors Critical (0.95) Value	0.159

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.952
A-D Test Statistic	1.088
A-D Critical (0.95) Value	0.76
K-S Test Statistic	0.194
K-S Critical(0.95) Value	0.16

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.969
Shapiro Wilk Test Statistic	0.931
Shapiro Wilk Critical (0.95) Value	0.929
Approximate Shapiro Wilk P Value	0.0552
Lilliefors Test Statistic	0.175
Lilliefors Critical (0.95) Value	0.159

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Butyl Acetate\n-Butyl acetate data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
BA	50	0.69	14	2.173	1.3	5.364	2.316	0.712	3.201	13.45	1.066

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
BA	50	0.744	0.779	0.838	0.853	1.3	2.475	3.34	4.37	5.675	10.72

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Butyl Acetate\n-Butyl acetate data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

BA

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	19
Number of Detected Data	31
Minimum Detected	-0.186
Maximum Detected	2.639
Percent Non-Detects	38.00%
Minimum Non-detect	-0.371
Maximum Non-detect	1.163
Mean of Detected data	0.77
SD of Detected data	0.731

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.931
5% Shapiro Wilk Critical Value	0.929

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	0.188
SD (Log Scale)	0.97
Tolerance Factor K	0.236
95% UTL 50% Coverage	1.517
95% UPL	6.239
90% Percentile (z)	4.184
95% Percentile (z)	5.952
99% Percentile (z)	11.53

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	0.176
SD in Log Scale	0.969
Mean in Orignal Scale	1.965
SD in Original Scale	2.41
95% UTL 50% Coverage	1.499
95% BCA UTL with 50% Coverage	1.3
95% Bootstrap (%) UTL with 50% Coverage	1.3
95% UPL (t)	6.153
90% Percentile (z)	4.129

95% Percentile (z)	5.871
99% Percentile (z)	11.36

Kaplan Meier (KM) Method

Mean	2.113
SD	2.299
SE of Mean	0.331
95% UTL 50% Coverage	2.655
95% KM Chebyshev UPL	12.23
95% KM UPL (t)	6.006
95% KM Percentile (z)	5.895

n-Heptane

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Heptane\n-Heptane data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	31
Number of Missing Values	19
Number of Distinct Observations	25
Minimum	0.71
Maximum	20
Mean of Raw Data	3.293
Standard Deviation of Raw Data	3.608
Kstar	1.469
Mean of Log Transformed Data	0.848
Standard Deviation of Log Transformed Data	0.794

Normal Distribution Test Results

Correlation Coefficient R	0.774
Shapiro Wilk Test Statistic	0.629
Shapiro Wilk Critical (0.95) Value	0.929
Approximate Shapiro Wilk P Value	7.3984E-9
Lilliefors Test Statistic	0.237
Lilliefors Critical (0.95) Value	0.159

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.908
A-D Test Statistic	0.802
A-D Critical (0.95) Value	0.763
K-S Test Statistic	0.135
K-S Critical(0.95) Value	0.16

Data follow Appr. Gamma Distribution at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.977
Shapiro Wilk Test Statistic	0.952
Shapiro Wilk Critical (0.95) Value	0.929
Approximate Shapiro Wilk P Value	0.212
Lilliefors Test Statistic	0.125
Lilliefors Critical (0.95) Value	0.159

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Heptane\n-Heptane data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Hep	50	0.69	20	2.412	1.1	9.372	3.061	0.511	4.181	22.31	1.269

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Hep	50	0.739	0.769	0.838	0.87	1.1	3.175	3.32	4.98	5.965	13.92

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Heptane\n-Heptane data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

Hep

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	19
Number of Detected Data	31
Minimum Detected	-0.342
Maximum Detected	2.996
Percent Non-Detects	38.00%
Minimum Non-detect	-0.371
Maximum Non-detect	1.163
Mean of Detected data	0.848
SD of Detected data	0.794

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.952
5% Shapiro Wilk Critical Value	0.929

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	0.225
SD (Log Scale)	1.035
Tolerance Factor K	0.236
95% UTL 50% Coverage	1.599
95% UPL	7.223
90% Percentile (z)	4.718
95% Percentile (z)	6.87
99% Percentile (z)	13.91

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	0.207
SD in Log Scale	1.046
Mean in Orignal Scale	2.211
SD in Original Scale	3.15
95% UTL 50% Coverage	1.574
95% BCA UTL with 50% Coverage	1.2
95% Bootstrap (%) UTL with 50% Coverage	1.5
95% UPL (t)	7.225
90% Percentile (z)	4.697

95% Percentile (z)	6.868
99% Percentile (z)	14.01

Kaplan Meier (KM) Method

Mean	2.325
SD	3.058
SE of Mean	0.44
95% UTL 50% Coverage	3.046
95% KM Chebyshev UPL	15.79
95% KM UPL (t)	7.503
95% KM Percentile (z)	7.355

n-Hexane

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Hexane\n-Hexane data.wst

Full Precision OFF

Confidence Coefficient 0.95

raw

Raw Statistics

Number of Valid Observations	31
Number of Missing Values	19
Number of Distinct Observations	23
Minimum	0.8
Maximum	19
Mean of Raw Data	5.387
Standard Deviation of Raw Data	5.715
Kstar	1.007
Mean of Log Transformed Data	1.16
Standard Deviation of Log Transformed Data	1.032

Normal Distribution Test Results

Correlation Coefficient R	0.879
Shapiro Wilk Test Statistic	0.76
Shapiro Wilk Critical (0.95) Value	0.929
Approximate Shapiro Wilk P Value	2.7710E-6
Lilliefors Test Statistic	0.292
Lilliefors Critical (0.95) Value	0.159

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.965
A-D Test Statistic	1.632
A-D Critical (0.95) Value	0.773
K-S Test Statistic	0.263
K-S Critical(0.95) Value	0.162

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.958
Shapiro Wilk Test Statistic	0.895
Shapiro Wilk Critical (0.95) Value	0.929
Approximate Shapiro Wilk P Value	0.00543
Lilliefors Test Statistic	0.221
Lilliefors Critical (0.95) Value	0.159

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Hexane\n-Hexane data.wsl

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
HX	50	0.75	19	3.745	1.5	24.61	4.961	0.993	1.998	3.036	1.325

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
HX	50	0.775	0.799	0.878	0.91	1.5	3.2	6.14	11.3	15.55	19

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Hexane\n-Hexane data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

HX

Total Number of Data	50
Number of Non-Detect Data	19
Number of Detected Data	31
Minimum Detected	0.8
Maximum Detected	19
Percent Non-Detects	38.00%
Minimum Non-detect	0.75
Maximum Non-detect	3.2
Mean of Detected Data	5.387
SD of Detected Data	5.715
Mean of Log-Transformed Detected Data	1.16
SD of Log-Transformed Detected Data	1.032

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	1.9
Warning: Largest Non-detect at Order	37

95% UPL

95% UPL	17.35

Kaplan-Meier (KM) Method

Mean	3.658
SD	4.948
Standard Error of Mean	0.711
95% UTL 50% Coverage	4.826
95% KM Chebyshev UPL	25.44
95% KM UPL (t)	12.04
90% KM Percentile (z)	9.999
95% KM Percentile (z)	11.8
99% KM Percentile (z)	15.17

n-Nonane

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Nonane\n-Nonane data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	19
Number of Missing Values	31
Number of Distinct Observations	16
Minimum	0.79
Maximum	39
Mean of Raw Data	4.098
Standard Deviation of Raw Data	8.532
Kstar	0.82
Mean of Log Transformed Data	0.786
Standard Deviation of Log Transformed Data	0.882

Normal Distribution Test Results

Correlation Coefficient R	0.574
Shapiro Wilk Test Statistic	0.36
Shapiro Wilk Critical (0.95) Value	0.901
Approximate Shapiro Wilk P Value	8.313E-10
Lilliefors Test Statistic	0.41
Lilliefors Critical (0.95) Value	0.203

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.789
A-D Test Statistic	2.277
A-D Critical (0.95) Value	0.772
K-S Test Statistic	0.261
K-S Critical(0.95) Value	0.205

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.902
Shapiro Wilk Test Statistic	0.832
Shapiro Wilk Critical (0.95) Value	0.901
Approximate Shapiro Wilk P Value	0.00242
Lilliefors Test Statistic	0.151
Lilliefors Critical (0.95) Value	0.203

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Nonane\n-Nonane data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Non	50	0.67	39	2.156	0.93	29.24	5.408	0.245	6.718	46.52	2.508

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Non	50	0.71	0.748	0.778	0.795	0.93	1.8	2.1	3.02	3.985	22.29

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Nonane\n-Nonane data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

Non

Total Number of Data	50
Number of Non-Detect Data	31
Number of Detected Data	19
Minimum Detected	0.79
Maximum Detected	39
Percent Non-Detects	62.00%
Minimum Non-detect	0.67
Maximum Non-detect	3.2
Mean of Detected Data	4.098
SD of Detected Data	8.532
Mean of Log-Transformed Detected Data	0.786
SD of Log-Transformed Detected Data	0.882

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	1
Warning: Largest Non-detect at Order	46

95% UPL

95% UPL	4.57

Kaplan-Meier (KM) Method

Mean	2.057
SD	5.364
Standard Error of Mean	0.779
95% UTL 50% Coverage	3.322
95% KM Chebyshev UPL	25.67
95% KM UPL (t)	11.14
90% KM Percentile (z)	8.931
95% KM Percentile (z)	10.88
99% KM Percentile (z)	14.54

n-Octane

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Octane\n-Octane data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	20
Number of Missing Values	30
Number of Distinct Observations	13
Minimum	0.82
Maximum	12
Mean of Raw Data	1.865
Standard Deviation of Raw Data	2.437
Kstar	1.658
Mean of Log Transformed Data	0.339
Standard Deviation of Log Transformed Data	0.605

Normal Distribution Test Results

Correlation Coefficient R	0.607
Shapiro Wilk Test Statistic	0.398
Shapiro Wilk Critical (0.95) Value	0.905
Approximate Shapiro Wilk P Value	1.0374E-9
Lilliefors Test Statistic	0.379
Lilliefors Critical (0.95) Value	0.198

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.768
A-D Test Statistic	2.666
A-D Critical (0.95) Value	0.753
K-S Test Statistic	0.267
K-S Critical(0.95) Value	0.196

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.839
Shapiro Wilk Test Statistic	0.723
Shapiro Wilk Critical (0.95) Value	0.905
Approximate Shapiro Wilk P Value	2.6574E-5
Lilliefors Test Statistic	0.206
Lilliefors Critical (0.95) Value	0.198

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Octane\n-Octane data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Oct	50	0.67	12	1.329	0.925	2.637	1.624	0.222	6.06	39.88	1.222

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Oct	50	0.71	0.748	0.78	0.823	0.925	1.175	1.32	2.03	2.3	7.688

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\n-Octane\n-Octane data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

Oct

Total Number of Data	50
Number of Non-Detect Data	30
Number of Detected Data	20
Minimum Detected	0.82
Maximum Detected	12
Percent Non-Detects	60.00%
Minimum Non-detect	0.67
Maximum Non-detect	3.2
Mean of Detected Data	1.865
SD of Detected Data	2.437
Mean of Log-Transformed Detected Data	0.339
SD of Log-Transformed Detected Data	0.605

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	0.98
Warning: Largest Non-detect at Order	49

95% UPL

95% UPL	2.705

Kaplan-Meier (KM) Method

Mean	1.247
SD	1.586
Standard Error of Mean	0.23
95% UTL 50% Coverage	1.621
95% KM Chebyshev UPL	8.229
95% KM UPL (t)	3.933
90% KM Percentile (z)	3.28
95% KM Percentile (z)	3.856
99% KM Percentile (z)	4.937

n-Propylbenzene

From File: n-Propylbenzene.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	1.002	0.85	0.24	0.49	0.119	3.184	10.86	0.489

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.768	0.773	0.85	0.93	0.972	1.51	1.81	3.004

o-Xylene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\o-Xylene\o-Xylene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	21
Number of Missing Values	29
Number of Distinct Observations	19
Minimum	0.9
Maximum	16
Mean of Raw Data	3.929
Standard Deviation of Raw Data	3.628
Kstar	1.543
Mean of Log Transformed Data	1.059
Standard Deviation of Log Transformed Data	0.775

Normal Distribution Test Results

Correlation Coefficient R	0.862
Shapiro Wilk Test Statistic	0.755
Shapiro Wilk Critical (0.95) Value	0.908
Approximate Shapiro Wilk P Value	6.9809E-5
Lilliefors Test Statistic	0.25
Lilliefors Critical (0.95) Value	0.193

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.971
A-D Test Statistic	0.662
A-D Critical (0.95) Value	0.756
K-S Test Statistic	0.158
K-S Critical(0.95) Value	0.192

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.981
Shapiro Wilk Test Statistic	0.957
Shapiro Wilk Critical (0.95) Value	0.908
Approximate Shapiro Wilk P Value	0.46
Lilliefors Test Statistic	0.11
Lilliefors Critical (0.95) Value	0.193

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\o-Xylene\o-Xylene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
o-X	50	0.67	16	2.194	0.935	7.719	2.778	0.319	3.219	12.42	1.267

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
o-X	50	0.719	0.749	0.78	0.823	0.935	2.375	2.88	5.19	7.61	12.47

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\o-Xylene\o-Xylene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

o-X

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	29
Number of Detected Data	21
Minimum Detected	-0.105
Maximum Detected	2.773
Percent Non-Detects	58.00%
Minimum Non-detect	-0.4
Maximum Non-detect	1.163
Mean of Detected data	1.059
SD of Detected data	0.775

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.957
5% Shapiro Wilk Critical Value	0.908

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	-0.0282
SD (Log Scale)	1.08
Tolerance Factor K	0.236
95% UTL 50% Coverage	1.254
95% UPL	6.052
90% Percentile (z)	3.88
95% Percentile (z)	5.744
99% Percentile (z)	11.99

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	-0.17
SD in Log Scale	1.184
Mean in Orignal Scale	1.858
SD in Original Scale	2.923
95% UTL 50% Coverage	1.116
95% BCA UTL with 50% Coverage	1.05
95% Bootstrap (%) UTL with 50% Coverage	1.2
95% UPL (t)	6.266
90% Percentile (z)	3.848

