



Indoor Air Quality Survey **ATC** Project Number: Z035000383 Issue Date: August 1, 2019

# **MSU Denver - West Classroom Building**

# 1050 10th Street Plaza

# Denver, Colorado



Prepared By: ATC Group Services LLC 8985 East Nichols Avenue, Suite 350 Denver, Colorado Prepared For: Auraria Higher Education Center 1200 7th Street Denver, Colorado





August 1, 2019

Ms. Emily Sanders Manager, Environmental, Health & Life Safety Auraria Higher Education Center 1200 7th Street Denver, Colorado 80204 Email: <u>emily.sanders@AHEC.edu</u>

#### Re: Indoor Air Quality Survey MSU Denver - West Classroom Building 1050 10th Street Plaza Denver, Colorado 80204 ATC Project Number: Z035000383

Dear Ms. Sanders,

ATC Group Services LLC (ATC) is pleased to present this report outlining the results of the Indoor Air Quality Survey conducted on July 25, 2019, in the second floor offices at the MSU Denver - West Classroom Building, located at 1050 10th Street Plaza, in Denver, Colorado. This assessment was conducted in accordance with ATC Proposal No. 035-2019-0079, dated July 22, 2019. If you have any questions or concerns, please do not hesitate to contact us.

This report has been prepared in accordance with professional standard practices for indoor air quality assessments. ATC presents the data from this indoor air quality assessment as a finite set of information, based on the conditions observed on the date of the assessment. ATC makes no determinations and warrants no conclusions beyond those stated herein. Further, ATC submits this report to Auraria Higher Education Center for their exclusive use.

The findings of the report are based on conditions observed on July 25, 2019, and ATC's understanding that this assessment was conducted during normal working conditions at the assessment site.

**ATC Group Services LLC** Survey and report by:

-2

Kari Yenter Project Manager Direct Line: 303-248-8853 Email: <u>kari.yenter@atcgs.com</u>

Reviewed by:

1

Alex Peck, CIH, MBA Industrial Hygiene Manager, Western Region Direct Line: 425-273-3858 Email: alex.peck@atcgs.com





#### **Executive Summary**

ATC Group Services LLC (ATC) was retained by Auraria Higher Education Center (AHEC) to perform an indoor air quality (IAQ) survey to obtain general air quality baseline data in specific second floor offices selected by AHEC. The assessed areas included rooms 239C, 239D, 239F (areas of concern); and 240K and common area 240 (comparison areas) in the MSU – Denver West Classroom building, located at 1050 10th Street Plaza, in Denver, Colorado; herein after referred to as the Site. ATC understands that AHEC requested this IAQ survey to address employee concerns in offices 239C, 239D, and 239F.

This survey consisted of a visual assessment of the identified areas and of the air handling unit (AHU) that services the identified offices; monitoring air quality comfort parameters; monitoring for total volatile organic compounds (TVOCs); screening for ionizing radiation; collection of air samples for aldehydes, 27 heavy metals, radon, 61 volatile organic compounds (VOCs), 66 semi-volatile organic compounds (sVOCs), and non-viable fungal spores; and collection of dust samples. Mr. Alex Peck, an American Board of Industrial Hygiene (ABIH) Certified Industrial Hygienist (CIH) and Ms. Kari Yenter, an Industrial Hygienist Project Manager, both with ATC, conducted this IAQ survey on July 25, 2019.

#### Findings

At the time of the assessment, the air handling unit (AHU) appeared to be in good condition. Some water staining was observed on ceiling tiles in the office. No suspected visible microbial growth was observed and no excess moisture was detected in the occupied spaces during the survey. IAQ parameter measurements were all typical for an office environment and within ASHRAE recommendations. Radiation measurements did not reveal any apparent abnormalities.

Analytical results indicated that no aldehydes, sVOCs, or heavy metals were detected. Analytical results indicated that the measured concentrations of VOCs in the sample locations were low and within generally expected background concentration ranges. The concentrations of detected VOCs are well below applicable occupational exposure limits. The areas sampled for radon were at or below the detection limit and below applicable action levels.

The microbial air samples did not indicate an indoor source of microbial spores. Dust characterization analytical results indicated identifiable dust particles consistent with typical indoor office environments. Glass fiber was identified in three of the four samples, with the highest concentration found in office 239F.

#### **Conclusions and Recommendations**

Based on the visual observations, direct-reading meter monitoring and analytical results, IAQ parameters evaluated during this limited IAQ survey were within typical ranges for occupied office buildings and were below the applicable regulatory and voluntary exposure limits. Glass fiber is common in office dust and can cause irritation in sensitive individuals. ATC recommends the following:

- Regularly clean and dry water condensate from surfaces in the supply fan room of AHU #6 to prevent potential microbial growth.
- Consider replacing the water-stained ceiling tiles and replaced newly stained tiles as they are observed.
- Conduct cleaning of return vents periodically during normal housekeeping.
- Reduce glass fiber and general dust build-up by removing settled dust from horizontal surfaces during routine housekeeping.
- Continue to maintain comfort level parameters in the building in accordance to the ASHRAE recommendations.





...

#### **Table of Contents**

1.0	PROJECT INFORMATION	1
2.0	REGULATIONS AND EVALUATION CRITERIA	1
2.1	OSHA	1
2.2	ASHRAE	1
2.3	VOLATILE ORGANIC COMPOUNDS	2
2.4	SEMI-VOLATILE ORGANIC COMPOUNDS	2
2.5	IONIZING RADIATION	3
2.6	RADON	3
2.7	ALDEHYDES	3
2.8	HEAVY METALS	3
2.9	BIOAEROSOLS	4
2.10	DUST CHARACTERIZATION	4
3.0	METHODS AND EVALUATION CRITERIA	4
3.1	VISUAL INSPECTION	4
3.2	IAQ PARAMETER MEASUREMENTS	5
3.3	IONIZING RADIATION SCREENING	5
3.4	RADON	5
3.5	HEAVY METALS SAMPLING	5
3.6	ALDEHYDE SAMPLING	6
3.7	TOTAL VOC SCREENING	6
3.8	VOLATILE ORGANIC COMPOUND SAMPLING	6
3.9	SEMI-VOLATILE ORGANIC COMPOUND SAMPLING	7
3.10	BIOLOGICAL PARTICLE AIR SAMPLING	7
3.11	DUST CHARACTERIZATION	8
4.0	RESULTS	8
4.1	VISUAL ASSESSMENT	8
4.2	IAQ PARAMETER MEASURMENTS	9
4.3	TOTAL VOLATILE ORGANIC COMPOUNDS1	0
4.4	IONIZING RADIATION SCREENING1	0
4.5	ALDEHYDE SAMPLING1	0
4.6	HEAVY METALS1	0
4.7	RADON SAMPLING1	0
4.8	VOLATILE ORGANIC COMPOUND SAMPLING1	1
4.9	SEMI-VOLATILE ORGANIC COMPOUND SAMPLING1	3
4.10	BIOLOGICAL PARTICLE AIR SAMPLING1	4
4.11	DUST CHARACTERIZATION1	5
5.0	CONCLUSIONS AND RECOMMENDATIONS	6
6.0	LIMITATIONS1	6

## **Appendices**

Appendix A: Photograph Log

Appendix B: Analytical Laboratory Reports





#### 1.0 **PROJECT INFORMATION**

ATC Group Services LLC (ATC) was retained by Auraria Higher Education Center (AHEC) to perform an indoor air quality (IAQ) survey to obtain general air quality baseline data in specific second floor offices selected by AHEC. The assessed areas included rooms 239C, 239D, 239F (areas of concern); and 240K and common area 240 (comparison areas) in the MSU – Denver West Classroom building, located at 1050 10th Street Plaza, in Denver, Colorado; herein after referred to as the Site. ATC understands that AHEC requested this IAQ survey to address employee concerns in offices 239C, 239D, and 239F.

This survey consisted of a visual assessment of the identified areas and of the air handling unit (AHU) that services the identified offices; monitoring air quality comfort parameters including carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), temperature and relative humidity (RH); monitoring for total volatile organic compounds (TVOCs); screening for ionizing radiation; collection of air samples for aldehydes, 27 heavy metals, radon, 61 volatile organic compounds (VOCs), 66 semi-volatile organic compounds (sVOCs), and non-viable fungal spores; and collection of dust samples. Mr. Alex Peck, an American Board of Industrial Hygiene (ABIH) Certified Industrial Hygienist (CIH) and Ms. Kari Yenter, an Industrial Hygienist Project Manager, both with ATC, conducted this IAQ survey on July 25, 2019. The areas of concern were not occupied at the time of our assessment.

#### 2.0 REGULATIONS AND EVALUATION CRITERIA

#### 2.1 OSHA

The Occupational Safety and Health Administration (OSHA) established regulatory levels of airborne chemicals at which the majority of employees may be exposed when averaged over an eight-hour day or during a 15-minute time period without adverse effects. These regulatory, enforceable standards are published in 29 Code of Federal Regulations (CFR) §1910.1000 as Permissible Exposure Limits (PELs) and Short Term Exposure Limits (STELs), respectively. The PELs and STELs are based on health criteria rather than comfort, and apply more to a manufacturing industrial setting than to an office setting. OSHA has established PELs for CO and  $CO_2$ .

OSHA does not currently have specific standards addressing IAQ. The General Duty Clause of the OSH Act (the law that created OSHA) requires employers to provide workers with a safe workplace that does not have any known hazards that cause or are likely to cause death or serious injury.

Temperature and relative humidity are two important factors affecting IAQ. Since these are a matter of personal comfort, OSHA <u>will not cite</u> an employer for failing to maintain temperature and relative humidity within a certain range. OSHA recommends temperatures in the range of 68 to 76 degrees Fahrenheit (°F) and relative humidity in the range of 20 to 60%.