95% Percentile (z)	5.917
99% Percentile (z)	13.26

Kaplan Meier (KM) Method

Mean	2.178
SD	2.737
SE of Mean	0.397
95% UTL 50% Coverage	2.824
95% KM Chebyshev UPL	14.23
95% KM UPL (t)	6.813
95% KM Percentile (z)	6.68

Tetrachloroethene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\PCE\PCE data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	42
Number of Missing Values	8
Number of Distinct Observations	37
Minimum	0.045
Maximum	3.9
Mean of Raw Data	0.611
Standard Deviation of Raw Data	1.019
Kstar	0.564
Mean of Log Transformed Data	-1.543
Standard Deviation of Log Transformed Data	1.344

Normal Distribution Test Results

Correlation Coefficient R	0.769
Shapiro Wilk Test Statistic	0.585
Shapiro Wilk Critical (0.95) Value	0.942
Approximate Shapiro Wilk P Value	4.848E-13
Lilliefors Test Statistic	0.378
Lilliefors Critical (0.95) Value	0.137

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.95
A-D Test Statistic	4.339
A-D Critical (0.95) Value	0.805
K-S Test Statistic	0.279
K-S Critical(0.95) Value	0.143

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.929
Shapiro Wilk Test Statistic	0.809
Shapiro Wilk Critical (0.95) Value	0.942
Approximate Shapiro Wilk P Value	1.0399E-5
Lilliefors Test Statistic	0.18
Lilliefors Critical (0.95) Value	0.137

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\PCE\PCE data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
PCE	50	0.034	3.9	0.52	0.099	0.914	0.956	0.0793	2.265	4.035	1.837

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
PCE	50	0.0445	0.0459	0.0506	0.061	0.099	0.238	0.348	2.31	2.765	3.557

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\PCE\PCE data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

PCE

Total Number of Data	50
Number of Non-Detect Data	8
Number of Detected Data	42
Minimum Detected	0.045
Maximum Detected	3.9
Percent Non-Detects	16.00%
Minimum Non-detect	0.034
Maximum Non-detect	0.051
Mean of Detected Data	0.611
SD of Detected Data	1.019
Mean of Log-Transformed Detected Data	-1.543
SD of Log-Transformed Detected Data	1.344

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	0.14
Largest Non-detect at Order	11

95% UPL

95% UPL	3.035

Kaplan-Meier (KM) Method

Mean	0.521
SD	0.946
Standard Error of Mean	0.135
95% UTL 50% Coverage	0.744
95% KM Chebyshev UPL	4.686
95% KM UPL (t)	2.123
90% KM Percentile (z)	1.733
95% KM Percentile (z)	2.077
99% KM Percentile (z)	2.722

Propene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Propene\Propene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	48
Number of Missing Values	2
Number of Distinct Observations	41
Minimum	0.94
Maximum	850
Mean of Raw Data	26.16
Standard Deviation of Raw Data	122.1
Kstar	0.413
Mean of Log Transformed Data	1.734
Standard Deviation of Log Transformed Data	1.214

Normal Distribution Test Results

Correlation Coefficient R	0.399
Shapiro Wilk Test Statistic	0.198
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.454
Lilliefors Critical (0.95) Value	0.128

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.7
A-D Test Statistic	7.167
A-D Critical (0.95) Value	0.832
K-S Test Statistic	0.322
K-S Critical(0.95) Value	0.137

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.937
Shapiro Wilk Test Statistic	0.895
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	2.3501E-4
Lilliefors Test Statistic	0.122
Lilliefors Critical (0.95) Value	0.128

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Propene\Propene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
PPN	50	0.75	850	25.14	5.95	14327	119.7	5.486	6.955	48.84	4.761

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
PPN	50	0.945	1.29	1.86	2.175	5.95	8.65	11	18.1	35.3	471.7

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Propene\Propene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

PPN

Total Number of Data	50
Number of Non-Detect Data	2
Number of Detected Data	48
Minimum Detected	0.94
Maximum Detected	850
Percent Non-Detects	4.00%
Minimum Non-detect	0.75
Maximum Non-detect	0.77
Mean of Detected Data	26.16
SD of Detected Data	122.1
Mean of Log-Transformed Detected Data	1.734
SD of Log-Transformed Detected Data	1.214

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	6.5
Largest Non-detect at Order	2

95% UPL

95% UPL	60.95

Kaplan-Meier (KM) Method

Mean	25.15
SD	118.5
Standard Error of Mean	16.93
95% UTL 50% Coverage	53.1
95% KM Chebyshev UPL	546.8
95% KM UPL (t)	225.8
90% KM Percentile (z)	177
95% KM Percentile (z)	220
99% KM Percentile (z)	300.8

Styrene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Styrene\Styrene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	17
Number of Missing Values	33
Number of Distinct Observations	14
Minimum	0.85
Maximum	2.9
Mean of Raw Data	1.549
Standard Deviation of Raw Data	0.659
Kstar	5.19
Mean of Log Transformed Data	0.355
Standard Deviation of Log Transformed Data	0.414

Normal Distribution Test Results

Correlation Coefficient R	0.942
Shapiro Wilk Test Statistic	0.874
Shapiro Wilk Critical (0.95) Value	0.892
Approximate Shapiro Wilk P Value	0.0302
Lilliefors Test Statistic	0.235
Lilliefors Critical (0.95) Value	0.215

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.965
A-D Test Statistic	0.752
A-D Critical (0.95) Value	0.741
K-S Test Statistic	0.202
K-S Critical(0.95) Value	0.21

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.961
Shapiro Wilk Test Statistic	0.904
Shapiro Wilk Critical (0.95) Value	0.892
Approximate Shapiro Wilk P Value	0.104
Lilliefors Test Statistic	0.177
Lilliefors Critical (0.95) Value	0.215

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Styrene\Styrene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Sty	50	0.67	3.2	1.168	0.925	0.357	0.597	0.185	1.92	2.98	0.511

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Sty	50	0.735	0.759	0.806	0.823	0.925	1.2	1.34	2.21	2.355	3.053

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Styrene\Styrene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

Sty

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	33
Number of Detected Data	17
Minimum Detected	-0.163
Maximum Detected	1.065
Percent Non-Detects	66.00%
Minimum Non-detect	-0.4
Maximum Non-detect	1.163
Mean of Detected data	0.355
SD of Detected data	0.414

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.904
5% Shapiro Wilk Critical Value	0.892

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	-0.394
SD (Log Scale)	0.64
Tolerance Factor K	0.236
95% UTL 50% Coverage	0.784
95% UPL	1.993
90% Percentile (z)	1.532
95% Percentile (z)	1.933
99% Percentile (z)	2.99

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	-0.398
SD in Log Scale	0.616
Mean in Orignal Scale	0.833
SD in Original Scale	0.646
95% UTL 50% Coverage	0.777
95% BCA UTL with 50% Coverage	0.602
95% Bootstrap (%) UTL with 50% Coverage	0.641
95% UPL (t)	1.905
90% Percentile (z)	1.479

95% Percentile (z)	1.849
99% Percentile (z)	2.814

Kaplan Meier (KM) Method

Mean	1.096
SD	0.502
SE of Mean	0.074
95% UTL 50% Coverage	1.215
95% KM Chebyshev UPL	3.305
95% KM UPL (t)	1.946
95% KM Percentile (z)	1.922

Trichloroethene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\TCE\TCE data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	22
Number of Missing Values	28
Number of Distinct Observations	20
Minimum	0.042
Maximum	5.2
Mean of Raw Data	0.61
Standard Deviation of Raw Data	1.16
Kstar	0.525
Mean of Log Transformed Data	-1.58
Standard Deviation of Log Transformed Data	1.415

Normal Distribution Test Results

Correlation Coefficient R	0.717
Shapiro Wilk Test Statistic	0.536
Shapiro Wilk Critical (0.95) Value	0.911
Approximate Shapiro Wilk P Value	3.4514E-8
Lilliefors Test Statistic	0.336
Lilliefors Critical (0.95) Value	0.189

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.951
A-D Test Statistic	1.555
A-D Critical (0.95) Value	0.798
K-S Test Statistic	0.243
K-S Critical(0.95) Value	0.195

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.953
Shapiro Wilk Test Statistic	0.9
Shapiro Wilk Critical (0.95) Value	0.911
Approximate Shapiro Wilk P Value	0.0272
Lilliefors Test Statistic	0.203
Lilliefors Critical (0.95) Value	0.189

Data not Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\TCE\TCE data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
TCE	50	0.034	5.2	0.294	0.048	0.656	0.81	0.0148	5.026	28.51	2.754

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
TCE	50	0.0355	0.0379	0.041	0.042	0.048	0.0955	0.224	0.582	1.3	3.681

Nonparametric Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\TCE\TCE data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1

TCE

Total Number of Data	50
Number of Non-Detect Data	28
Number of Detected Data	22
Minimum Detected	0.042
Maximum Detected	5.2
Percent Non-Detects	56.00%
Minimum Non-detect	0.034
Maximum Non-detect	0.096
Mean of Detected Data	0.61
SD of Detected Data	1.16
Mean of Log-Transformed Detected Data	-1.58
SD of Log-Transformed Detected Data	1.415

Data do not follow a Discernable Distribution (0.05)

Nonparametric Background Statistics

Tolerance Factor K	0.236

95% UTL with 50% Coverage

Order Statistic	30
Achieved CC	0.941
UTL	0.057
Warning: Largest Non-detect at Order	38

95% UPL

95% UPL	1.66

Kaplan-Meier (KM) Method

Mean	0.292
SD	0.803
Standard Error of Mean	0.116
95% UTL 50% Coverage	0.481
95% KM Chebyshev UPL	3.826
95% KM UPL (t)	1.651
90% KM Percentile (z)	1.321
95% KM Percentile (z)	1.612
99% KM Percentile (z)	2.159

trans-1,2-Dichloroethene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\tDCE\tDCE data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

trans-1,3-Dichloropropene

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\tDCP\tDCP data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.67	3.2	0.917	0.825	0.147	0.384	0.126	4.87	26.88	0.418

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.71	0.729	0.76	0.77	0.825	0.928	0.93	0.982	1.275	2.563

Tetrahydrofuran

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options

From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\THF\THF data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	15
Number of Missing Values	35
Number of Distinct Observations	15
Minimum	0.8
Maximum	4.8
Mean of Raw Data	2.63
Standard Deviation of Raw Data	1.392
Kstar	2.668
Mean of Log Transformed Data	0.807
Standard Deviation of Log Transformed Data	0.622

Normal Distribution Test Results

Correlation Coefficient R	0.975
Shapiro Wilk Test Statistic	0.928
Shapiro Wilk Critical (0.95) Value	0.881
Approximate Shapiro Wilk P Value	0.348
Lilliefors Test Statistic	0.111
Lilliefors Critical (0.95) Value	0.229

Data appear Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.959
A-D Test Statistic	0.387
A-D Critical (0.95) Value	0.743
K-S Test Statistic	0.138
K-S Critical(0.95) Value	0.223

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.965
Shapiro Wilk Test Statistic	0.909
Shapiro Wilk Critical (0.95) Value	0.881
Approximate Shapiro Wilk P Value	0.184
Lilliefors Test Statistic	0.17
Lilliefors Critical (0.95) Value	0.229

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\THF\THF data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
THF	50	0.67	4.8	1.447	0.9	1.299	1.14	0.17	1.801	2.122	0.788

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
THF	50	0.74	0.76	0.78	0.803	0.9	1.55	2.02	3.24	4.185	4.702

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\THF\THF data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

THF

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	35
Number of Detected Data	15
Minimum Detected	-0.223
Maximum Detected	1.569
Percent Non-Detects	70.00%
Minimum Non-detect	-0.4
Maximum Non-detect	1.163
Mean of Detected data	0.807
SD of Detected data	0.622

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.909
5% Shapiro Wilk Critical Value	0.881

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	-0.323
SD (Log Scale)	0.85
Tolerance Factor K	0.236
95% UTL 50% Coverage	0.884
95% UPL	3.054
90% Percentile (z)	2.152
95% Percentile (z)	2.931
99% Percentile (z)	5.233

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	-0.442
SD in Log Scale	0.938
Mean in Orignal Scale	1.069
SD in Original Scale	1.278
95% UTL 50% Coverage	0.802
95% BCA UTL with 50% Coverage	0.536
95% Bootstrap (%) UTL with 50% Coverage	0.536
95% UPL (t)	3.148
90% Percentile (z)	2.139

95% Percentile (z)	3.008
99% Percentile (z)	5.702

Kaplan Meier (KM) Method

Mean	1.356
SD	1.116
SE of Mean	0.164
95% UTL 50% Coverage	1.619
95% KM Chebyshev UPL	6.27
95% KM UPL (t)	3.246
95% KM Percentile (z)	3.192

Toluene

Goodness-of-Fit Test Statistics for Full Data Sets without Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Toluene\Toluene data.wst
Full Precision	OFF
Confidence Coefficient	0.95

raw

Raw Statistics

Number of Valid Observations	49
Number of Missing Values	1
Number of Distinct Observations	41
Minimum	1.5
Maximum	130
Mean of Raw Data	18.69
Standard Deviation of Raw Data	24.52
Kstar	0.938
Mean of Log Transformed Data	2.34
Standard Deviation of Log Transformed Data	1.06

Normal Distribution Test Results

Correlation Coefficient R	0.806
Shapiro Wilk Test Statistic	0.669
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	2.730E-13
Lilliefors Test Statistic	0.249
Lilliefors Critical (0.95) Value	0.127

Data not Normal at (0.05) Significance Level

Gamma Distribution Test Results

Correlation Coefficient R	0.973
A-D Test Statistic	1.703
A-D Critical (0.95) Value	0.78
K-S Test Statistic	0.181
K-S Critical(0.95) Value	0.13

Data not Gamma Distributed at (0.05) Significance Level

Lognormal Distribution Test Results

Correlation Coefficient R	0.987
Shapiro Wilk Test Statistic	0.963
Shapiro Wilk Critical (0.95) Value	0.947
Approximate Shapiro Wilk P Value	0.215
Lilliefors Test Statistic	0.114
Lilliefors Critical (0.95) Value	0.127

Data appear Lognormal at (0.05) Significance Level

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Toluene\Toluene data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Tol	50	0.87	130	18.33	8.25	595.5	24.4	7.339	2.767	9.141	1.331

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Tol	50	1.88	3.14	4.48	5	8.25	24.5	29.2	49.2	59.85	109.9

Lognormal Background Statistics for Data Sets with Non-Detects

User Selected Options	
From File	P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Toluene\Toluene data.wst
Full Precision	OFF
Confidence Coefficient	95%
Coverage	50%
Different or Future K Values	1
Number of Bootstrap Operations	2000

Tol

Log-Transformed Statistics

Total Number of Data	50
Number of Non-Detect Data	1
Number of Detected Data	49
Minimum Detected	0.405
Maximum Detected	4.868
Percent Non-Detects	2.00%
Minimum Non-detect	-0.139
Maximum Non-detect	-0.139
Mean of Detected data	2.34
SD of Detected data	1.06

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.963
5% Shapiro Wilk Critical Value	0.947

Data appear Lognormal at 5% Significance Level

Background Statistics Assuming Lognormal Distribution

DL/2 Substitution Method

Mean (Log Scale)	2.277
SD (Log Scale)	1.141
Tolerance Factor K	0.236
95% UTL 50% Coverage	12.76
95% UPL	67.25
90% Percentile (z)	42.05
95% Percentile (z)	63.64
99% Percentile (z)	138.5

Note: DL/2 is not a recommended method.

Log ROS Method

Mean in Log Scale	2.285
SD in Log Scale	1.119
Mean in Orignal Scale	18.33
SD in Original Scale	24.41
95% UTL 50% Coverage	12.8
95% BCA UTL with 50% Coverage	10.4
95% Bootstrap (%) UTL with 50% Coverage	11.5
95% UPL (t)	65.34
90% Percentile (z)	41.23

95% Percentile (z)	61.9
99% Percentile (z)	132.7

Kaplan Meier (KM) Method

Mean	18.34
SD	24.15
SE of Mean	3.451
95% UTL 50% Coverage	24.04
95% KM Chebyshev UPL	124.7
95% KM UPL (t)	59.23
95% KM Percentile (z)	58.07

Vinyl Chloride

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\VC\VC data.wst

Summary Statistics for Raw Full Dataset

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	0.034	0.096	0.0442	0.042	1.1604E-4	0.0108	0.00593	3.145	11.95	0.244

Percentiles for Raw Full Dataset

Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	0.0355	0.0369	0.038	0.038	0.042	0.046	0.047	0.049	0.0636	0.0852

Vinyl Acetate

From File: P:\8469 (DEQ)\Indoor Air Study\Technical Evaluation\Data Stats\Vinyl acetate\Vinyl acetate data.wst

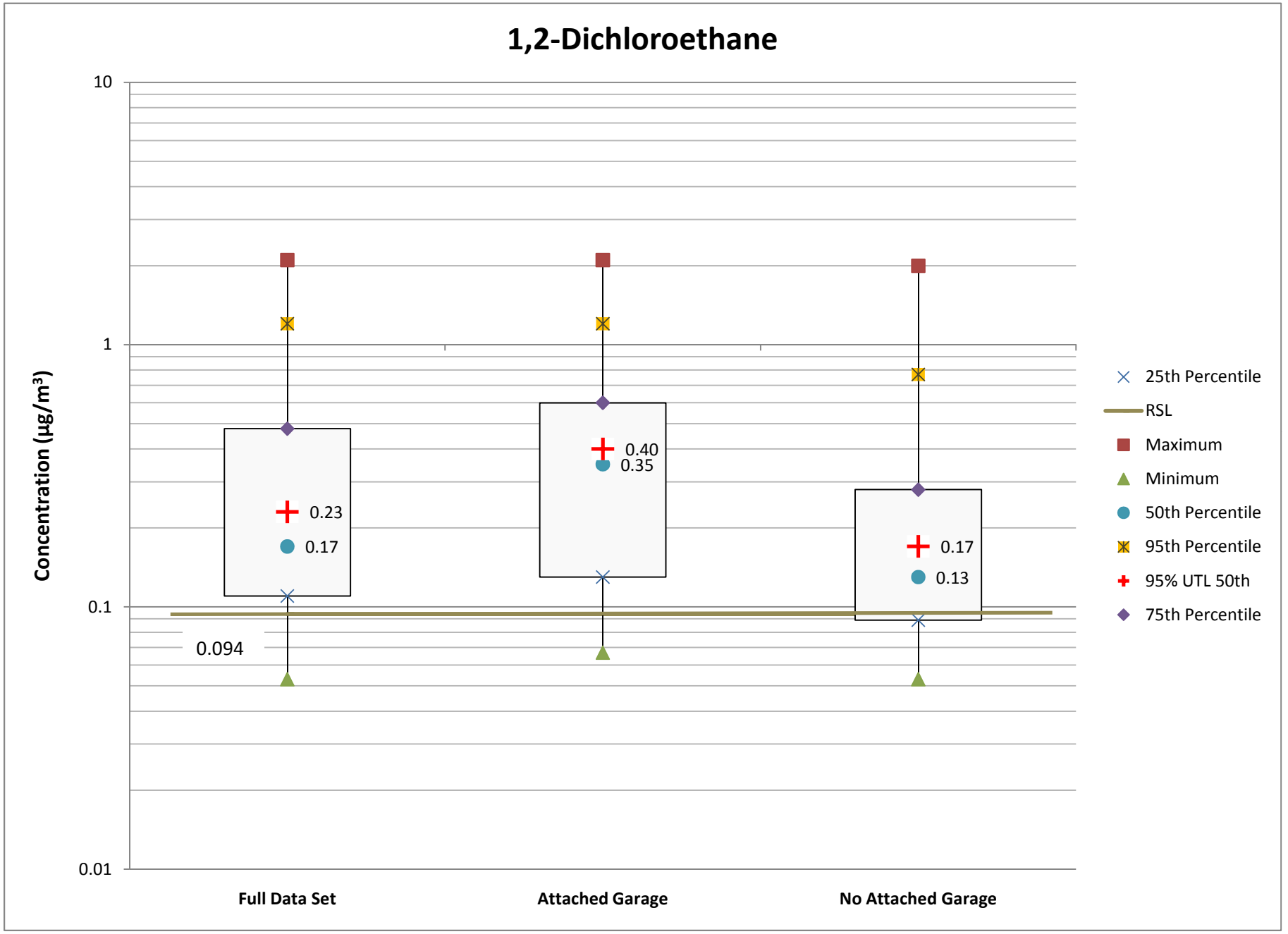
Summary Statistics for Raw Full Dataset

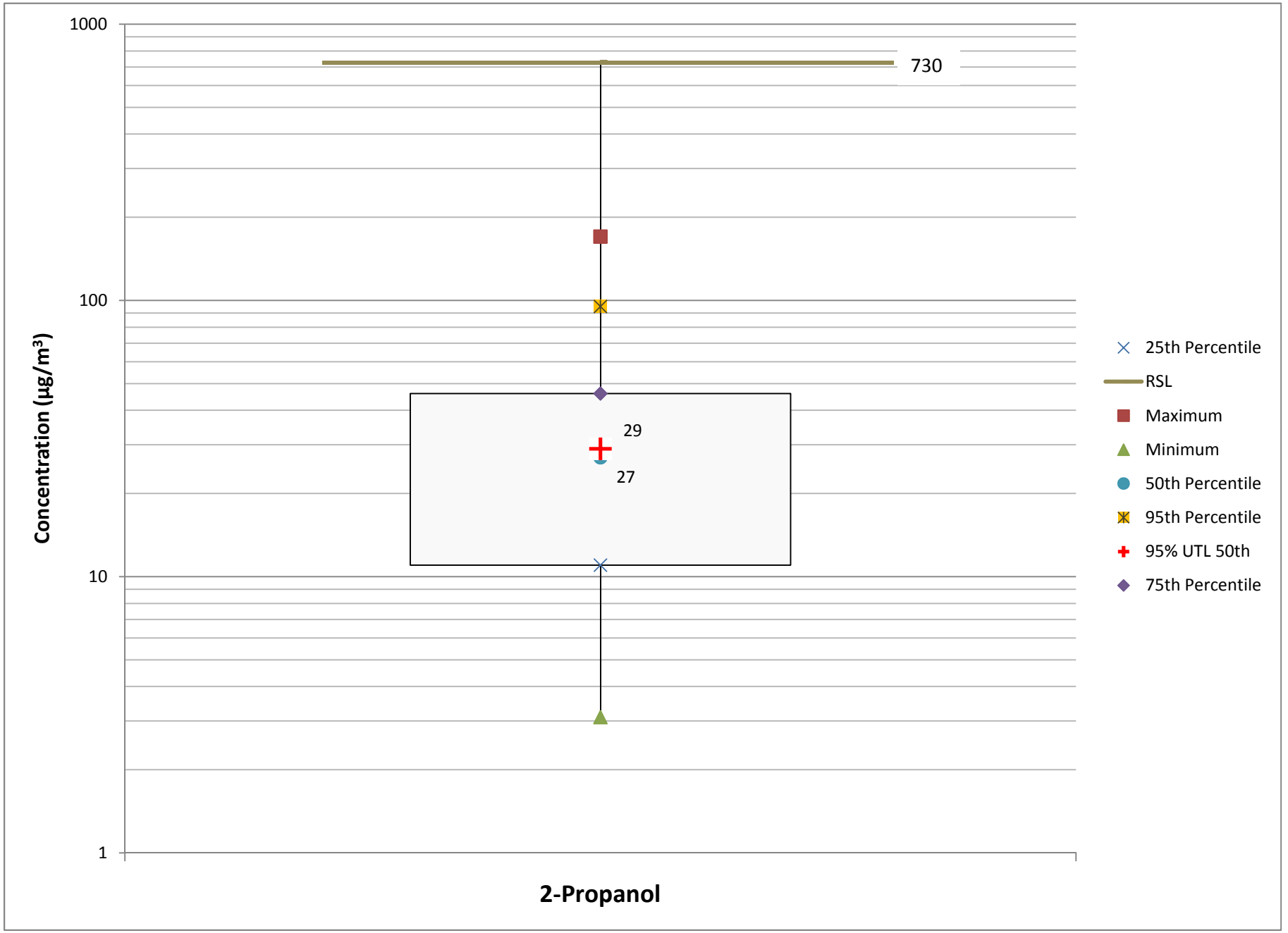
Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
C1	50	6.7	32	9.3	8.35	15.12	3.888	1.186	4.617	24.69	0.418