#### 2.2 ASHRAE

#### 2.2.1 Temperature and Relative Humidity

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has published recommendations regarding thermal comfort in ASHRAE Standard 55-2017, Thermal Environmental Conditions for Human Occupancy. The standard indicates that temperatures





#### 2.2.2 Carbon Dioxide

Carbon dioxide, also known as  $CO_2$ , is a product of combustion and human respiration. The amount of  $CO_2$  in buildings is primarily a function of the amount of outside air delivery to the occupied space, the effectiveness of air distribution within the space, and the occupancy of the space. It is generally accepted that an inadequate fresh air supply may cause the feeling of stuffiness and other IAQ complaints due to a general build-up of non-specific contaminants and odors.

According to ASHRAE Standard 62.1-2016, *Ventilation for Acceptable Air Quality*, the indoor CO<sub>2</sub> concentration generally should not exceed outdoor concentrations by more than 700 parts per million (ppm).

#### 2.2.3 Carbon Monoxide

Carbon monoxide, also known as CO, is a tasteless, odorless gas and is a byproduct of incomplete combustion. CO is also a chemical asphyxiant and can cause headaches, nausea, rapid breathing, weakness, exhaustion, dizziness, and confusion. CO usually originates from outside the building from such sources as automotive traffic and loading docks. Internal sources may include environmental tobacco smoke, boilers and furnaces. Assuming internal sources are limited, monitoring for CO is a useful surrogate for determining if outside air intakes are being negatively impacted by automotive traffic and surrounding industrial sources.

The OSHA PEL for CO is 50 ppm as an 8-hour time-weighted average (TWA). The National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limit (REL) is 35 ppm as an 8-hour TWA. The United States Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS) for CO are 9 ppm for 8 hours and 35 ppm for 1 hour.

#### 2.3 VOLATILE ORGANIC COMPOUNDS

VOCs are carbon-containing chemicals that can be emitted from building materials, office products, and furnishings. Many specific VOCs are known to cause adverse health effects to people who are exposed at high concentrations. Some data suggests that elevated total VOCs (TVOCS) are associated with increased reports of health complaints from building occupants.

The concentrations of VOCs measured in indoor air are often significantly higher than outdoors. The concentrations detected in offices are usually orders of magnitude below the occupational exposure limits; however, some VOCs may be present above their human odor thresholds (e.g., perfumes, cleaning solutions).

The effects of low levels of TVOCs are not well understood. Hence, acceptable levels of TVOCs reported in the literature vary, and there are no regulatory standards for TVOC. The American Industrial Hygiene Association (AIHA) has recommended that TVOCs, as sampled by a photoionization detector (PID), should be in the range from none detected to 1 ppm.

#### 2.4 SEMI-VOLATILE ORGANIC COMPOUNDS

Semi-volatile organic compounds are a subgroup of VOCs that have lower volatility than other VOCs due to higher molecular weight or boiling point. Similar to VOCs, sVOCs are associated





with building materials, office products, and furnishings. Some sVOCs are a byproduct of combustion (such as polycyclic aromative hydrocarbons (PAHs)) and may be considered suspected human carcinogens. Due to the large variety of sVOCs, there are also varieties of potential health effects. There are no exposure limits for total sVOCs, but OSHA has published PELs for several sVOC compounds.

#### 2.5 IONIZING RADIATION

lonizing radiation is a form of energy that acts by removing electrons from atoms and molecules of materials that include air, water, and living tissue. Ionizing radiation can travel unseen and pass through these materials. Radiation can interact with DNA directly and cause damage by breaking bonds in the DNA or indirectly by breaking water molecules surrounding the DNA. When these water molecules are broken, they produce free radicals–unstable oxygen molecules that can damage cells and organs. There are many sources of background radiation that people are exposed to every day. These include medical sources such as x-rays, cosmic radiation during air travel, and background radiation from terrestrial sources from radioactive minerals, such as uranium.

#### 2.6 RADON

Radon is a naturally occurring colorless, odorless gas that is a by-product of the decay of radioactive materials potentially present in bedrock and soil. The United States Environmental Protection Agency (EPA) guidance action level for annual residential exposure to radon is 4.0 pico curies per liter (pCi/L). The guidance action level is not a regulatory requirement for private owners of commercial real estate, but is commonly used for comparison purposes to suggest whether further action at a building may be prudent.

ATC's review of published radon data indicates that the property is located in EPA Radon Zone 1, an area of high propensity with regard to the potential for elevated levels of radon gas. According to 54 radon tests throughout Denver County, the average activity for radon in first floor living areas is 3.331 pCi/L.

#### 2.7 ALDEHYDES

Aldehydes are a group of volatile and semi-volatile chemical compounds. This group of chemicals includes formaldehyde. Many aldehydes, including formaldehyde, are suspected or confirmed human carcinogens and some have published occupational exposure limits. Certain aldehydes may also have a strong odor and some may cause upper respiratory tract irritation.

#### 2.8 HEAVY METALS

Heavy metals are naturally occurring minerals that can be present in our environment as a result of industrial processes or they may be used in commercial products, such as paints, ceramics, batteries and electrical components, and building materials. Many heavy metals, such as lead, arsenic, and cadmium, can have toxic effects on the human body. Some heavy metals are considered suspect or confirmed human carcinogens. OSHA has published occupational exposure limits for many individual heavy metals.





## 2.9 BIOAEROSOLS

Bioaerosol sampling provides data to help determine if an indoor source of airborne fungal spores is present in a space. There are currently no legal standards governing permissible levels of mold spore exposures or clearance levels for re-occupancy of a mold remediated area. Mold is naturally present outdoors and airborne spore concentrations change continually. ATC relies upon current scientific literature, guidelines or recommendations made by professional organizations and experts, and statistical methods in interpreting mold sampling results. Current industry standards (as listed at the end of this report) recommend that the mold spore concentrations in an indoor environment be similar to the outdoor ambient air concentrations present at the time of the assessment, as evidenced in the exterior reference sample. When no indoor mold sources are present, indoor airborne mold spore concentrations and types should be similar to or lower than outdoors, indicating that indoor mold reservoirs and/or amplification (growth) sites are not present. An indoor concentration of a particular species that is statistically higher than the outdoor concentration is considered an indicator of an indoor source of fungal spores. In addition, the types (i.e., taxa or groups) of fungal bioaerosols found inside a building should be gualitatively similar to the taxa recovered outdoors, presuming outdoor air is the only source of indoor fungal bioaerosols. There are no regulatory standards or other widely accepted numerical guidelines available for interpretation of bioaerosol data.

A study by Horner, et al (2004) suggests that most indoor environments, with no history of water damage, exhibit the presence of species of *Cladosporium* and the *Penicillium / Aspergillus* group of molds, but that the presence of more than a very few spores of the species *Stachybotrys*, *Chaetomium*, and *Ulocladium* in an indoor sample indicates reservoirs of molds related to severe or prolonged water damage.

#### 2.10 DUST CHARACTERIZATION

Dust characterization provides a general overview of the types of dust particles present on a surface. Common office dust can include many components including skin flakes; biological particles such as insect parts, pollen, and fungal spores; natural and synthetic fibers; minerals, and particles from various types of building materials, such as glass fiber and gypsum. There are no published surface limits for the particles typically associated with office dust, but the relative amount of dust in general is an indicator of housekeeping effectiveness and the potential for IAQ complaints. The purpose of dust characterization is to gain an understanding of the composition of the dust and determine if any particular component is elevated in a given sample relative to other samples.

# 3.0 METHODS AND EVALUATION CRITERIA

#### 3.1 VISUAL INSPECTION

ATC conducted a limited visual assessment of accessible building areas as well as the AHU to determine whether signs of IAQ stressors, such as chemicals, cleaners, visible fungal growth or water damage, were present. ATC did not use destructive methods (such as opening wall cavities) to access hidden areas. ATC did not move any furniture or other furnishings during this survey.





#### 3.2 IAQ PARAMETER MEASUREMENTS

ATC collected IAQ parameter measurements including temperature, relative humidity, CO, and CO<sub>2</sub>. The measurements were collected using a TSI Q-TRAK IAQ monitor. The monitor is calibrated by the manufacturer on an annual basis and was field calibrated prior to this survey in accordance with the manufacturer's recommendations. The monitor was programmed to log measurements for approximately 60 minutes in each sampled location. Readings were also obtained outside the building to measure ambient conditions for reference. The average readings were recorded in the field notes.

#### 3.3 IONIZING RADIATION SCREENING

ATC conducted area surface monitoring for ionizing radiation including detectable alpha, beta, gamma, and x-rays in the identified offices on the second floor. Readings were obtained using a Ludlum Geiger Counter Model 14C equipped with a probe to detect alpha, beta, and gamma radiation. The readings were compared to background levels as determined in control areas. The instrument probe was moved slowly along work surfaces and other objects within the survey areas and readings were recorded in our field notes.

#### 3.4 RADON

Short term radon monitoring was conducted by placing three diffusion barrier charcoal radon monitoring canisters in the areas of concern. The canisters were left in place from July 23 to July 25, 2019. At the end of the collection time period, the canisters were sealed and returned to AccuStar in Ward Hill, Massachusetts. AccuStar is a National Radon Proficiency Program accredited laboratory for radon-in-air analysis. Their accreditation number is 103216 AL.

#### 3.5 HEAVY METALS SAMPLING

ATC conducted heavy metals sampling by placing air sampling cassettes the areas of concern and comparison locations. ATC utilized 25 millimeter (mm) mixed-cellulose ester (MCE) membrane filters (0.8 micron pore size). The cassettes were attached to a sampling pump to draw approximately 2.5 liters of air per minute (L/min) through the filter. The samples were postcalibrated at the end of the sampling period, uniquely labeled, and prepared for shipment to ALS for modified NIOSH Method 7303 analysis. The collected samples were analyzed for the 27 heavy metals listed in Table 1.