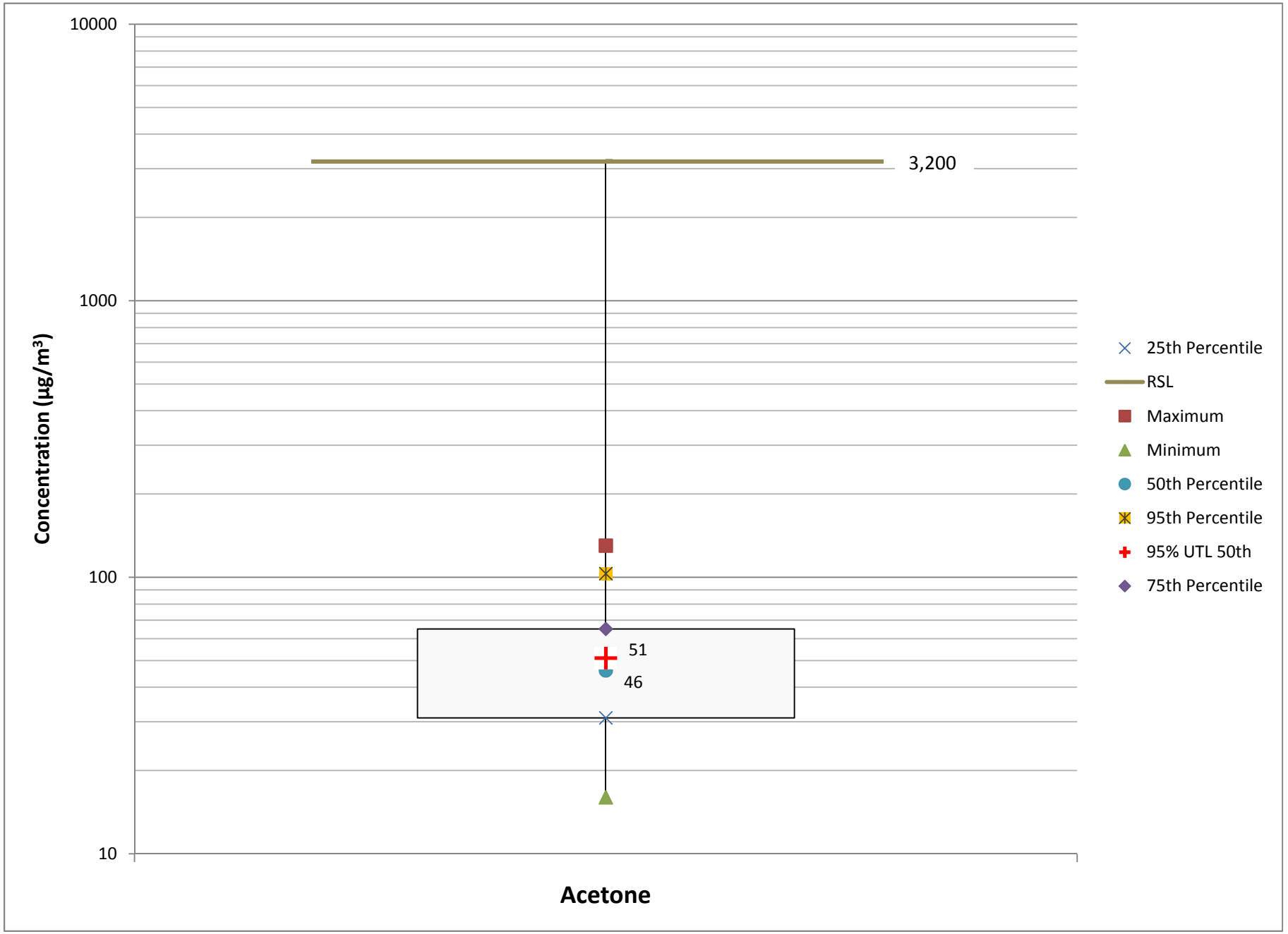
Percentiles for Raw Full Dataset

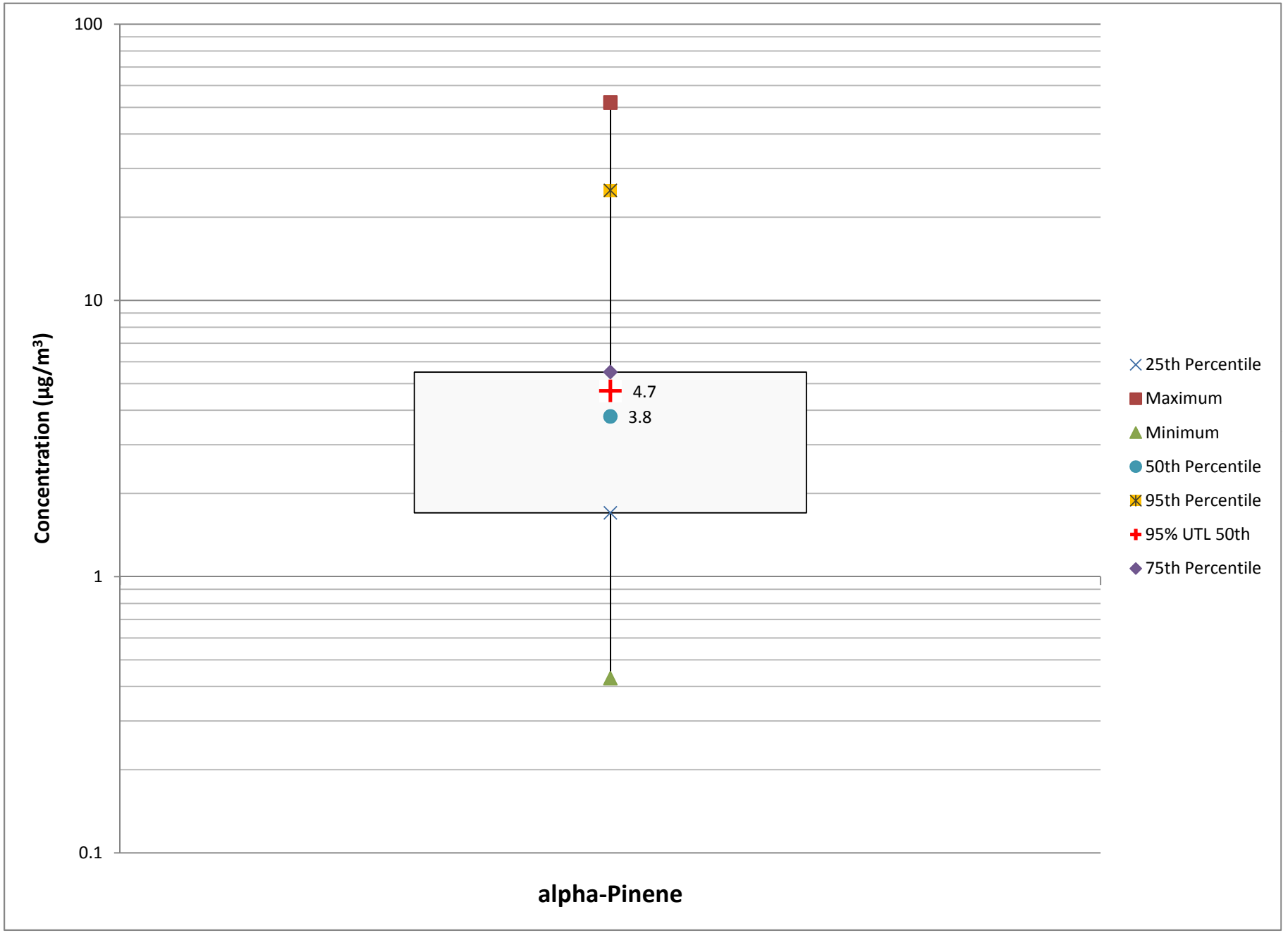
Variable	NumObs	5%ile	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
C1	50	7.1	7.29	7.68	7.7	8.35	9.3	9.32	10	14.55	25.63

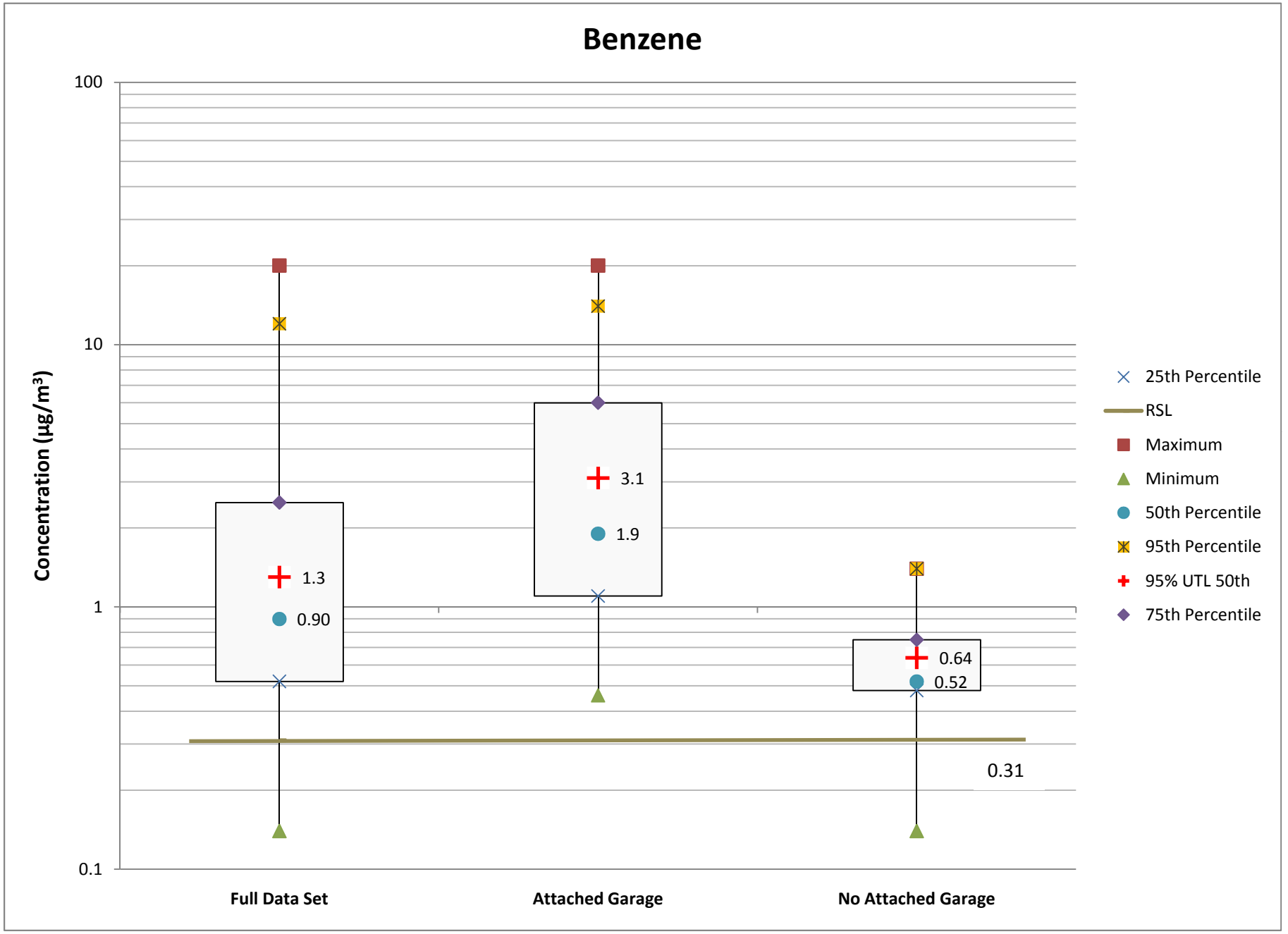
Appendix D

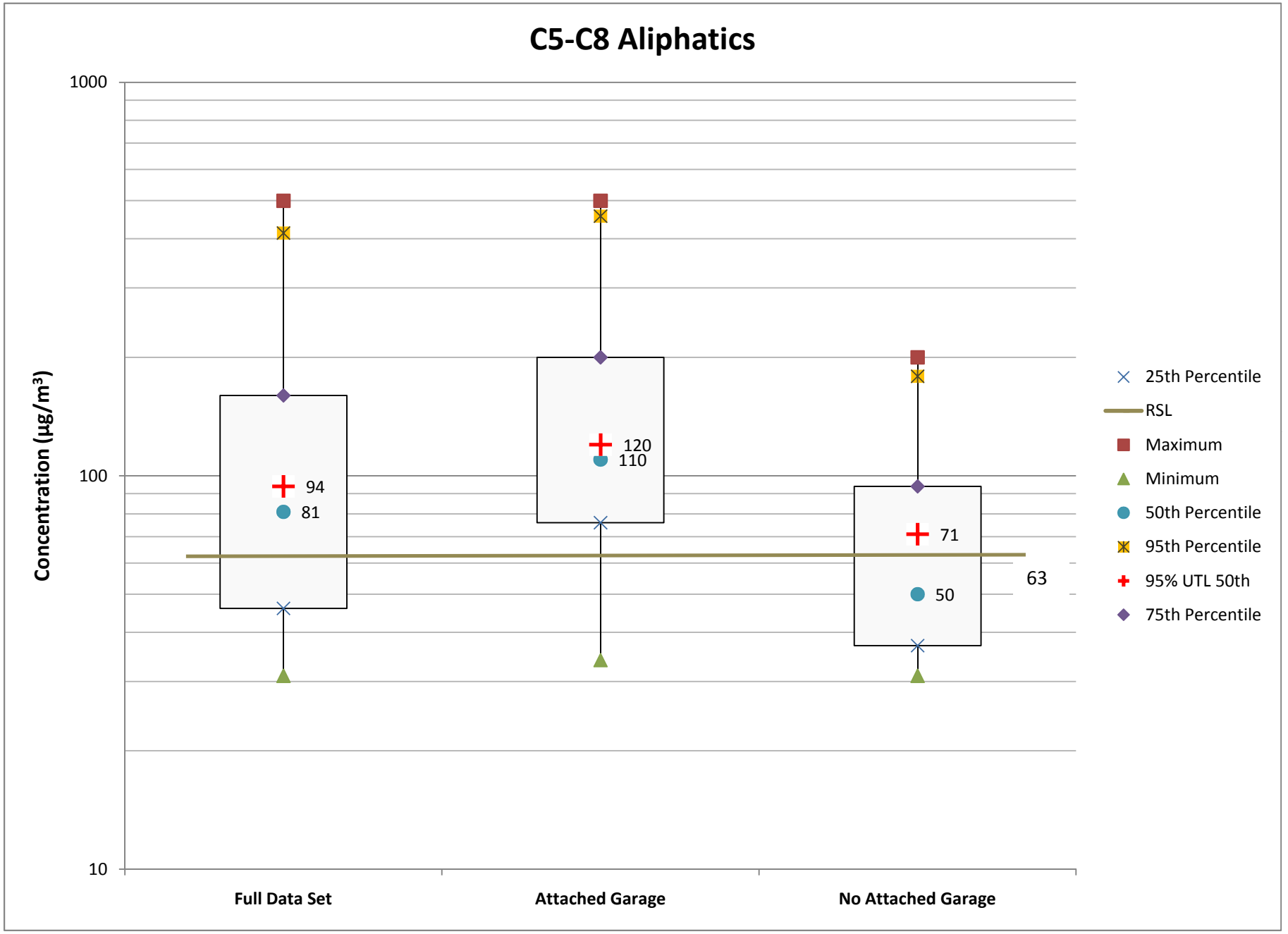

1,2-Dichloroethane
Concentration (µg/m³)
10
1
0.1
0.01
0.094
0.23
0.17
0.40
0.35
0.17
0.13
Full Data Set
Attached Garage
No Attached Garage
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

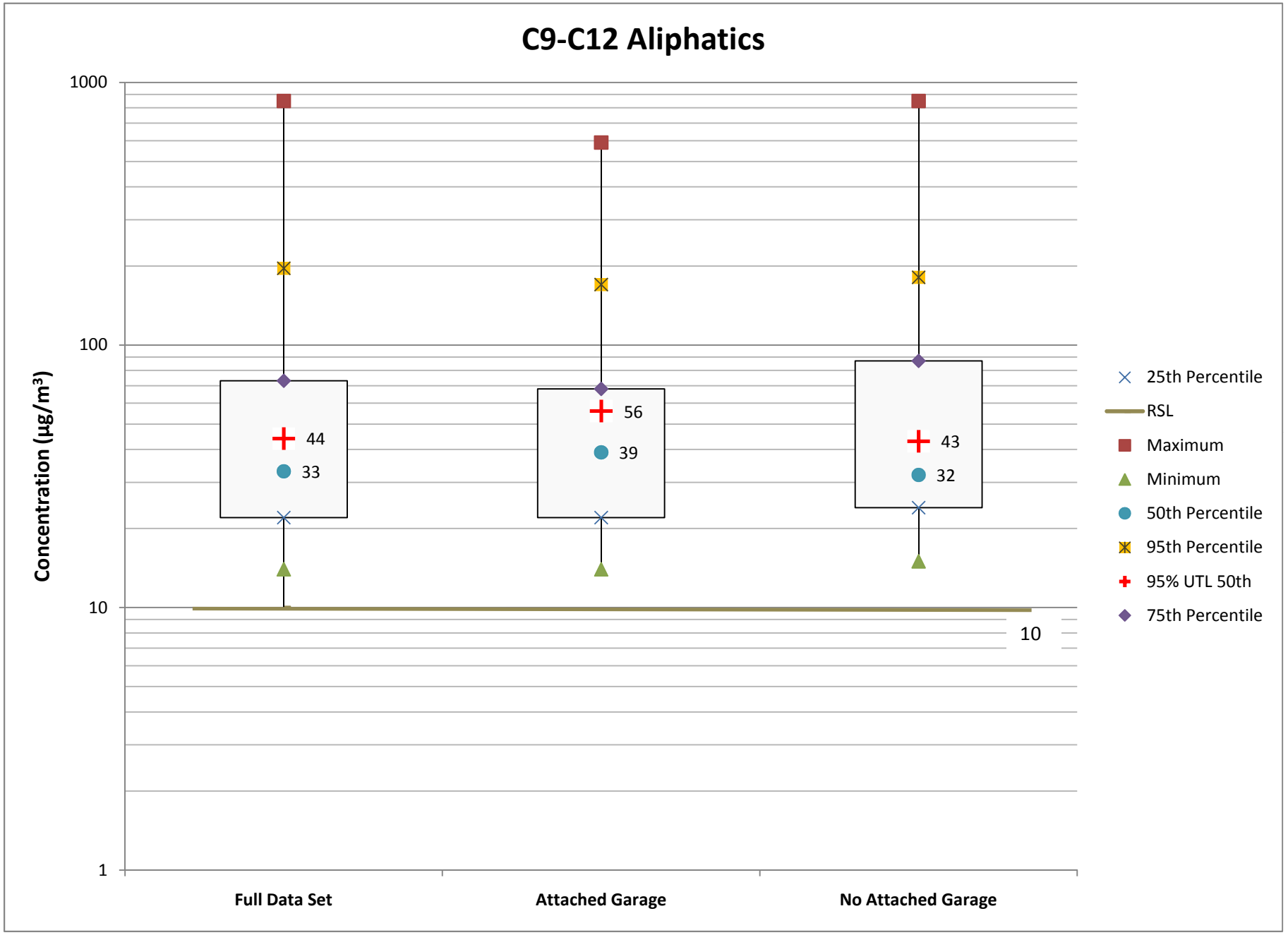

1000
100
10
1
Concentration (µg/m³)
730
29
27
2-Propanol
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