Table 1: Heavy Metals Included in Laboratory Analysis						
Aluminum	Arsenic	Beryllium				
Cadmium	Calcium	Chromium				
Cobalt	Copper	Iron				
Lead	Lithium	Magnesium				
Manganese	Molybdenum	Nickel				
Phosphorus	Platinum	Selenium				
Silver	Sodium	Tellurium				
Thallium	Titanium	Vanadium				
Yttrium	Zinc	Zirconium				





## 3.6 ALDEHYDE SAMPLING

ATC conducted aldehyde sampling by placing passive badges in the areas of concern and comparison locations. ATC utilized Assay N571 aldehyde badges to sample the air for approximately eight hours. The badges were placed to ensure adequate airflow and at approximate breathing zone height. The badges were submitted to SGS Galson in East Syracuse, New York, for modified OSHA Method 1007 analysis for eight aldehydes including acetaldehyde, benzaldehyde, butyraldehyde, crotonaldehyde, formaldehyde, isovaleraldehyde, propionaldehyde, and valeraldehyde. SGS Galson is accredited by the American Industrial Hygiene Association Laboratory Accreditation Programs LLC (AIHA-LAP).

#### 3.7 TOTAL VOC SCREENING

ATC monitored for total hydrocarbons using a Rae Systems miniRAE 3000 photoionization detector (PID). The instrument provides resolution as low as 0.1 parts per million (ppm) for VOCs with an ionization potential less than 10.6 eV. The PID was calibrated by the manufacturer within one year and was field calibrated prior to this assessment in accordance with the manufacturer's recommendations. Readings were also obtained outside the building to measure ambient conditions for reference. Monitoring was conducted for approximately 60 minutes in each sample location. The minimum and maximum readings were recorded in the field notes.

#### 3.8 VOLATILE ORGANIC COMPOUND SAMPLING

Six VOC air samples were collected using six-liter evacuated canisters. A regulator was attached to each canister to allow the canister to fill over an eight-hour time period.

The samples were collected in the areas of concern, indoor comparison areas, and outdoors as a reference sample. At the end of the sampling time period, the regulators were removed and the canisters were uniquely labeled and prepared for shipment to ALS for gas chromatography-mass spectrometry analysis. The samples were analyzed for 61 different VOCs as identified in the EPA TO15 method. The collected samples were analyzed for the 61 VOCs listed in Table 2.

Table 2: VOCs Included in Laboratory Analysis						
Acetone	Allyl Chloride	Benzene				
Benzyl Chloride	Bromodichloromethane	Bromoform				
Bromomethane	1,3-Butadiene	Carbon Disulfide				
Carbon Tetrachloride	Chlorobenzene	Chloroethane				
Chloroform	Chloromethane	Cyclohexane				
Dibromochloromethane	1,2-Dibromoethane	1,2-Dichlorobenzene				
1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloroethane				
1,1-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane				
cis-1,2-Dichloroethylene	1,2-Dichloropropane	cis-1,3-Dichloropropene				
trans-1,3-Dichloropropene	1,4-Dioxane	Ethyl Acetate				
4-Ethyltoluene	Ethylbenzene	Freon-11				
Freon-12	Freon-113	Freon-114				
Heptane	Hexane	Isopropyl Alcohol				
Methyl Butyl Ketone	Methylene Chloride	Methyl Ethyl Ketone				
Methyl Isobutyl Ketone	Methyl Tert-Butyl Ether	Propylene				
Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethylene				



Tetrahydrofuran Trichloroethylene 2,2,4-Trimethylpentane Vinyl Bromide *o*-Xylene 1,1,1-Trichloroethane 1,2,4-Trimethylbenzene Toluene Vinyl Chloride 1,1,2-Trichloroethane 1,3,5-Trimethylbenzene Vinyl Acetate *m,p*-Xylene

# 3.9 SEMI-VOLATILE ORGANIC COMPOUND SAMPLING

Six sVOC air samples were collected using OVS-7 glass fiber filter sorbent tubes. The sorbent tubes were attached to low volume sampling pumps at a flow rate of 1.0 L/min and collected for approximately eight hours.

The samples were collected in the areas of concern, indoor comparison areas, and outdoors as a reference sample. The samples were post-calibrated at the end of the sampling period, uniquely labeled, and prepared for shipment to ALS for gas chromatography-mass spectrometry analysis. The samples were analyzed for 66 different sVOCs as identified in the EPA 8270 method. The collected samples were analyzed for the 66 VOCs listed in Table 3.

Table 3: sVOCs Included in Laboratory Analysis					
Acenaphthene	Acenaphthylene	Anthracene			
Benzyl alcohol	Benzoic acid	Benzo(a)anthracene			
Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene			
Benzo(k)fluoranthene	Bis(2-Chloroethoxy)methane	Bis(2-chloroethyl)ether			
Bis(2-ethylhexyl)phthalate	4-Bromophenyl phenyl ether	Butylbenzylphthalate			
Carbazole	Chrysene	2-Chloronaphthalene			
2-Chlorophenol	4-Chloro-3-methylphenol	4-Chloroaniline			
4-Chlorophenyl phenyl ether	Dibenzo(a,h)anthracene	Dibenzofuran			
Diethylphthalate	Dimethylphthalate	Di-n-butylphthalate			
Di-n-octylphthalate	1,2-Dichlorobenzene	1,3-Dichlorobenzene			
1,4-Dichlorobenzene	2,4-Dichlorophenol	2,4-Dimethylphenol			
2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene			
3,3'-Dichlorobenzidine	4,6-Dinitro-2-methylphenol	Fluoranthene			
Fluorene	Hexachloro-1,3-butadinene	Hexachlorocyclopentadiene			
Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone			
2-Methylnaphthalene	2-Methylphenol	4-Methylphenol			
Naphthalene	Nitrobenzene	N-Nitrosodi-n-propyl amine			
N-Nitrosodiphenylamine	2-Nitroaniline	2-Nitrophenol			
3-Nitroaniline	4-Nitroaniline	4-Nitrophenol			
Pentachlorophenol	Phenanthrene	Phenol			
Pyrene	Pyridine	2,2'-oxybis(1-Chloropropane)			
1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol			

#### 3.10 BIOLOGICAL PARTICLE AIR SAMPLING

Six non-culturable microbial air samples were collected by means of Zefon Air-O-Cell<sup>™</sup> cassettes attached to a high volume battery-powered Zefon Bio-Pump<sup>™</sup>. The Air-O-Cell cassettes impact particulates on a glass slide substrate for direct microscopic analysis. Sample airflow rates were 15 L/min, with a sampling duration of five minutes at each sample location. Sampling flow rates





The collected samples were sealed and uniquely labelled before being delivered to EMSL Analytical in Denver, Colorado for direct microscopic examination for microbial spores and other biological particles. EMSL is accredited under the AIHA Environmental Microbiology Laboratory Accreditation Program (EMLAP) and participates in the AIHA Environmental Microbiology Proficiency Analytical Testing (EMPAT) quality control program.

#### 3.11 DUST CHARACTERIZATION

ATC conducted tape lift sampling for dust in the areas of concern as well as common area 240. ATC collected four tape lift samples; one from a filing cabinet, two from desks, and one from a countertop. ATC utilized EMSL tape lifts, which were gently pressed against the surface and adhered to the microscope slides. Each was placed into a hard plastic container and stored in a sealed plastic bag. The tape lift samples were submitted to EMSL in Denver, Colorado for analysis for Level 1 Dust Characterization.

#### 4.0 <u>RESULTS</u>

#### 4.1 VISUAL ASSESSMENT

The survey was performed in office suites 239 and 240, which is located in the south portion of the second floor in the West Classroom building. One AHU, including an evaporative cooler, serves the space. The two-story building was built in 1975 and is approximately 86,000 square feet. Interior finishes include ceiling tile, drywall, cove base, and carpet. A photo log is provided in <u>Appendix A</u>.

- A typical amount of water condensation was observed in the supply fan room #6; on the cooling coil #6, pipes associated with the cooling coil, and on the concrete floor adjacent to the cooling coil. A slight musty odor was noted near the evaporative filter. The pre-filters of the filter bank were in good condition and had minor dust build-up, however the second set of filters were visually clean. The condensate pan appeared to be draining properly. ATC understands that the filters are changed based on pressure differential.
- In the assessed areas on the second floor, the HVAC appeared to be operating normally. Some rooms were slightly negatively pressurized relative to the hallway, while others were positively pressurized. The second floor office area was negatively pressurized relative to the main building hallway and the building was positively pressurized relative to the outdoors. Minor dust build-up was observed on return vents. Each assessed office has at least one supply and one return air vent.
- Some ceiling tiles were observed with minor water staining. The stained ceiling tiles were located in the south hallway and conference room. At the time of the assessment, no unusual odors were noticed.
- Housekeeping appeared to be completed regularly. Horizontal surfaces generally had medium dust build-up, with seldom used surfaces having heavier dust than more frequently used surfaces.



- Chemical cleaners observed at the site were reportedly non-hazardous and eco-friendly. The cleaners and similar chemicals observed would not be expected to illicit health complaints when used appropriately in an office setting.
- The windows in the buildings were inspected for evidence of condensation build-up. No condensation or staining was observed on or around the windows.
- Carpeting did not show signs of staining or water intrusion.
- No suspect microbial growth was observed during the survey.

## 4.2 IAQ PARAMETER MEASURMENTS

Table 4 represents the direct-reading instrument data that was collected. CO and  $CO_2$  measurements are presented in parts per million (ppm), temperature in degrees Fahrenheit (°F), and relative humidity in percentage (%).

Sample Location	Time	Average Temperature (°F)	Average Relative Humidity (%)	Average Carbon Dioxide (ppm)	Average Carbon Monoxide (ppm)
Outdoors	8:18 am 8:33 am	74.9	49.3	376	0.0
239C	8:37 am 9:29 am	73.9	48.9	450	0.0
239D	9:32 am 10:44 am	72.3	52.5	465	0.0
239F	10:47 am 12:03 pm	73.1	50.1	436	0.0
240K	12:05 pm 2:24 pm	74.3	47.0	474	0.0
Common 240	2:48 pm 3:56 pm	74.1	47.0	473	0.0
Outdoors	5:10 pm 5:21 pm	80.9	40.1	338	0.0

 Table 4: IAQ Parameter Measurements July 25, 2019

ppm = parts per million

#### 4.2.1 <u>Temperature</u>

At the time of the assessment, indoor temperatures ranged from 72.3°F to 74.3°F. The temperature readings within the measured areas were relatively consistent and within ASHRAE comfort zone guidelines.

#### 4.2.2 <u>Relative Humidity</u>

Relative humidity ranged from 47.0% to 52.5%. Relative humidity was within the ASHRAE recommended guidelines.

#### 4.2.3 Carbon Dioxide

 $CO_2$  measurements ranged from 436 ppm to 474 ppm. The outdoor concentrations ranged from 338 ppm to 376 ppm. The readings inside the assessed areas indicate that the  $CO_2$  levels were within the ASHRAE guidelines and that the assessed spaces were being supplied with adequate





outside air. Note that many of the offices were not occupied at the time of the assessment, which will lead lower CO<sub>2</sub> concentrations than when the space is fully occupied.

#### 4.2.4 Carbon Monoxide

No carbon monoxide was detected during this assessment. No potential sources of CO (such as gas heaters, water heaters, or other combustion sources) were identified in the assessed areas.

#### 4.3 TOTAL VOLATILE ORGANIC COMPOUNDS

Total VOC measurements ranged from 0.0 ppm to 0.3 ppm during the assessment. Outdoor measurements ranged from 0.0 ppm to 0.1 ppm. These concentrations are typical of indoor office environments.

#### 4.4 IONIZING RADIATION SCREENING

lonizing radiation was not detected above background levels in the assessed offices and common areas at the time of this assessment.

#### 4.5 ALDEHYDE SAMPLING

Laboratory results indicated concentrations of the sampled aldehydes were below the laboratory limit of quantitation (LOQ) and below all applicable referenced occupational exposure limits. Acetaldehyde, butyraldehyde, crotonaldehyde, isovaleraldehyde, propionaldehyde, and valeraldehyde results were less than 0.02 ppm in all five samples. Concentrations of benzaldehyde and formaldehyde were less than 0.01 ppm in all five samples. Laboratory results are included in <u>Appendix B</u> of this report.

#### 4.6 HEAVY METALS

The analytical results indicated that the measured concentrations of heavy metals in the sample locations were all below the laboratory LOQ and well below all applicable referenced occupational exposure limits. The full laboratory analytical report is located in <u>Appendix B</u> of this report.

#### 4.7 RADON SAMPLING

The short-term radon survey results indicate that levels of radon gas at the property are below the EPA action level of 4 pCi/L. The analytical results are summarized in Table 5 and are presented in pCi/L. The full laboratory analytical report is located in <u>Appendix B</u> of this report.

Device Number	Sample Location	Radon Concentration (pCi/L)
656061	WC239C	<0.4
656048	WC239D	<0.4
656069	WC239D (Duplicate)	<0.4
656055	WC239F	0.4
656041	WC239C (Blank)	<0.4

#### Table 5: Radon Sampling Results: July 23, 2019 to July 25, 2019

pCi/L = pico curies per liter





# 4.8 VOLATILE ORGANIC COMPOUND SAMPLING

The analytical results indicated that the measured concentrations of VOCs in the sample locations were below the applicable regulatory and voluntary occupational exposure limits. Table 6 presents the VOCs that were measured above the laboratory detection limits. The full laboratory analytical report is located in <u>Appendix B</u> of this report.





Sample Number	Sample Location	Chemical	Measured Concentration (ppm)	OSHA PEL (ppm)	ACGIH TLV (ppm)
		Dichlorodifluoromethane	0.00041	1000	1000
		Chloromethane	0.00096	100	50
		Freon 11	0.00036	NE	1000 (Ceiling)
		Acetone	0.012	1000	250
		Methylene chloride	0.00041	25	50
240-VOC	Area 240	2-Butanone	0.00067	200	200
		Hexane	0.00033	500	50
		Benzene	0.0002	1.0	0.5
		Toluene	0.00060	200	20
		Isobutane	0.0030	NE	1000
		Ethanol	0.011	1000	1000 (STEL)
		Dichlorodifluoromethane	0.00042	1000	1000
		Chloromethane	0.00098	100	50
		Freon 11	0.00035	NE	1000 (Ceiling)
		Acetone	0.013	1000	250
	Office 240K	Methylene chloride	0.00039	25	50
		2-Butanone	0.00067	200	200
2401-100		Hexane	0.00033	500	50
		Benzene	0.0002	1.0	0.5
		Toluene	0.00063	200	20
		m,p-Xylene	0.0003	100	100
		Isobutane	0.0032	NE	1000
		Ethanol	0.012	1000	1000 (STEL)
		Dichlorodifluoromethane	0.0004	1000	1000
		Chloromethane	0.00095	100	50
		Freon 11	0.00036	NE	1000 (Ceiling)
		Acetone	0.013	1000	250
		Methylene chloride	0.00044	25	50
		2-Butanone	0.00085	200	200
		Ethyl acetate	0.00039	400	400
239C-VOC	Office 239C	Hexane	0.00038	500	50
		Benzene	0.00022	1.0	0.5
		Cyclohexane	0.00046	300	100
		Toluene	0.0010	200	20
		m,p-Xylene	0.00038	100	100
		Isobutane	0.0036	NE	1000
		Ethanol	0.013	1000	1000 (STEL)



Sample Number	Sample Location	Chemical	Measured Concentration (ppm)	OSHA PEL (nnm)	ACGIH TLV (ppm)
		Dichlorodifluoromothano	0.00042	1000	1000
		Chloromethane	0.00042	1000	50
		Freon 11	0.00095	NE	1000 (C)
			0.00000	1000	250
		Methylene chloride	0.00042	25	50
		2-Butanone	0.00064	200	200
239D-VOC	Office 239D	Hexane	0.00036	500	50
		Benzene	0.00021	1.0	0.5
		Toluene	0.00067	200	20
		m.p-Xvlene	0.0003	100	100
		Isobutane	0.0027	NE	1000
		Ethanol	0.013	1000	1000 (STEL)
		Dichlorodifluoromethane	0.00041	1000	1000
	Office 239F	Chloromethane	0.00094	100	50
		Freon 11	0.00034	NE	1000 (Ceiling)
		Acetone	0.011	1000	250
		Methylene chloride	0.0004	25	50
239F-VOC		2-Butanone	0.00059	200	200
		Hexane	0.00031	500	50
		Benzene	0.00018	1.0	0.5
		Toluene	0.00055	200	20
		Isobutane	0.0027	NE	1000
		Ethanol	0.011	1000	1000 (STEL)
		Dichlorodifluoromethane	0.00039	1000	1000
		Chloromethane	0.00099	100	50
		Freon 11	0.00031	NE	1000 (Ceiling)
	Outdoors	Acetone	0.0069	1000	250
EXT-VOC	Near Fresh	Methylene chloride	0.00035	25	50
	Air Intake	2-Butanone	0.00044	200	200
		Hexane	0.00027	500	50
		Toluene	0.00043	200	20
		Acetaldehyde	0.0054	200	25

ppm = parts per million

#### 4.9 SEMI-VOLATILE ORGANIC COMPOUND SAMPLING

The analytical results indicated that the concentrations of sampled sVOCs were all below the laboratory LOQ and applicable occupational exposure limits. The full laboratory analytical report is located in <u>Appendix B</u> of this report.





## 4.10 BIOLOGICAL PARTICLE AIR SAMPLING

Microbial spore trap air sampling results are discussed below and summarized in Table 8. The full analytical laboratory reports are included in <u>Appendix B</u>. ATC collected five indoor air samples and two outdoor samples for comparison in accordance with the previously described procedure.

Location	Outdoors	239C	239D	239F	240	Outdoors
Sample Number	EX-MD	239C-MD	239D-MD	239F-MD	240-MD	EXT-MD2
Spore Type	Spore Concentration (Spores/m <sup>3</sup> )					
Alternaria (Ulocladium)	40					40
Ascospores	200					80
Aspergillus/ Penicillium types	40					680
Basidiospores	5,190				40	300
Bipolaris++						
Chaetomium						
Cladosporium	800	80		10		40
Curvularia						
Epicoccum						
Fusarium						
Ganoderma	40					
Myxomycetes++	1,100	100	80	10		630
Pithomyces++						
Rust						
Scopulariopsis/ Microsascus						
Stachybotrys/ Memnoniella						
Unidentifiable Spores	10					
Zygomycetes						
Oidium	10					
Total Spores/m <sup>3</sup>	7,430	180	80	20	40	1,770
Skin (1-4)	1	1	1	1	1	1
Fibrous Particulate (1-4)	1	1	1	1	1	1

 Table 8: Microbial Air Sampling Results: July 25, 2019

# ATC |

The laboratory report indicated lower concentrations of microbial spores indoors as compared to outdoors. In addition, the types of microbial spores found indoors were generally also found outdoors. The air samples do not indicate in an indoor source of microbial spores.