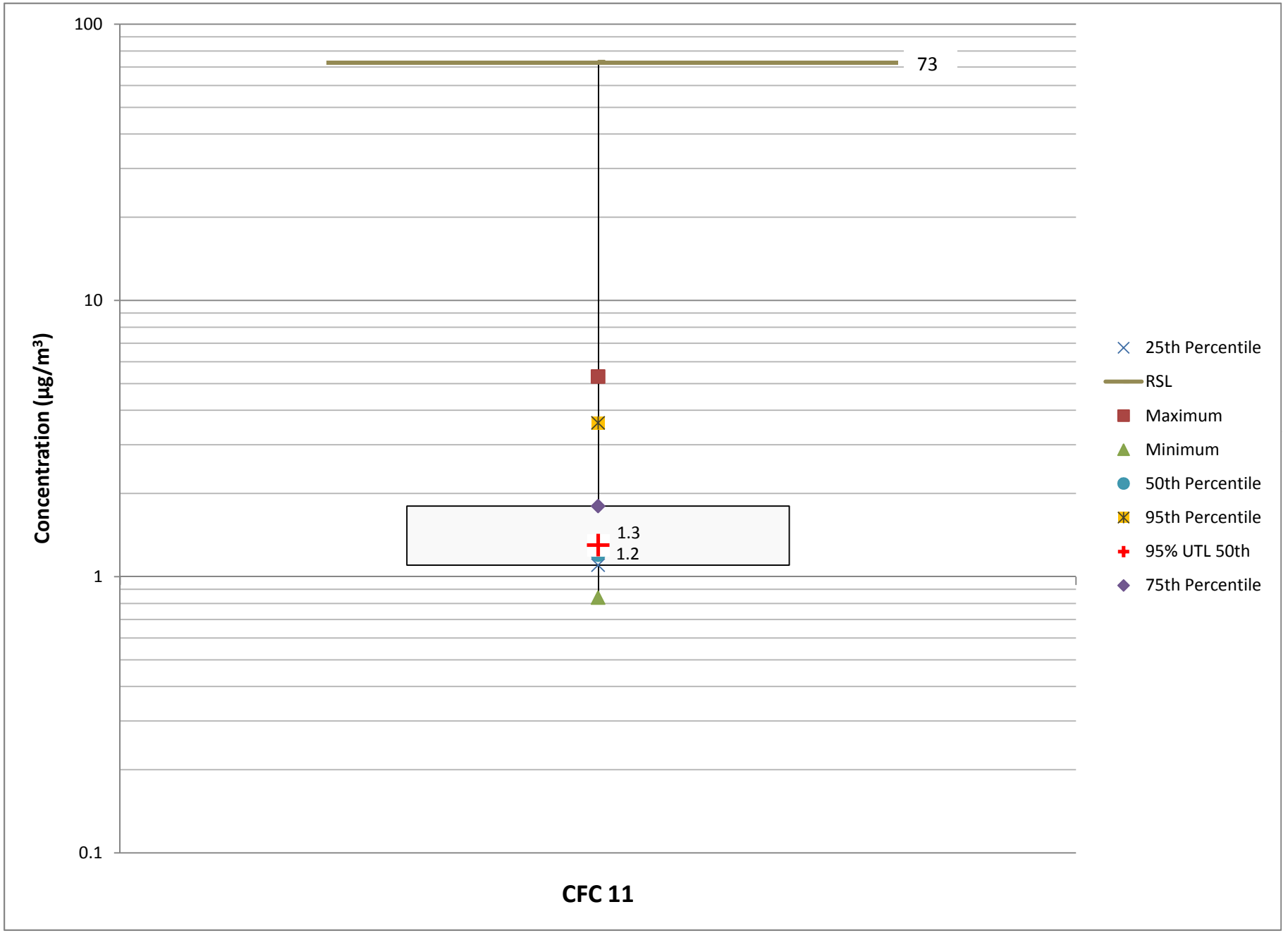

10000
1000
100
10
Concentration (µg/m³)
3,200
51
46
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile
Acetone

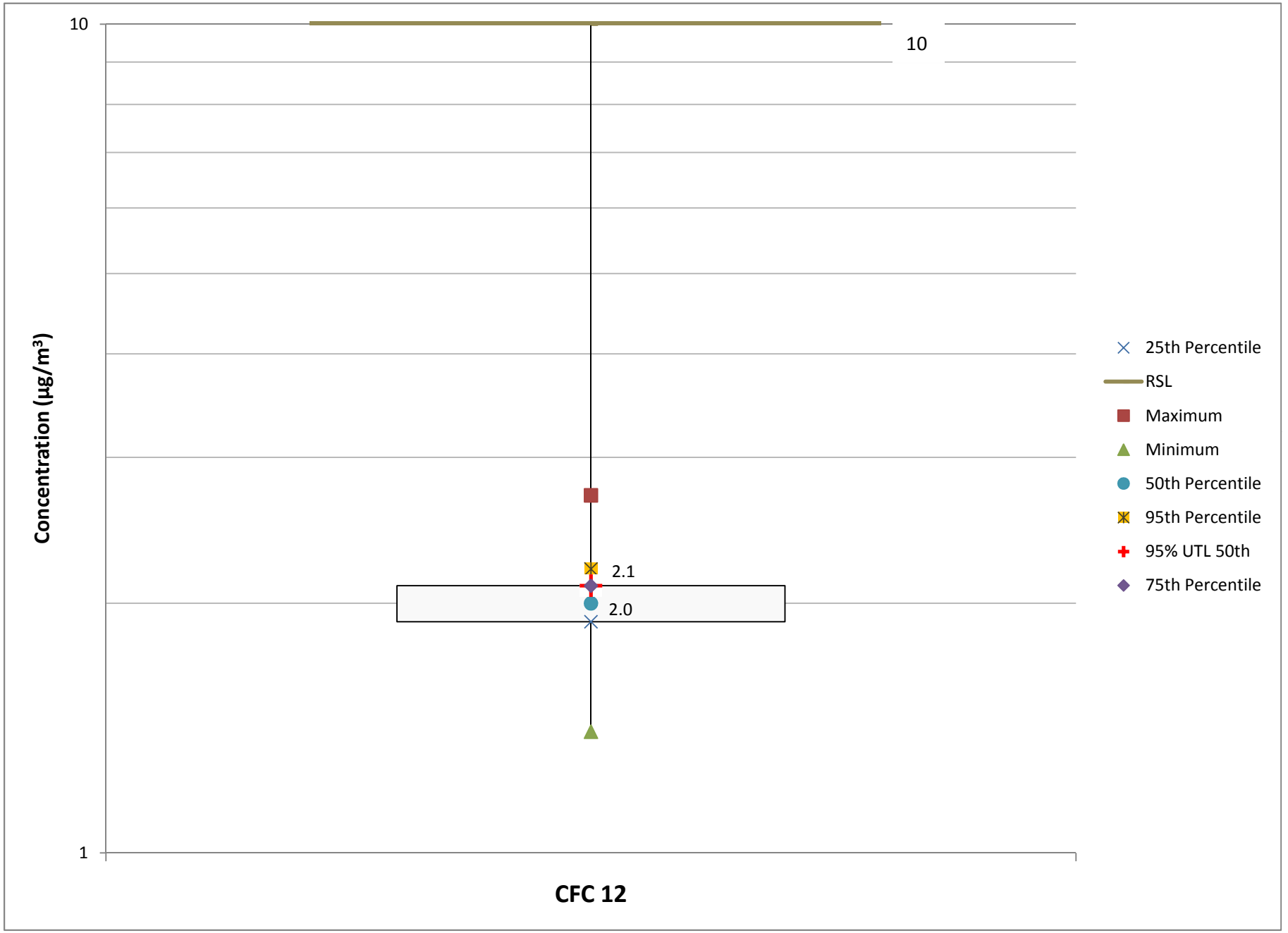

100
10
1
0.1
Concentration (µg/m³)
4.7
3.8
alpha-Pinene
25th Percentile
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

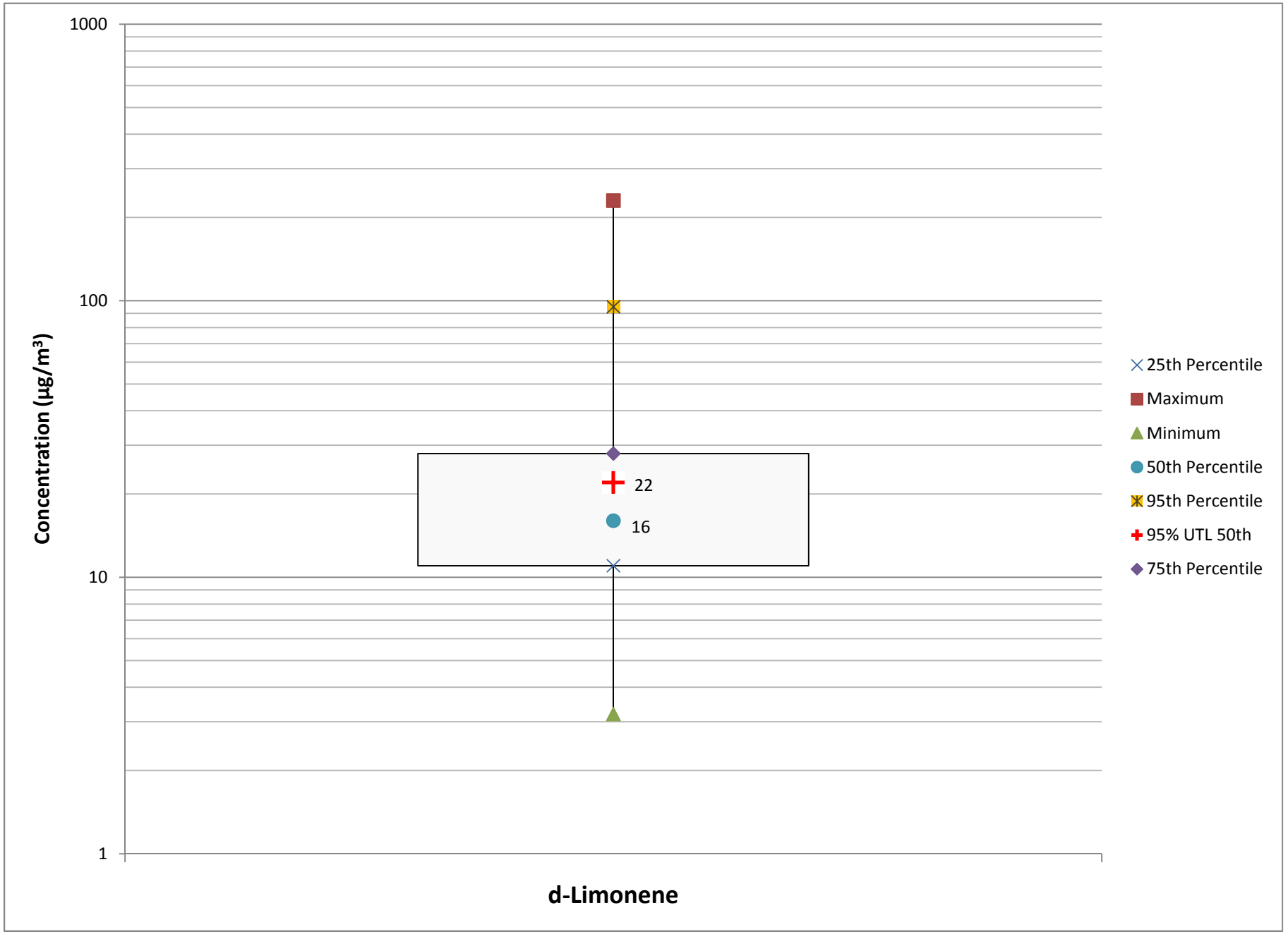

Benzene
100
10
1
0.1
Concentration (µg/m³)
1.3
0.90
3.1
1.9
0.64
0.52
0.31
Full Data Set
Attached Garage
No Attached Garage
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