# 4.11 DUST CHARACTERIZATION

Sample Location	239C-Top of Filing Cabinet	239D-Top of Desk	239F-Top of Desk	240-Top of Countertop
Sample Number	239C-TL	239D-TL	239F-TL	240-TL
Particle Types		Particle concentr	ation (% of Total)	
Particles of Plant Origin				
Pollen	1	1		
Fern/Moss Spores				
Cellulose Fibers	12	9	17	6
Starch Particles		1		
Trichomes	1	1		
Other Plant Particles	1	1	1	
Algae				
Diatoms				
Fungal Matter	3	14		1
Particles of Animal Origin				
Skin Cells	26	22	1	15
Animal Hair			1	
Mites				
Insect Fragments				1
Non-Biological Particles				
Opaque/Dark Particles	18	20	27	11
Glass Fibers	2	1	17	
Synthetic Fibers	6	1	2	
Translucent/Transparent Particles	18	14	10	35
Other Particles	12	15	24	31
Percentage Total	100	100	100	100





#### 5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the visual observations, direct-reading meter monitoring and analytical results, IAQ parameters evaluated during this limited IAQ survey were within typical ranges for occupied office buildings and were below the applicable regulatory and voluntary exposure limits. It is believed that conditions in the building were within the range of normal conditions and that the survey results are indicative of the general IAQ in the building. Glass fiber is common in office dust and is often associated with ceiling tiles and other building materials. Glass fiber can cause irritation in sensitive individuals.

ATC recommends the following:

- Regularly clean and dry water condensate from surfaces in the supply fan room of AHU #6 to prevent potential microbial growth.
- Consider replacing the water-stained ceiling tiles and replaced newly stained tiles as they are observed. Modern ceiling tiles can contain glass fiber. When replacing ceiling tiles, care should be taken to prevent dust from depositing on office furnishings by covering surfaces below the tiles. Any spilled dust generated during replacement should be thoroughly cleaned immediately following the change. Tiles should be changed when occupants are not present to prevent dust exposure.
- Conduct cleaning of return vents periodically during normal housekeeping.
- Reduce glass fiber and general dust build-up by removing settled dust from horizontal surfaces during routine housekeeping. Dusting should be conducted using wet wipe methods or HEPA-filtered vacuum cleaners.
- Continue to maintain comfort level parameters in the building in accordance to the ASHRAE recommendations.

#### 6.0 LIMITATIONS

This report has been prepared to assist Auraria Higher Education Center in evaluating IAQ at the site addressed at 1050 10th Street Plaza in Denver, Colorado. ATC provided these services consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions. This statement is in lieu of other statements either express or implied. This report is intended for the sole use of Auraria Higher Education Center. This report is not intended to serve as a bidding document or as a project specification document and actual conditions and quantities should be field verified. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document, the findings, conclusions, or recommendations is at the risk of said user.

Although reasonable attempts have been made to identify indoor air quality conditions in the reported complaint area, the inspection techniques used are inherently limited in the sense that





only conditions present during the site assessments may be measured and reported. Other possible building material hazards, such as lead-based paint, were not included as part of this assessment and may require proper sampling for identification prior to disturbance.

Additionally, the passage of time may result in a change in the environmental characteristics at this facility. This report does not warrant against future operations or conditions that could affect the recommendations made. The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were observed during the assessment period of July 25, 2019, for ATC's assessment of the office space located at 1050 10th Street Plaza in Denver, Colorado.





**APPENDIX A** 

Photograph Log





Photo 1: View of exterior south entrance to West Classroom.



Photo 3: View of roof above office suites 239 and 240 looking north.



Photo 2: View of AHU #6 return exhaust vent.



Photo 4: View of fan room.





Photo 7: View of second filter of filter bank.



Photo 6: View of minor dust build-up on pre-filters.



Photo 8: View of evaporative cooler.





Photo 9: View of AHU #6 cooling coils. Typical amount of water condensation observed.



Photo 11: View of AHU #6 return fan.



Photo 10: View of AHU #6 supply fan.



Photo 12: View of sampling equipment and media in office 239C.







Photo 13: View of sampling equipment and media in office 239D.



Photo 15: View of 239 corridor.



Photo 14: View of sampling equipment and media in office 239F.



Photo 16: View of 240 corridor.





Photo 17: View of sampling equipment and media in office 240K.



Photo 19: View of cleaners in room P100K.



Photo 18: View of sampling equipment and media in common area 240.





**APPENDIX B** 

Analytical Laboratory Reports



Ms. Kari Yenter ATC Group Services, LLC 8985 E. Nichols Avenue Suite 350 Centennial, CO 80112

Account# 15602

Dear Ms. Yenter:

August 01, 2019

Login# L487058

Enclosed are the revised analytical results for the samples received by our laboratory on July 26, 2019. All samples on the chain of custody were received in good condition unless otherwise noted. Any additional observations will be noted on the chain of custody.

Please contact client services at (888) 432-5227 if you would like any additional information regarding this report. Thank you for using SGS Galson.

Sincerely,

SGS Galson

Lisa-Luab

Lisa Swab Laboratory Director

Enclosure(s)



Account : 15602 Login No. :L487058

#### COMMENT ANNEX

Per your request, the ID for L487058-3 has been corrected. Please note that this revision cancels and supersedes L487058 (report reference:1) dated 07/29/19 issued by SGS Galson.



ANALYTICAL REPORT

Account : 15602 Login No. : L487058

#### **Terms and Conditions & General Disclaimers**

- This document is issued by the Company under its General Conditions of Service accessible at <a href="http://www.sgs.com/en/Terms-and-conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions.aspx</a>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.
- Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

#### **Analytical Disclaimers**

- Unless otherwise noted within the report, all quality control results associated with the samples were within established control limits or did not impact reported results.
- Note: The findings recorded within this report were drawn from analysis of the sample(s) provided to the laboratory by the Client (or a
  third party acting at the Client's direction). The laboratory does not have control over the sampling process, including but not limited to
  the use of field equipment and collection media, as well as the sampling duration, collection volume or any other collection parameter
  used by the Client. The findings herein constitute no warranty of the sample's representativeness of any sampled environment, and
  strictly relate to the samples as they were presented to the laboratory. For recommended sampling collection parameters, please refer to
  the Sampling and Analysis Guide at <u>www.sgsgalson.com</u>.
- Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of
  significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the
  final result column may have been rounded and therefore, if carried through the calculations, may not yield an identical final result to the
  one reported.
- The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).
- Unless otherwise noted within the report, results have not been blank corrected for any field blank or method blank data.

Accreditations\_SGS Galson holds a variety of accreditations and recognitions. Our quality management system conforms with the requirements of ISO/IEC 17025. Where applicable, samples may also be analyzed in accordance with the requirements of ELAP, NELAC, or LELAP under one of the state accrediting bodies listed below. Current Scopes of Accreditation can be viewed at <a href="http://www.sgsgalson.com">http://www.sgsgalson.com</a> in the accreditations section of the "About" page. To determine if the analyte tested falls under our scope of accreditation, please visit our website or call Client Services at (888) 432-5227.

National/International	Accreditation/Recognition	Lab ID#	Program/Sector
AIHA-LAP, LLC - IHLAP, ELLAP, EMLAP	ISO/IEC 17025 and USEPA NLLAP	Lab ID 100324	Industrial Hygiene, Environmental Lead,
10 - 10 M	57		Environmental Microbiology
State	Accreditation/Recognition	Lab ID#	Program/Sector
New York (NYSDOH)	ELAP and NELAC (TNI)	Lab ID: 11626	Air Analysis, Solid and Hazardous Waste
New Jersey (NJDEP)	NELAC (TNI)	Lab ID: NY024	Air Analysis
Louisiana (LDEQ)	LELAP	Lab ID: 04083	Air Analysis, Solid Chemical Materials
Texas	Texas Dept. of Licensing and Regulation	Lab ID: 1042	Mold Analysis Laboratory license

#### Legend

< - Less than	mg - Milligrams	MDL - Method Detection Limit	ppb - Parts per Billion
> - Greater than	ug - Micrograms	NA - Not Applicable	ppm - Parts per Million
l - Liters	m3 - Cubic Meters	NS - Not Specified	ppbv - ppb Volume
LOQ - Limit of Quantitation	kg - Kilograms	ND - Not Detected	ppmv - ppm Volume
ft2 - Square Feet	cm2 - Square Centimeters	in2 - Square Inches	ng - Nanograms

SGS	ALSON	LABORATO	RY ANALYSIS	REPORT			
6601 Kirkville Road East Syracuse, NY 13057 (315) 432-5227 FAX: (315) 437-0571 www.sgsgalson.com	Client Site Project No. Date Sampled Date Received	: ATC Asso WEST CLAN : AHEC IAQ : 25-JUL-1 : 26-JUL-1	ciates, Inc SSROOM SURVEY 9 9		Account No.: Login No. : Date Analyzeo Report ID	15602 L487058 1 : 29-JUL-19 : 1149796	
Client ID : 239C-ALD Date Sampled : 07/25/19	Lab ID : L4 Date Analyz	87058-1 ed : 07/29/:	Time : 5	05 minutes			
Parameter	1	LOQ .	Raw ug	Total ug	Conc mg/m3	mqq	
Acetaldehyde Benzaldehyde Butyraldehyde Crotonaldehyde Formaldehyde Propionaldehyde Valeraldehyde		00025	<ul> <li>&lt;0.2</li> <li>&lt;0.2<td><pre></pre></td><td><ol> <li>&lt;0.03</li> <li>&lt;0.06</li> <li>&lt;0.05</li> <li>&lt;0.05</li> <li>&lt;0.01</li> <li>&lt;0.04</li> <li>&lt;0.06</li> </ol></td><td><ol> <li>&lt;0.02</li> <li>&lt;0.01</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> </ol></td><td></td></li></ul>	<pre></pre>	<ol> <li>&lt;0.03</li> <li>&lt;0.06</li> <li>&lt;0.05</li> <li>&lt;0.05</li> <li>&lt;0.01</li> <li>&lt;0.04</li> <li>&lt;0.06</li> </ol>	<ol> <li>&lt;0.02</li> <li>&lt;0.01</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> </ol>	
COMMENTS: Please see attached	lab footnote repor	t for any a	pplicable f	ootnotes.			
Collection Media: Assay 571 Date : 29-JUL-19	Submitt Supervi	ed by: KNC sor : MWJ		Approv	ed by: NKP		

Page 4 of 12 Report Reference:2 Generated:01-AUG-19 13:41

SGS	BALSON	LABORATOF	XY ANALYSIS	REPORT			
6601 Kirkville Road East Syracuse, NY 13057 (315) 432-5227 FAX: (315) 437-0571 www.sgsgalson.com	Client Site Project No. Date Sampled Date Received	: ATC Assoc WEST CLAS AHEC IAQ : 25-JUL-19 : 26-JUL-11	siates, Inc. ssroom surver		Account No.: Login No. : Date Analyzed Report ID	15602 L487058 : 29-JUL-19 : 1149796	
Client ID : 239D-ALD Date Sampled : 07/25/19	Lab ID : L4 Date Analyz	187058-2 sed : 07/29/1	Time : 50	2 minutes			
Parameter		roQ	Raw ug	Total ug	Conc mg/m3	mdd	
Acetaldehyde Benzaldehyde Butyraldehyde Crotonaldehyde Formaldehyde Propionaldehyde Valeraldehyde		000000000000000000000000000000000000000	<ul> <li>&lt;0.2</li> <li>&lt;0.2<td><pre>&lt; 0.2</pre>&lt; &lt; 0.2&lt; &lt; 0.2&lt; &lt; 0.2&lt; &lt; &lt;</td><td><pre>&lt;0.04 </pre><pre>&lt;0.06 </pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre< td=""><td><ol> <li>&lt;0.02</li> <li>&lt;0.01</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.01</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> </ol></td><td></td></pre<></td></li></ul>	<pre>&lt; 0.2</pre> < < 0.2< < 0.2< < 0.2< < < < < < < < < < < < < < < < < < <	<pre>&lt;0.04 </pre> <pre>&lt;0.06 </pre> <pre></pre> <pre< td=""><td><ol> <li>&lt;0.02</li> <li>&lt;0.01</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.01</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> </ol></td><td></td></pre<>	<ol> <li>&lt;0.02</li> <li>&lt;0.01</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.01</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> <li>&lt;0.02</li> </ol>	
COMMENTS: Please see attach	ed lab footnote repor	ct for any a	pplicable fo	otnotes.			
Collection Media: Assay 571 Date : 29-JUL-19	Submitt Supervi	ced by: KNC Lsor : MWJ		Approv	ed by: NKP		

Page 5 of 12 Report Reference:2 Generated:01-AUG-19 13:41

0.2       <0.2       <0.2       <0.02         0.2       <0.2       <0.2       <0.05       <0.01         0.2       <0.2       <0.2       <0.05       <0.01         0.2       <0.2       <0.05       <0.05       <0.01         0.1       <0.1       <0.1       <0.05       <0.02         0.1       <0.1       <0.1       <0.01       <0.02         0.1       <0.1       <0.1       <0.01       <0.01         0.1       <0.1       <0.1       <0.01       <0.01         0.2       <0.2       <0.02       <0.01       <0.01         0.2       <0.2       <0.02       <0.01       <0.02         0.2       <0.2       <0.02       <0.02       <0.02         0.2       <0.2       <0.02       <0.02       <0.02         0.2       <0.2       <0.02       <0.02       <0.02         0.2       <0.2       <0.02       <0.02       <0.02         0.2       <0.02       <0.02       <0.02       <0.02         0.2       <0.02       <0.02       <0.02       <0.02         0.2       <0.02       <0.02       <0.02       <0.02       <0	0.2 0.2 0.2 0.2 0.2 0.1 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2
0.2       <0.2	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.2 0.2 0.1 0.1 0.2 0.2 0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0
0.2       <0.2	0.2 0.1 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2
0.1       <0.1	0.1 <0.1 <0.1 0.2 0.2 0.2 <0.2 0.2 <0.2 <0.2 <0.2 <0.
0.2       <0.2	0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2 < <0.2
0.2 < 0.2 < 0.2 < 0.04 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02	0.2 < <0.2 <0.2
0.2 × 0.02 × 0.02 × 0.02	0.2
	Submitted by: KNC Supervisor : MWJ
1 Submitted by: KNC Approved by: NKP 9 Supervisor : MWJ	Concerning and an experimental

Page 6 of 12 Report Reference:2 Generated:01-AUG-19 13:41

SGS	<b>LSON</b>	LABORATOI	RY ANALYSIS	REPORT			
6601 Kirkville Road	Client Site	: ATC ASSO : WEST CLA	ciates, Inc. SSROOM		Account No.: . Login No. : 1	15602 L487058	
East Syracuse, NI 13037 (315) 432-5227 FAX: (315) 437-0571 WWW.Sgsgalson.com	rioject No. Date Sampled Date Received	: 25-JUL-1. : 25-JUL-1. : 26-JUL-1.			Date Analyzed Report ID	: 29-JUL-19 : 1149796	
Client ID : 240K-ALD Date Sampled : 07/25/19	Lab ID : L4 Date Analyz	187058-4 187058-4	Time : 49 19	1 minutes			
Parameter		год	Raw ug	Total ug	Conc mg/m3	udd	
Acetaldehyde		0.2	<0.2	<0.2	<0.04	<0.02	
Benzaldehyde		0.2	<0.2	<0.2	<0.06	<0.01	
Butyraldehyde		0.2	<0.2	<0.2	<0.06	<0.02	
Crotonaldehyde		0.2	<0.2	<0.2	<0.05	<0.02	
Formaldehyde		0.1	<0.1	<0.1	<0.01	<0.01	
Isovaleraldehyde		0.2	<0.2	<0.2	<0.07	<0.02	
Propionaldehyde		0.2	<0.2	<0.2	<0.04	<0.02	
Valeraldehyde		0.2	<0.2	<0.2	<0.07	<0.02	
COMMENTS: Please see attached la	ub footnote repor	ct for any a	pplicable fo	otnotes.			
177 mease seizon asittor	++ 	Park KNC		Anner	DXN		
CULLECCION MECLA: ASSAY J'I Date : 29-JUL-19	Supervi	sor : MWJ		) א ג ג			

Page 7 of 12 Report Reference:2 Generated:01-AUG-19 13:41

SGS	GALSON	LABORATORY	ANALYSIS RF	PORT			
6601 Kirkville Road East Syracuse, NY 13057 (315) 432-5227 FAX: (315) 437-0571 www.sgsgalson.com	Client Site Project No. Date Sampled Date Received	: ATC Associé : WEST CLASSI : AHEC IAQ SU : 25-JUL-19 : 26-JUL-19	ates, Inc. Room URVEY		Account No.: 1 Login No. : r Date Analyzed Report ID	5602 487058 : 29-JUL-19 : 1149796	
Client ID : 240-ALD Date Sampled : 07/25/1	Lab ID : L4 9 Date Analyz	187058-5 sed : 07/29/19	Time : 501	minutes			
Parameter		LOQ UG	Raw ug	Total ug	Conc mg/m3	mqq	
Acetaldehyde Benzaldehyde Butyraldehyde Crotonaldehyde Formaldehyde Isovaleraldehyde Propionaldehyde Valeraldehyde		0.220.222	00.2 00.2 00.2 00.2 00.2 00.2 00.2 00.2	<ul> <li>&lt;0.2</li> <li>&lt;0.2<td><pre>&lt;0.04</pre><pre>&lt;0.04</pre><pre>&lt;0.06</pre><pre>&lt;0.05</pre><pre>&lt;0.01</pre><pre>&lt;0.01</pre><pre>&lt;0.04</pre><pre>&lt;0.06</pre></td><td><pre>&lt;0.02</pre><pre>&lt;0.01</pre><pre>&lt;0.02</pre><pre>&lt;0.02</pre><pre>&lt;0.02</pre><pre>&lt;0.02</pre><pre>&lt;0.02</pre><pre>&lt;0.02</pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre></pre><pre< td=""><td></td></pre<></td></li></ul>	<pre>&lt;0.04</pre> <pre>&lt;0.04</pre> <pre>&lt;0.06</pre> <pre>&lt;0.05</pre> <pre>&lt;0.01</pre> <pre>&lt;0.01</pre> <pre>&lt;0.04</pre> <pre>&lt;0.06</pre>	<pre>&lt;0.02</pre> <pre>&lt;0.01</pre> <pre>&lt;0.02</pre> <pre>&lt;0.02</pre> <pre>&lt;0.02</pre> <pre>&lt;0.02</pre> <pre>&lt;0.02</pre> <pre>&lt;0.02</pre> <pre></pre> <pre< td=""><td></td></pre<>	
COMMENTS: Please see atta	ched lab footnote repo	rt for any app	licable foo	cnotes.			
Collection Media: Assay 5 Date : 29-JUL-	71 Submitt 19 Supervi	ted by: KNC isor : MWJ		Approve	dy: NKP		