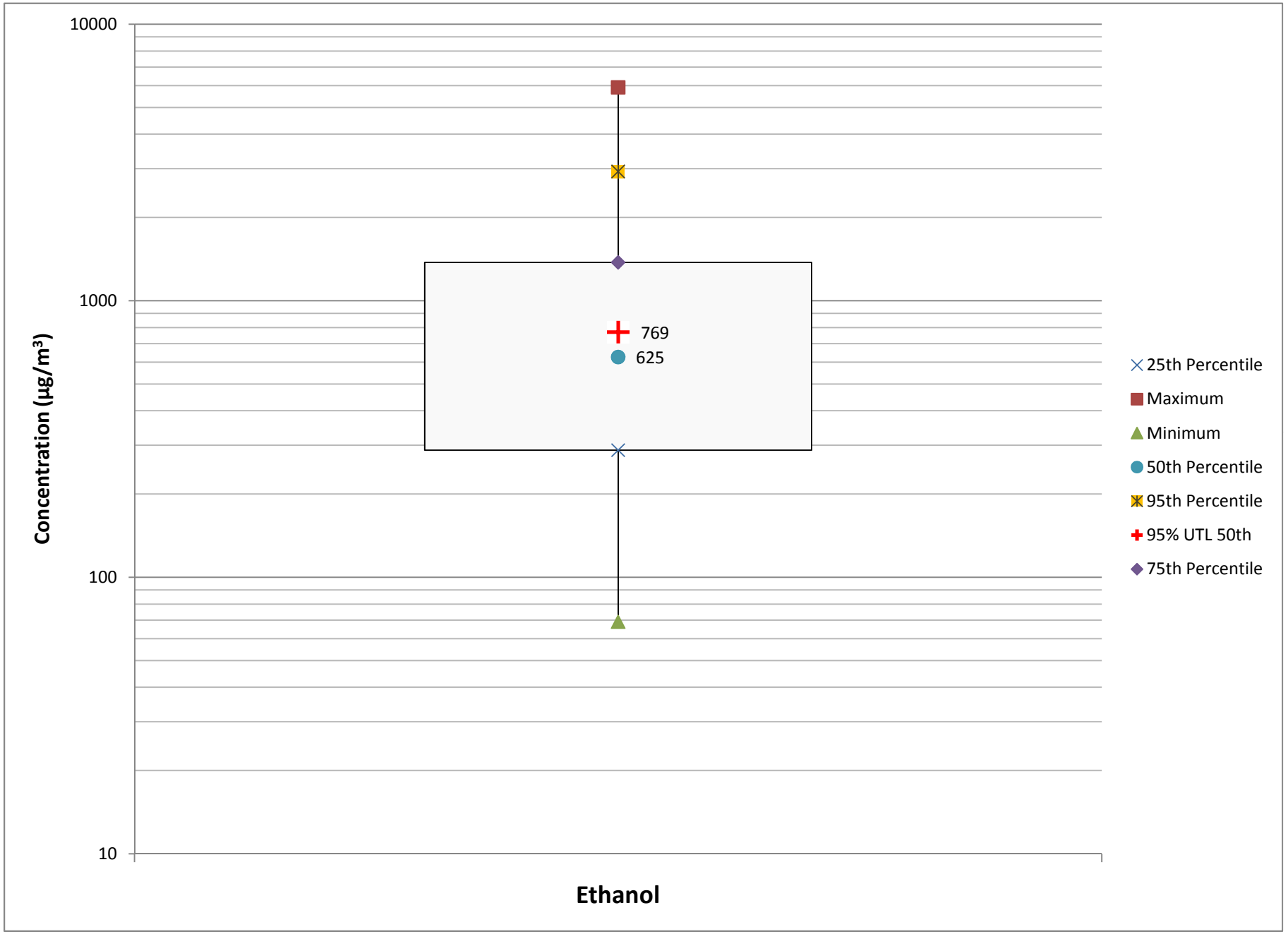

C5-C8 Aliphatics
1000
100
10
Concentration (µg/m³)
94
81
120
110
71
50
63
Full Data Set
Attached Garage
No Attached Garage
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

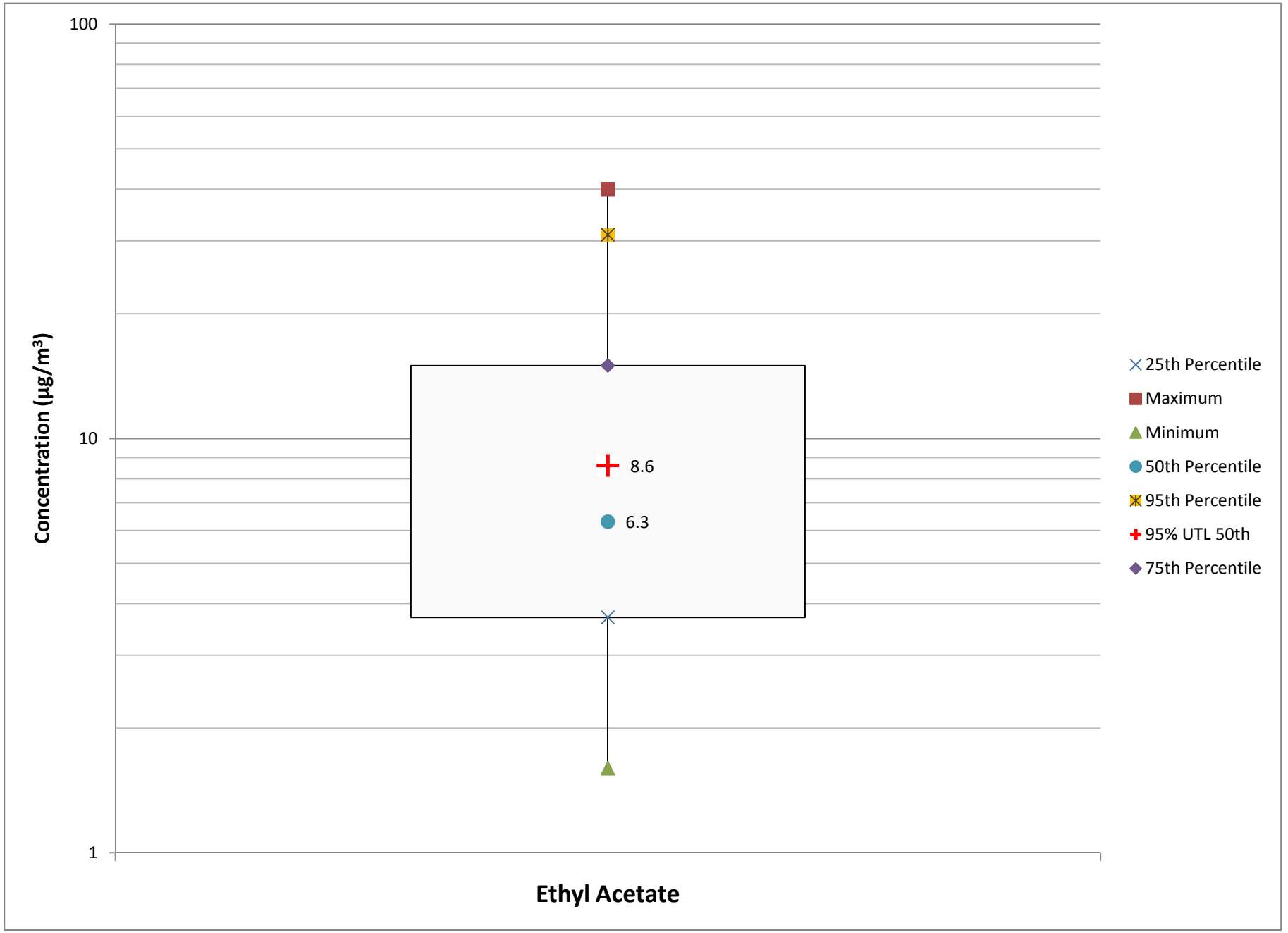

C9-C12 Aliphatics
1000
100
10
1
Concentration (µg/m³)
44
33
56
39
43
32
10
Full Data Set
Attached Garage
No Attached Garage
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

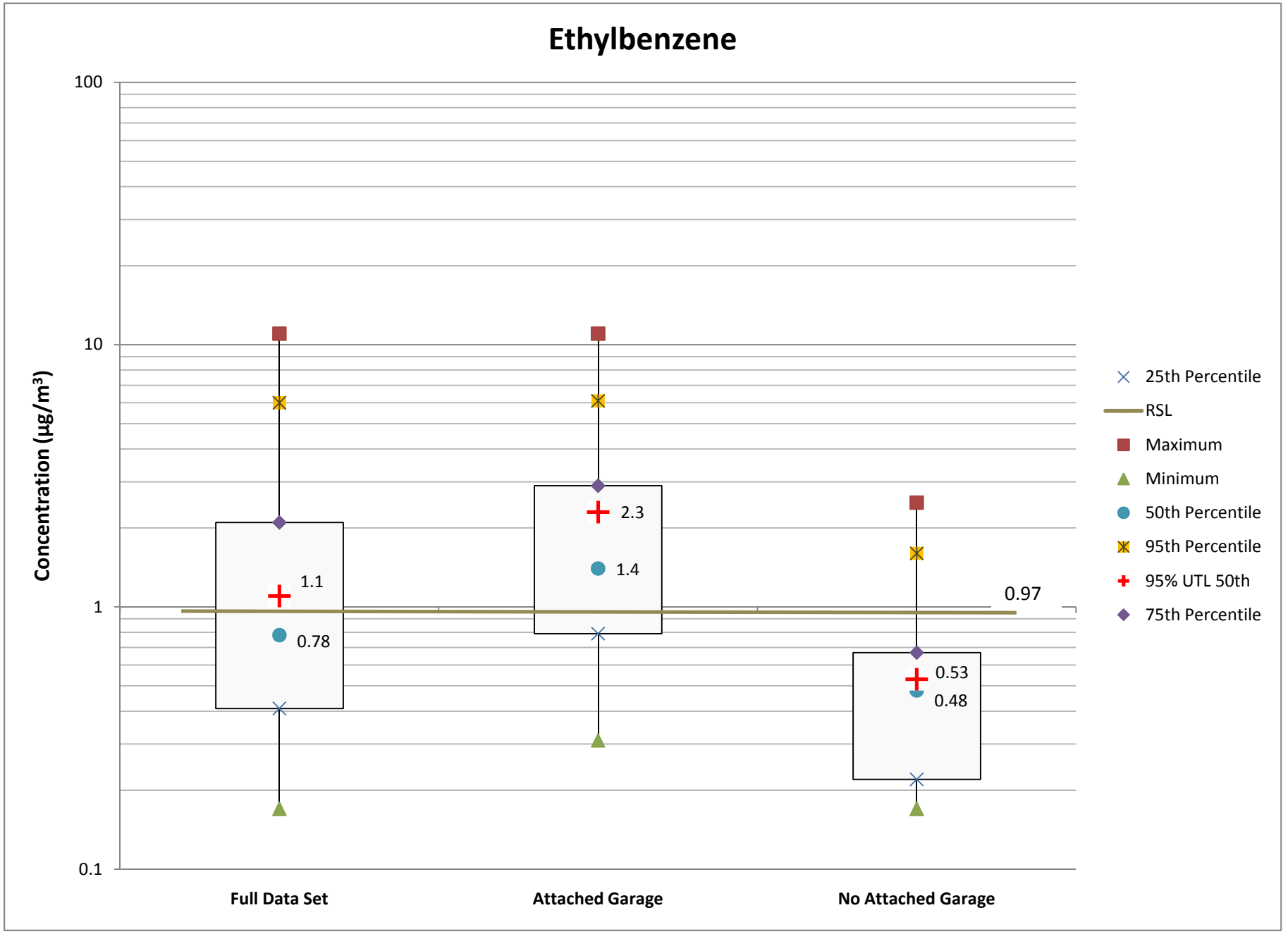

100
10
1
0.1
Concentration (µg/m³)
73
1.3
1.2
CFC 11
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

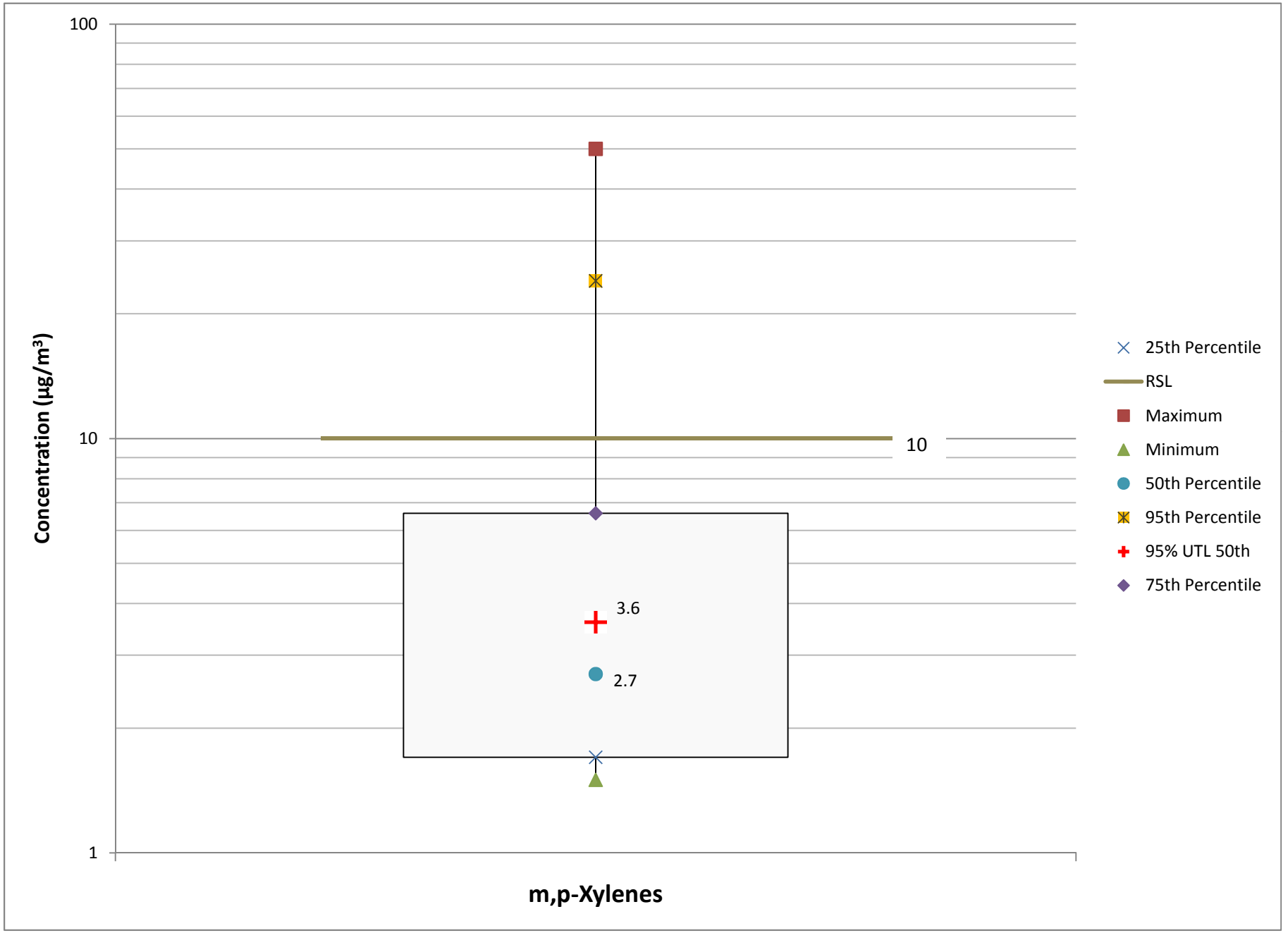

10
10
1
Concentration (µg/m³)
2.1
2.0
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile
CFC 12