Page 8 of 12 Report Reference:2 Generated:01-AUG-19 13:41
SGS	GALSON	LABORATOF	XY ANALYSIS R	EPORT			
6601 Kirkville Road East Syracuse, NY 13057	Client Site Project No.	: ATC Assoc : WEST CLAS : AHEC IAQ	ciates, Inc. SSROOM SURVEY		Account No.: 1 Login No. : L	5602 487058	
(315) 432-5227 FAX: (315) 437-0571 www.sgsgalson.com	Date Sampled Date Received	: 25-JUL-19	0.0		Date Analyzed Report ID	: 29-JUL-19 : 1149796	
Client ID : BLANK Date Sampled :	Lab ID : L4 Date Analyzed : 07/	187058-6 '29/19	Time : NA				
Parameter	J	roQ LoQ	Raw ug	Total ug	Conc mg/m3	mqq	
Acetaldehyde		0.2	<0.2	<0.2	NA	NA	
Benzaldehyde		0.2	<0.2 <0.2	<0.2	NA AN	AN AN	
Crotonaldehyde		0.2	<0.2	<0.2	NA	NA	
Formaldehyde		0.1	<0.1	<0.1	NA	NA	
Isovaleraldehyde		0.2	<0.2	<0.2	NA	NA	
Propionaldehyde Valeraldehyde		0.2	<0.2 <0.2	<0.2 <0.2	NA NA	NA NA	
<u>COMMENTS:</u> Please see atta	ached lab footnote repor	ct for any a	pplicable foc	tnotes.			
Collection Media: Assay 5 Date : 29-JUL-	571 Submitt -19 Supervi	ced by: KNC Lsor : MWJ		Approv	ed by: NKP		

Page 9 of 12 Report Reference:2 Generated:01-AUG-19 13:41

GALSON

LABORATORY FOOTNOTE REPORT

Client Name : ATC Associates, Inc. Site : WEST CLASSROOM : AHEC IAQ SURVEY Project No.

Date Sampled : 25-JUL-19 Date Received: 26-JUL-19 Date Analyzed: 29-JUL-19

6601 Kirkville Road East Syracuse, NY 13057 (315) 432-5227 FAX: (315) 437-0571

www.sgsgalson.com

Account No.: 15602 Login No. : 1487058

L487058 (Report ID: 1149796):

Crotonaldehyde - Total ug corrected for a desorption efficiency of 91%. Formaldehyde - Total ug corrected for a desorption efficiency of 96%. Tsovaleraldehyde - Total ug corrected for a desorption efficiency of 84%. Propionaldehyde - Total ug corrected for a desorption efficiency of 97%. Valeraldehyde - Total ug corrected for a desorption efficiency of 66%. FORMALDEHYDE results have been corrected for the average background found on the media: 0.0472 ug for lot #2F19 (samples 1-6). SOPs: LC-SOP-4(22) Acetaldehyde - Total ug corrected for a desorption efficiency of 97%. Benzaldehyde - Total ug corrected for a desorption efficiency of 98%. Butyraldehyde - Total ug corrected for a desorption efficiency of 86%. 0.1146 ug for lot #2F19 (samples 1-6).

1487058 (Report ID: 1149796): Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, recinned y associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where M/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

Mean Recovery 96% 102% 99.8% 105% 96.5% 97.7% 102% HPLC/UV HPLC/UV HPLC/UV 1007; 1007; OSHA 1007; OSHA OSHA +/-8.9% +/-9.7% +/-7.3% Accuracy +/-9.9% +/-9.6% +/-21% +/-8.8% Method mod. mod. mod. mod. mod. . pom Isovaleraldehyde Propionaldehyde Butyraldehyde Crotonaldehyde Valeraldehyde Acetaldehyde Benzaldehyde Formaldehyde Butyraldehyde Acetaldehyde Benzaldehyde Parameter Parameter

Page 10 of 12 Report Reference:2 Generated:01-AUG-19 13:41

HPLC/UV HPLC/UV HPLC/UV HPLC/UV HPLC/UV

OSHA 1007; OSHA 1007; OSHA 1007; OSHA 1007; OSHA 1007;

Formaldehyde Isovaleraldehyde Propionaldehyde

Valeraldehyde

Crotonaldehyde

OSHA 1007;

F 8 2 F	ES28529461 te:07726/19 thes:07726/19 thats:mek titals:mek minimum ep:UNKNOUN		GAI	NOS	C.	IAIN	OF CL	ΙΟΟΟΥ			
	turn Around Time (TAT): 1(	(surcharge	) You may edit ar	nd complete this COC et	sctronically by I	logging in to you	r Client Portal account	at https://portal.gaisonlabs.com/			
	4 Business Days	35%	Client Acct No.:	Report To :	. Мз. Калл	Yenter		Invoice To : Ms.	Kari Yenter		
	3 Business Days	50%	15602	Company Name	ATC Group	p Services,	ניגר	Company Name : Arc	Associates, Inc.		.
	2 Business Days	75%		Address 1	: 8985 E. 1	Nichols Aven	ue	Address 1: 898	15 E. Nichols Avenue		
	Next Day by 6pm	100%	PTX538412	City: Control 2	Suite 351	0		Address 2: Sui	te 350		
<u>ک</u>	Next Day by Noon	150%			Centenni	a1, CU 80112		Phone No.: 303	1 - 248 - 8853		
	Same Day	200%	CS Rep:	Celt No.	720 - 537	7 - 2253		Email Address : kar	ci.yenter@atcgs.com		.
	Samples submitted using	1 the	NTORMEY	Email reports to	: kari.yent	tergatcgs.co	в	Comments :			
	FreePumpLoan Program	the a	Online COC No.	Comments				P.O. No. : 20	いろうののろちろう will call SGS Galson to provide	credit card inf	
	FreeSamplingBadges <sup>14</sup> Pa	rogram	T80419					ŏ	Card on File (enter the last five o	ligits on the lin	e below)
	Comments :							State Sampled :	Please indicate which OEL(s)	this data will b	e used for :
			,					Thella	KOSHA PEL KACGIH TLV		] са озна
	来 Blant S	r grz	ited a	61 22/2					Dido : Specify Limit(s)	Other : Specify	/ Other
	Site Name: CLASCN	مكناه	Project	C IAO SUC	٧٣٩	Sampled By :	Kenter	List description of in	dustry or Process/interferences	present in sam	pling area :
	Sample ID * (Maximum of 20 Character	C S	ate Sampled •	Collection Mediu		Sample Volume Sample Time Sample Area *	Liters Minutes in², cm², ft² *	Analysis Requested	Method Reference ^	Hexavalent Process (e.	Chromium g., welding, inting, etc.}
	239C-AUD		7/25/19	Assay N571 Aldehy Badge	ġ.		SOSmin	Aldehyde Profile	mod. OSHA 1007; HPLC/UV		
	239D-ALI	0	$\rightarrow$	Assay N571 Aldehy Badge	de D		Jos min	Aldehyde Profile	mod. OSHA 1007; HPLC/UV		
	* If the method(s) indicat	ted on the	COC are not our ro	outine/preferred method	(s), we will sub	stitute our routin	a/preferred methods. II	f this is not acceptable, check here	to have us contact you.		
	Chain of Custody		Print Name / Sign	lature	Date	Time		Print Name / Sigr	nature	Date	Time
	Relinquished By :	N	21 ~	NRI YENTER	PILSAFE	2081 1	Received By :			<u> </u>	
	Relinquished By :				•		Received By : N	chelle Krause Mulu	11 - martin - 11	21-11-12	5431
				* You mus Sample.	t <b>fill in these c</b> s received after	olumns for any su r 3pm will be con	amples which you are : sidered as next day's b	submítting	Duline-GOC No.: 186 Prep No.: PTX Account No.: 156 Draft: 7/23	479 ( (538412 02 3/2019 9:47:21 /	W
		All set	rvices are rendered	d in accordance with the	applicable SG	S General Conditi	ons of Service accessil	ble via: http://www.sgs.com/en/Ter	ms-and-Conditions.aspx		
	Page:1/2				SGS N Arme	North   6601 Kirkv erica,	dile Road E. Syracuse	, NY 13057, USA 1+1 888 432 522	7   +1 315 432 5227 www.galsc	onlabs.com   w	ww.sgs.com
				Page 11 o	f12 Rep	tnc.   Iort Referent	<del>xe.2 Generated</del> o	01-AUG-19 13.41			100 6 01
				•					WEETING		110 CECT LIN

Member of the SGS Group (SGS SA)

of the SGS Group (SGS SA)	Member	01-AUG-19 13.41	e.2 Generated.	oort <del>ikeferenc</del>	of 12 Rep	· Page 12 c			••
onlabs.com {	+1 315 432 5227 www.gals	, NY 13057, USA t+1 888 432 5227	ille Road E. Syracuse.	North 6601 Kirkvi erica, Inc.	SGS				Page:2/2
	is-and-Conditions.aspx	ole via: http://www.sgs.com/en/Terr	ons of Service accessit	S General Conditi	applicable SG	red in accordance with the	l services are rende	A	
602 3/2019 9:47:21 AM	Account No. : 156 Draft : 7/2	usiness.	idered as next day s o	r 3pm will be cons	s received alle	апріє			4
3479   X538412	Prep No. : 188	ubmitting.	mples which you are s	olumns for any sa	st fill in these c	sum uoY •			
1560 61mz	2 X 7	chollo Kraino M. A.A	Received By : Add		•				Relinquished By :
			Received By :	9 1800	Il saft	API YENTER	_	LIN I	Relinquished By :
Date Time	ture	Print Name / Signa		Time	Date	gnature	Print Name / Si		Chain of Custody
	b have us contact you.	this is not acceptable, check here to	e/preferred methods. If	ostitute our routine	(s), we will sut	r routine/preferred method	the COC are not our	l(s) indicated on	A ff the method
						•			
	mod. OSHA 1007; HPLC/UV	Aldehyde Profile			đe	Assay N571 Aldeby Badge			
	mod. OSHA 1007; HPLC/UV	Aldehyde Profile	حمًا المح		de	Assay N571 Aldehy Badge	ト	ALD	240-,
	mod. OSHA 1007; HPLC/UV	Aldehyde Profile	491 min		de	Assay N571 Aldehy Badge	, [, ]	- 4LD	240K.
	HOG. OSHA 1007; HPLC/UV	Aldehyde Profile	SOLMin		de	Assay N571 Aldehy Badge	7/25/19	- ALD	239 E-
Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)	Method Reference ^	Analysis Requested	Liters Minutes in², cm², ft² *	Sample Volume Sample Time Sample Area *	<b>ε</b> .	Collection Mediu	Date Sampled •	ID • Characters)	Sample (Maximum of 20
							-		
									Comments :

:

•

2

1

20.000

ŝ

4

ł

÷,

**CHAIN OF CUSTODY** SGS GALSON

.