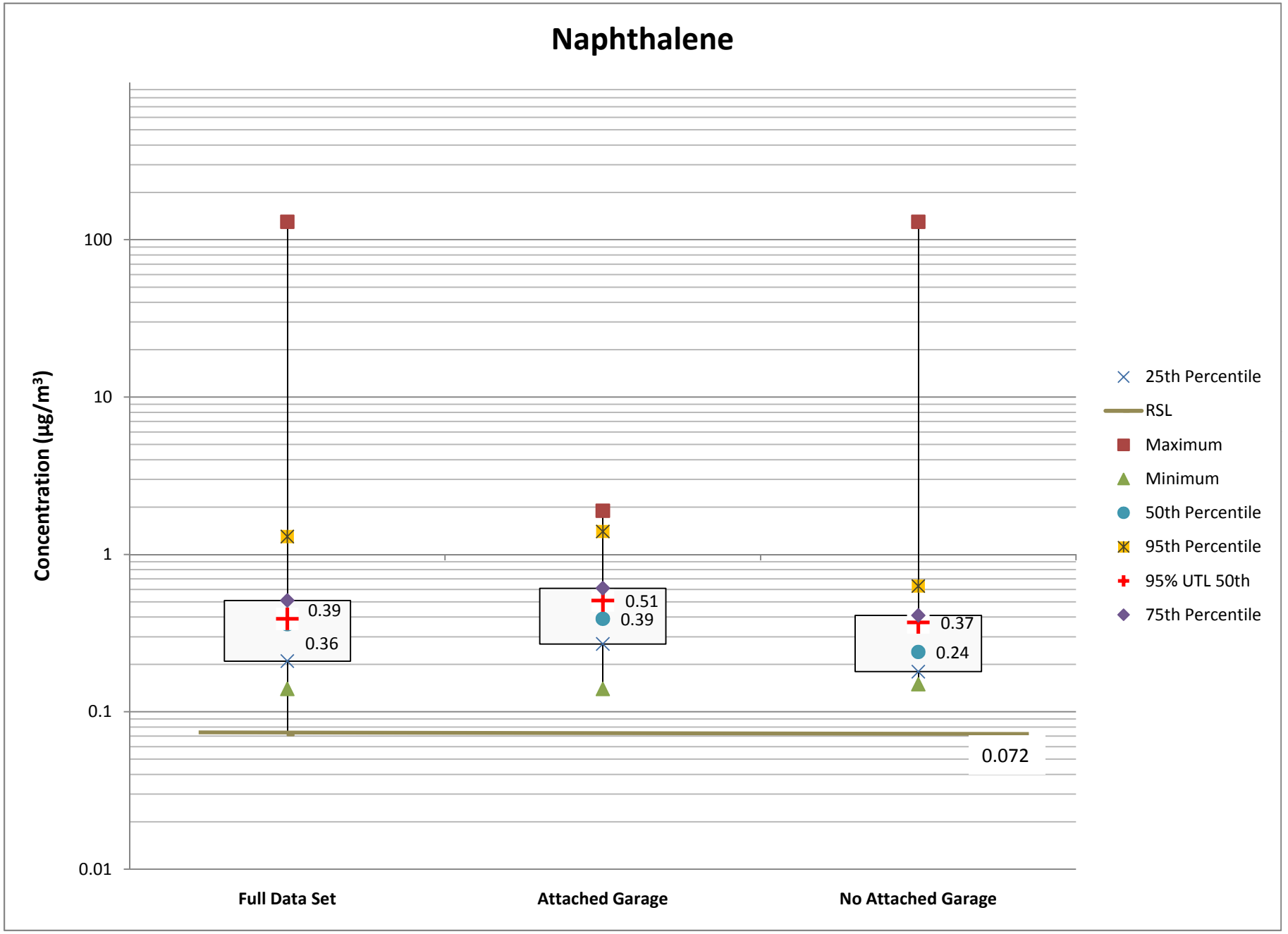

1000
100
10
1
Concentration (µg/m³)
22
16
d-Limonene
25th Percentile
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

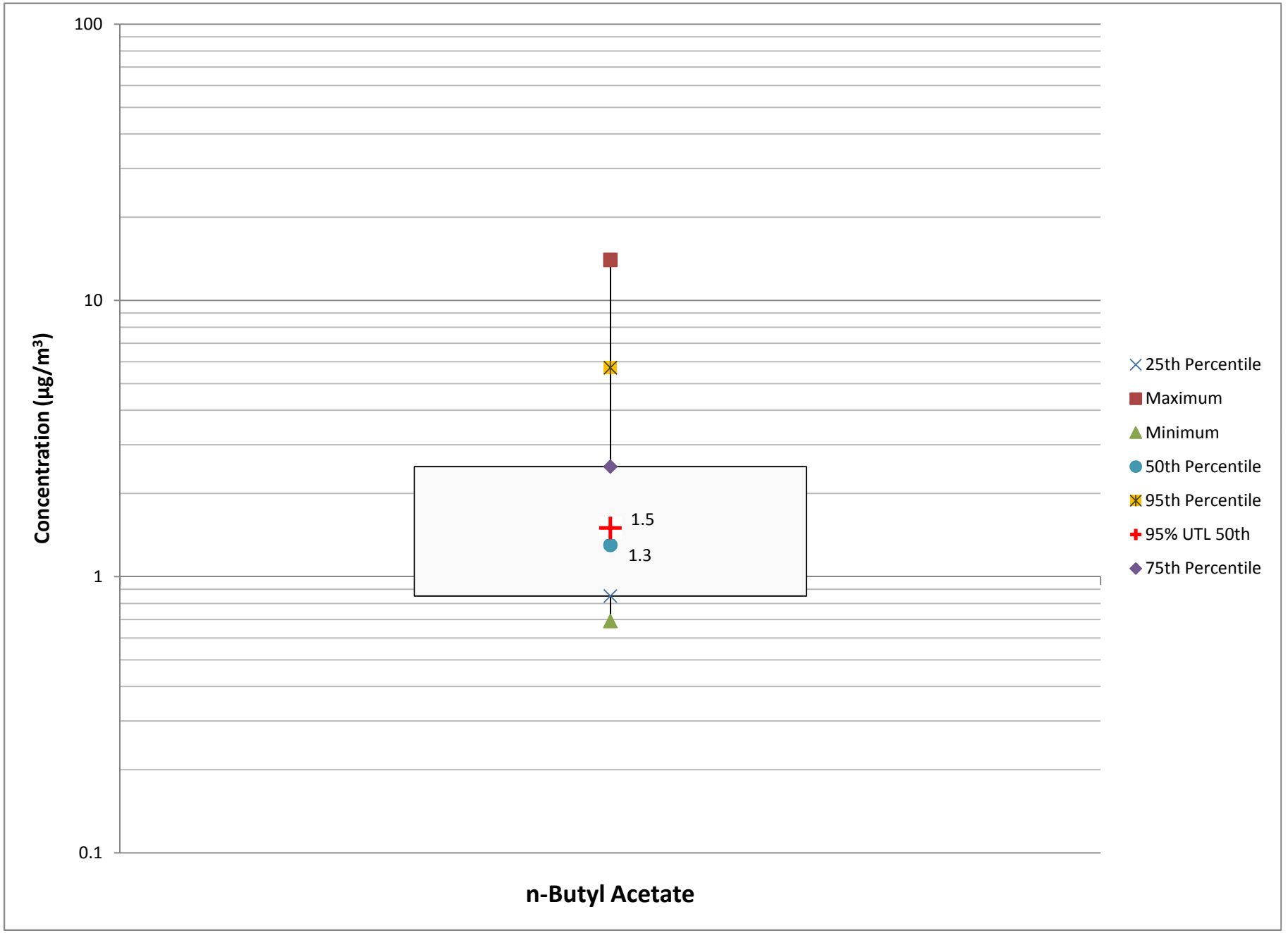

10000
1000
100
10
Concentration (µg/m³)
769
625
Ethanol
25th Percentile
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

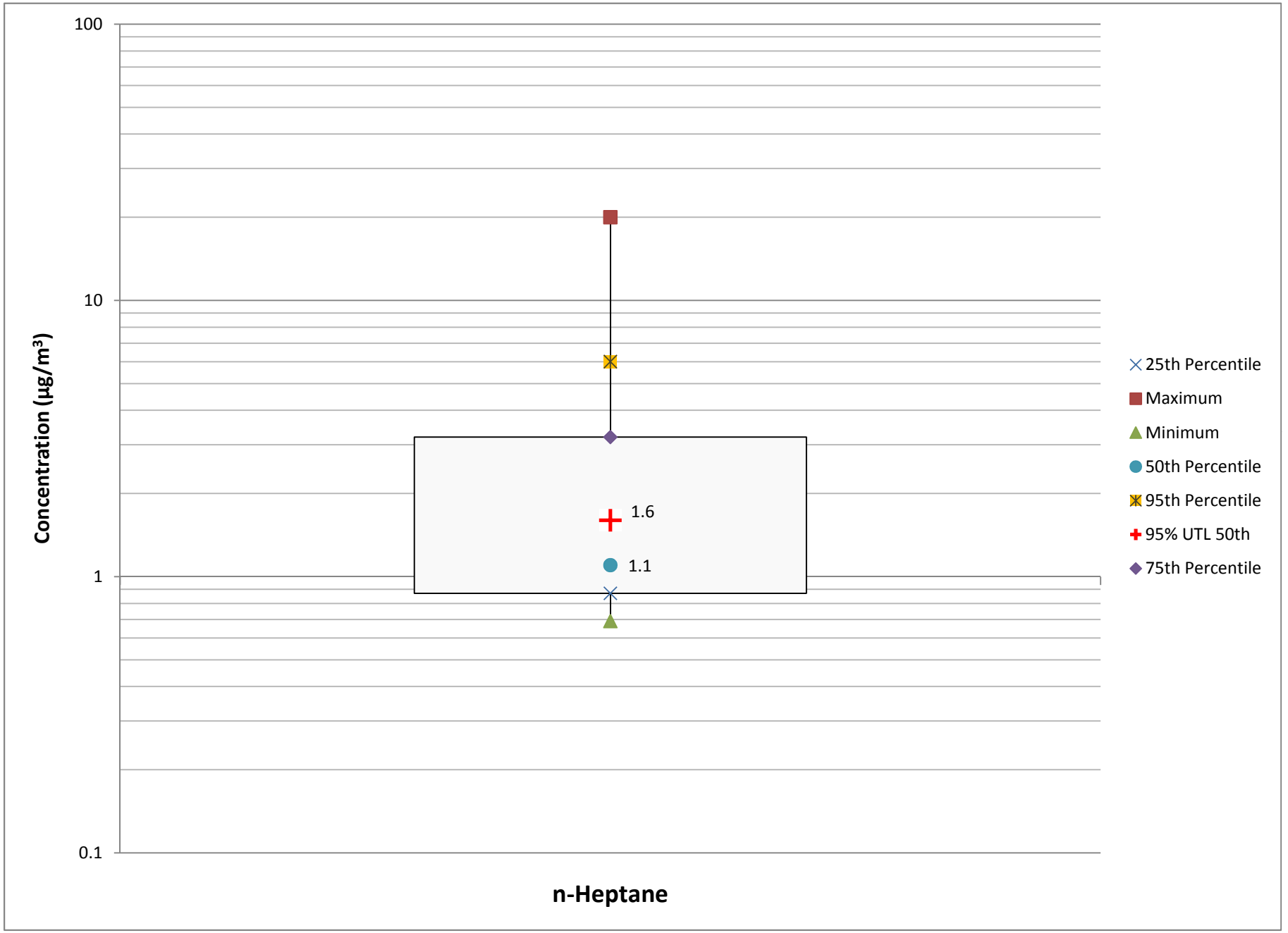

100
10
1
Concentration (µg/m³)
8.6
6.3
Ethyl Acetate
25th Percentile
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

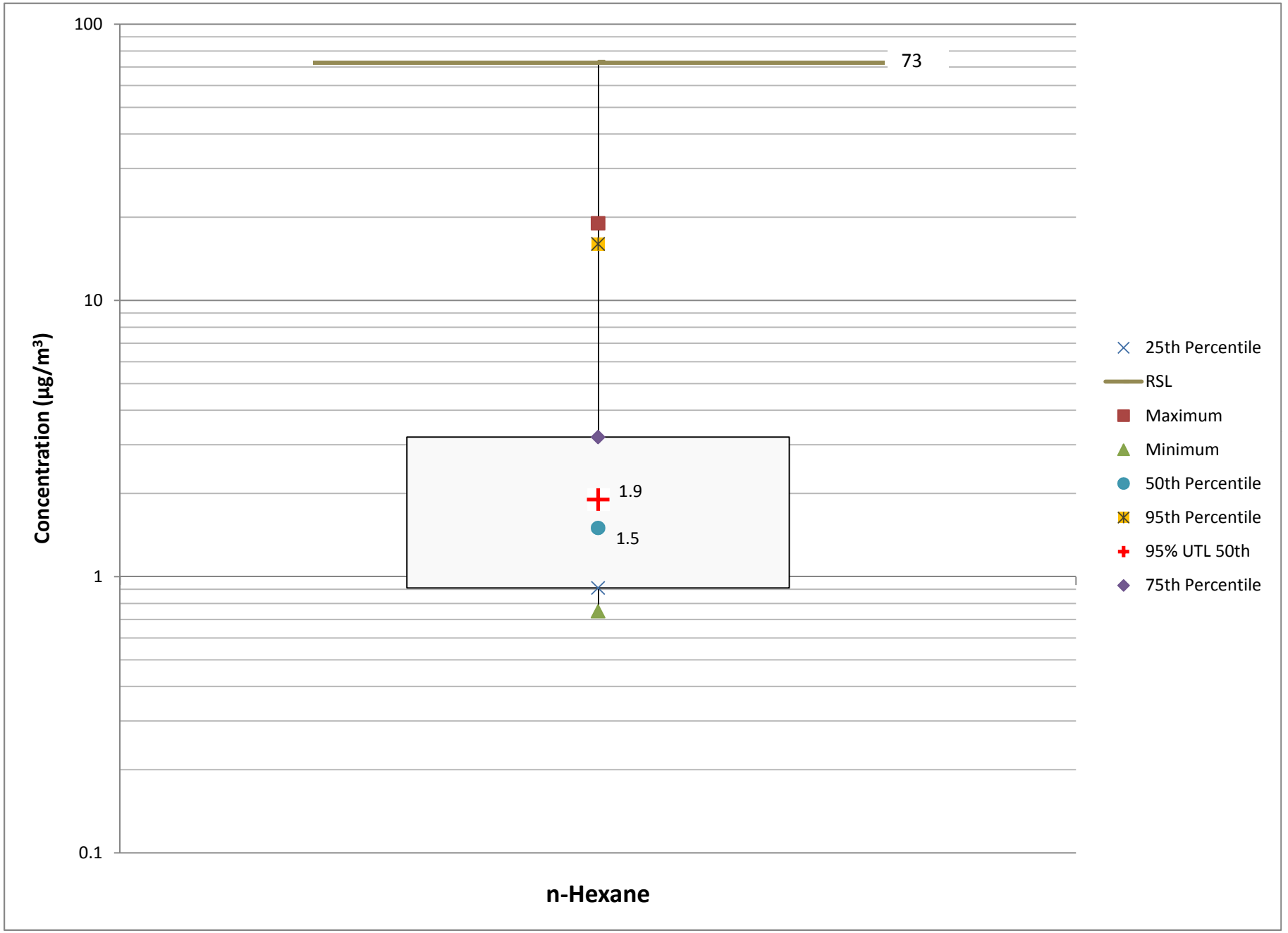

Ethylbenzene
100
10
1
0.1
Concentration (µg/m³)
1.1
0.78
2.3
1.4
0.53
0.48
0.97
Full Data Set
Attached Garage
No Attached Garage
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

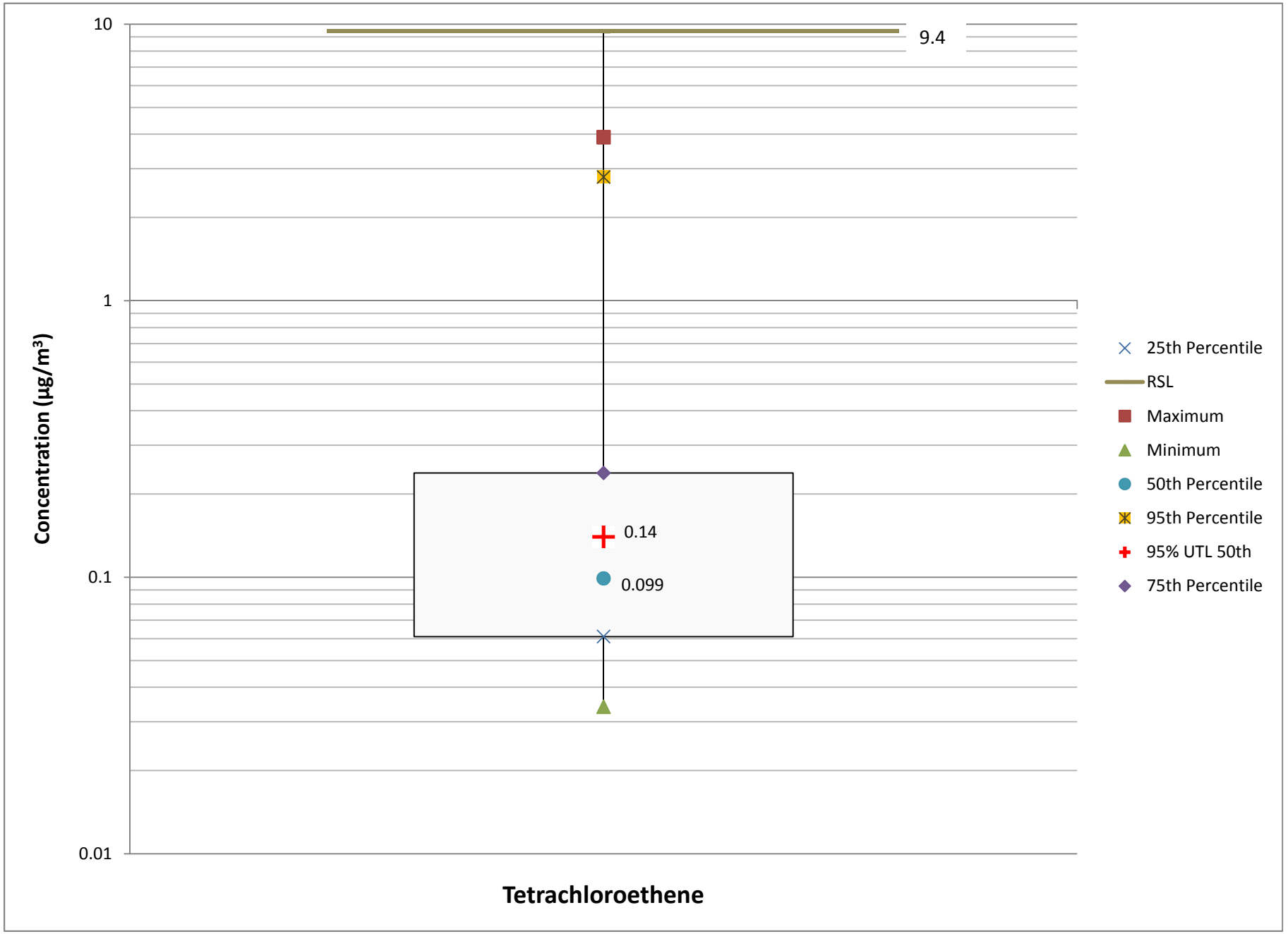

100
10
1
Concentration (µg/m³)
10
3.6
2.7
m,p-Xylenes
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

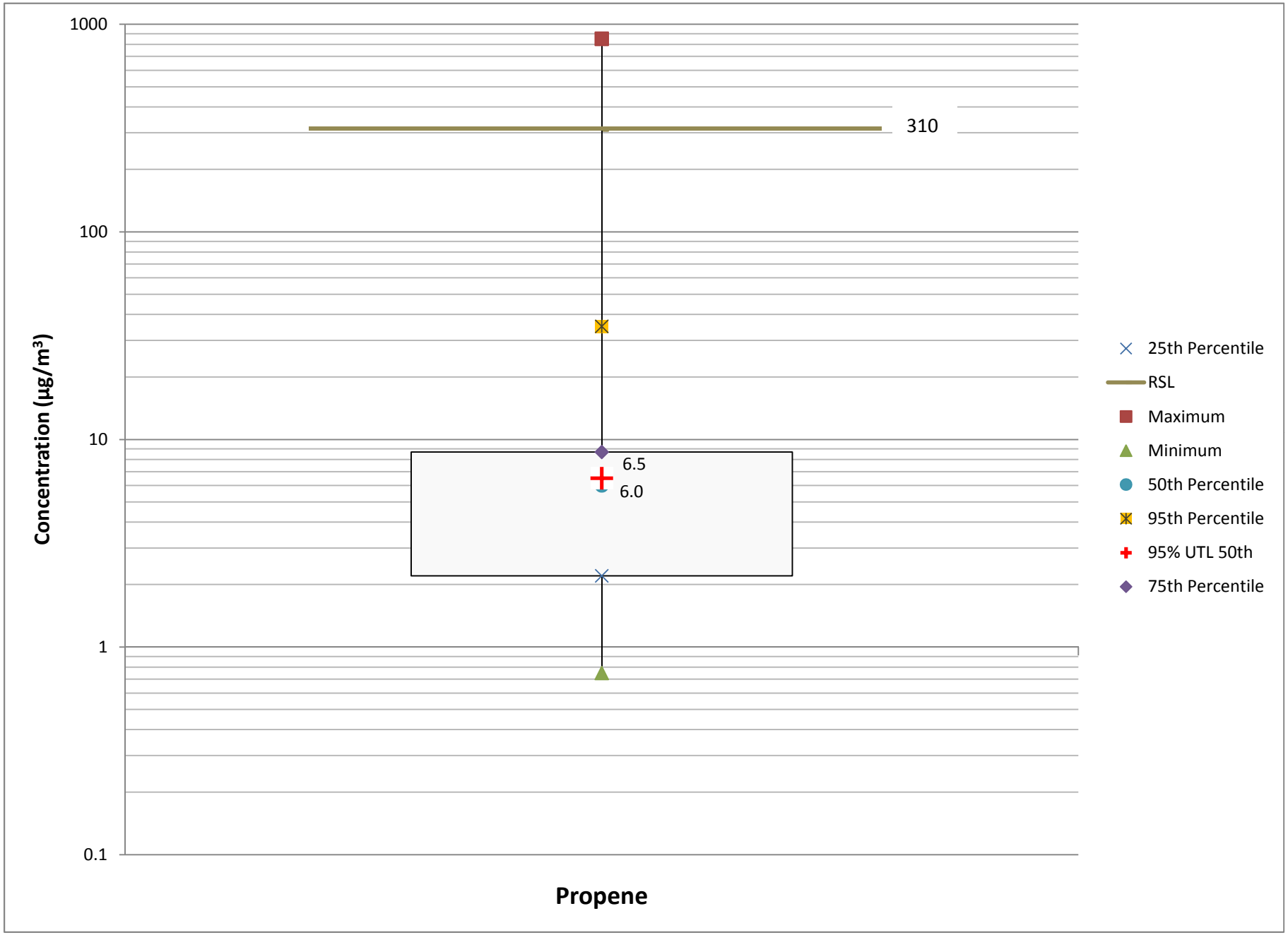

Naphthalene
Concentration (µg/m³)
100
10
1
0.1
0.01
0.39
0.36
0.51
0.39
0.37
0.24
0.072
Full Data Set
Attached Garage
No Attached Garage
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile

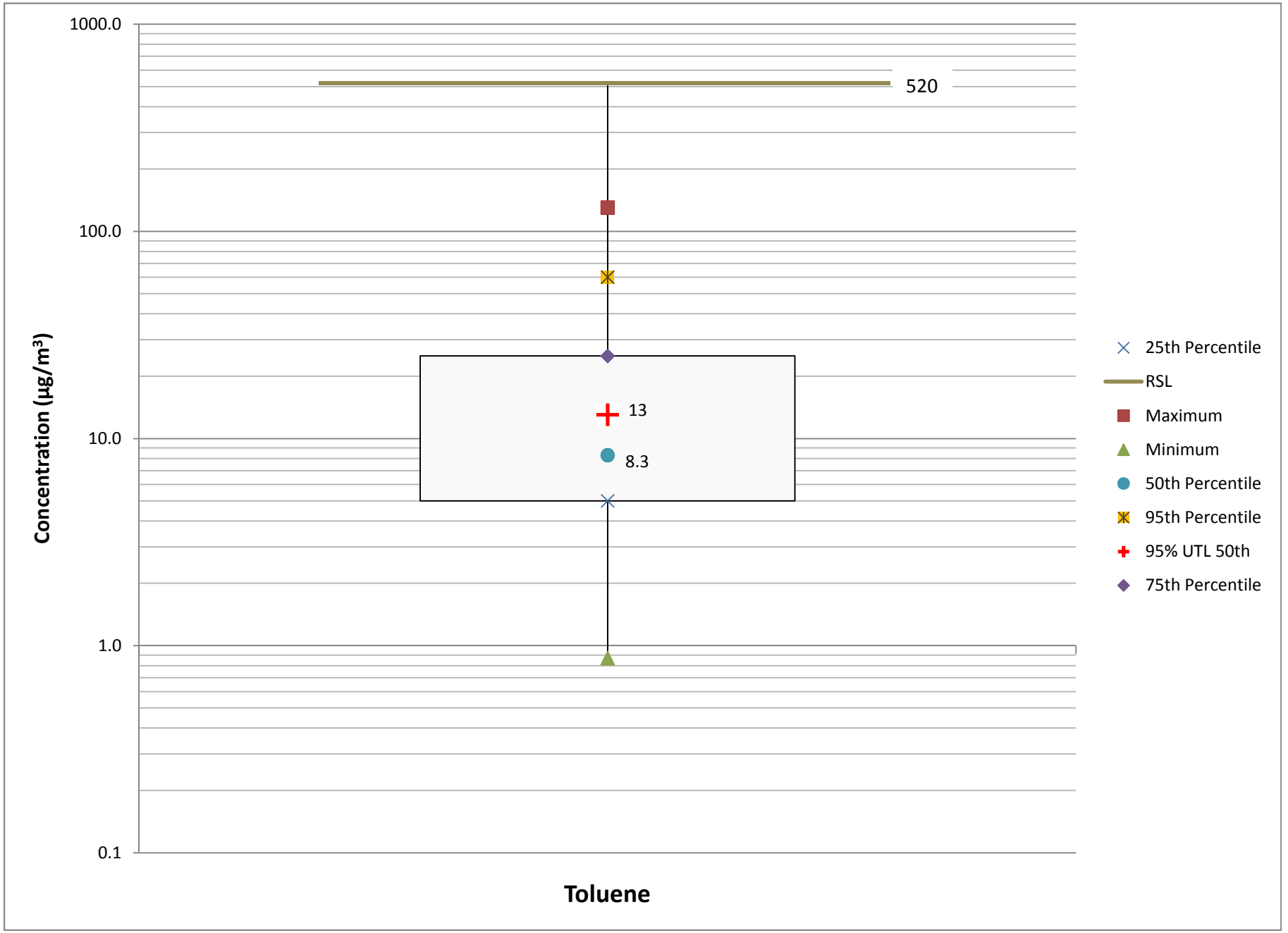

100
10
1
0.1
Concentration (µg/m³)
1.5
1.3
n-Butyl Acetate
25th Percentile
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile


100
10
1
0.1
Concentration (µg/m³)
1.6
1.1
n-Heptane
25th Percentile
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile


100
10
1
0.1
Concentration (µg/m³)
73
1.9
1.5
n-Hexane
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile


10
1
0.1
0.01
Concentration (µg/m³)
9.4
0.14
0.099
Tetrachloroethene
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile


1000
100
10
1
0.1
Concentration (µg/m³)
310
6.5
6.0
Propene
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile


1000.0
100.0
10.0
1.0
0.1
Concentration (µg/m³)
520
13
8.3
Toluene
25th Percentile
RSL
Maximum
Minimum
50th Percentile
95th Percentile
95% UTL 50th
75th Percentile