•



Report Date: July 29, 2019

Phone: 720-537-2253

E-mail: kari.yenter@atcgs.com

Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

#### **Analytical Results**

Kari Yenter

Suite 350

ATC Group Services, LLC 8985 East Nichols Ave

Centennial, CO 80112

Sample ID: 240-SVOC				Received: 07/26/2019
Lab ID: 1921267001	Sa	mpling Location: 2035	5000383	
Method: NIOSH 5528		Media: SKC 226-57, Fiber Filter(O)	XAD-7/Glass	Instrument: 5975-A
	Samp	ling Info: Air Volume 5	38.58 L	Analyzed: 07/26/2019 (244433)
	Result			
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Pyridine	<10	<0.019	<0.0057	10
Phenol	<10	<0.019	<0.0048	10
Bis(2-chloroethyl)ether	<10	<0.019	<0.0032	10
2-Chlorophenol	<10	<0.019	<0.0035	10
1,3-Dichlorobenzene	<10	<0.019	<0.0031	10
1,4-Dichlorobenzene	<10	<0.019	<0.0031	10
Benzyl alcohol	<10	<0.019	< 0.0042	10
1,2-Dichlorobenzene	<10	<0.019	<0.0031	10
2-Methylphenol	<10	<0.019	< 0.0042	10
2,2'-oxybis(1-Chloropropane)	<10	<0.019	<0.0027	10
4-Methylphenol	<10	<0.019	< 0.0042	10
N-Nitrosodi-n-propyl amine	<10	<0.019	<0.0035	10
Hexachloroethane	<10	<0.019	<0.0019	10
Nitrobenzene	<10	<0.019	<0.0037	10
Isophorone	<10	<0.019	<0.0033	10
2-Nitrophenol	<10	<0.019	<0.0033	10
2,4-Dimethylphenol	<10	<0.019	<0.0037	10
Benzoic acid	<40	<0.074	<0.015	40
Bis(2-Chloroethoxy)methane	<10	<0.019	<0.0026	10
2,4-Dichlorophenol	<10	<0.019	<0.0028	10
1,2,4-Trichlorobenzene	<10	<0.019	<0.0025	10
Naphthalene	<10	<0.019	<0.0035	10
4-Chloroaniline	<10	<0.019	<0.0036	10
Hexachloro-1,3-butadiene	<10	<0.019	<0.0017	10
4-Chloro-3-methylphenol	<10	<0.019	<0.0032	10
2-Methylnaphthalene	<10	<0.019	<0.0032	10
Results Continued on Next Page				

ADDRESS 960 West LeVoy Drive, Salt Lake City, Utah, 84123 USA | PHONE +1 801 266 7700 | FAX +1 801 268 9992 ALS GROUP USA, CORP. An ALS Limited Company

Environmental 🐊

# www.alsglobal.com

**RIGHT SOLUTIONS** RIGHT PARTNER



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 240-SVOC				Received: 07/26/2019
Lab ID: 1921267001	Sa	mpling Location: 2035	000383	
Method: NIOSH 5528		Media: SKC 226-57, 2	XAD-7/Glass	Instrument: 5975-A
	Samp	ling Info: Air Volume 5	38.58 L	Analyzed: 07/26/2019 (244433)
	Result			
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Hexachlorocyclopentadiene	<10	<0.019	<0.0017	10
2,4,6-Trichlorophenol	<10	<0.019	<0.0023	10
2,4,5-Trichlorophenol	<10	<0.019	<0.0023	10
2-Chloronaphthalene	<10	<0.019	<0.0028	10
2-Nitroaniline	<10	<0.019	<0.0033	10
Dimethylphthalate	<10	<0.019	<0.0023	10
2,6-Dinitrotoluene	<10	<0.019	<0.0025	10
Acenaphthylene	<10	<0.019	<0.0030	10
3-Nitroaniline	<10	<0.019	<0.0033	10
Acenaphthene	<10	<0.019	<0.0029	10
2,4-Dinitrophenol	<40	<0.074	<0.0099	40
4-Nitrophenol	<40	<0.074	<0.013	40
Dibenzofuran	<10	<0.019	<0.0027	10
2,4-Dinitrotoluene	<10	<0.019	<0.0025	10
Diethylphthalate	<10	<0.019	<0.0020	10
4-Chlorophenyl phenyl ether	<10	<0.019	<0.0022	10
Fluorene	<10	<0.019	<0.0027	10
4-Nitroaniline	<10	<0.019	<0.0033	10
4,6-Dinitro-2-methylphenol	<40	<0.074	<0.0092	40
N-Nitrosodiphenylamine	<10	<0.019	<0.0023	10
4-Bromophenyl phenyl ether	<10	<0.019	<0.0018	10
Hexachlorobenzene	<10	<0.019	<0.0016	10
Pentachlorophenol	<40	<0.074	<0.0068	40
Phenanthrene	<10	<0.019	<0.0025	10
Anthracene	<10	<0.019	<0.0025	10
Carbazole	<10	<0.019	<0.0027	10
Di-n-butylphthalate	<10	<0.019	<0.0016	10
Fluoranthene	<10	<0.019	< 0.0022	10
Pyrene	<10	<0.019	<0.0022	10
Butylbenzylphthalate	<10	<0.019	<0.0015	10
3,3'-Dichlorobenzidine	<10	<0.019	<0.0018	10
Benzo(a)anthracene	<10	<0.019	<0.0020	10
Chrysene	<10	<0.019	<0.0020	10
Bis(2-ethylhexyl)phthalate	<10	<0.019	<0.0012	10
Di-n-octylphthalate	<10	<0.019	<0.0012	10
Benzo(b)fluoranthene	<10	<0.019	<0.0018	10
Benzo(k)fluoranthene	<10	<0.019	<0.0018	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 240-SVOC				Received: 07/26/2019
Lab ID: 1921267001	Sai	mpling Location: 2035	5000383	
Method: NIOSH 5528		Media: SKC 226-57, Fiber Filter(O	XAD-7/Glass VS) 100/200mg	Instrument: 5975-A
	Sampl	ling Info: Air Volume 5	38.58 L	Analyzed: 07/26/2019 (244433)
Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Benzo(a)pyrene	<10	<0.019	<0.0018	10
Indeno(1,2,3-cd)pyrene	<10	<0.019	<0.0016	10
Dibenzo(a,h)anthracene	<10	<0.019	<0.0016	10
Benzo(g,h,i)perylene	<10	<0.019	<0.0016	10

Sample ID: 240K-SVOC				Received: 07/26/2019
Lab ID: 1921267002	Sa	mpling Location: 2035	000383	
Method: NIOSH 5528		Media: SKC 226-57, 2	XAD-7/Glass	Instrument: 5975-A
	Comm	Fiber Filter(O	/S) 100/200mg	Applymed: 07/26/2010 (244422)
	Bacult	ing into: Air volume 4	91 L	Analyzed: 07/20/2019 (244433)
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Pyridine	<10	<0.020	<0.0063	10
Phenol	<10	<0.020	<0.0053	10
Bis(2-chloroethyl)ether	<10	<0.020	<0.0035	10
2-Chlorophenol	<10	<0.020	<0.0039	10
1,3-Dichlorobenzene	<10	<0.020	<0.0034	10
1,4-Dichlorobenzene	<10	<0.020	<0.0034	10
Benzyl alcohol	<10	<0.020	<0.0046	10
1,2-Dichlorobenzene	<10	<0.020	<0.0034	10
2-Methylphenol	<10	<0.020	<0.0046	10
2,2'-oxybis(1-Chloropropane)	<10	<0.020	<0.0029	10
4-Methylphenol	<10	<0.020	<0.0046	10
N-Nitrosodi-n-propyl amine	<10	<0.020	<0.0038	10
Hexachloroethane	<10	<0.020	<0.0021	10
Nitrobenzene	<10	<0.020	<0.0040	10
Isophorone	<10	<0.020	<0.0036	10
2-Nitrophenol	<10	<0.020	<0.0036	10
2,4-Dimethylphenol	<10	<0.020	<0.0041	10
Benzoic acid	<40	<0.081	<0.016	40
Bis(2-Chloroethoxy)methane	<10	<0.020	<0.0029	10
2,4-Dichlorophenol	<10	<0.020	<0.0031	10
1,2,4-Trichlorobenzene	<10	<0.020	<0.0027	10
Naphthalene	<10	<0.020	<0.0039	10
4-Chloroaniline	<10	<0.020	<0.0039	10
Hexachloro-1,3-butadiene	<10	<0.020	<0.0019	10
4-Chloro-3-methylphenol	<10	<0.020	<0.0035	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 240K-SVOC				Received: 07/26/2019
Lab ID: 1921267002	Sa	mpling Location: 2035	000383	
Method: NIOSH 5528		Media: SKC 226-57, 2	XAD-7/Glass	Instrument: 5975-A
	Sampl	ling Info: Air Volume 4	91 L	Analyzed: 07/26/2019 (244433)
	Result		-	
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
2-Methylnaphthalene	<10	<0.020	< 0.0035	10
Hexachlorocyclopentadiene	<10	<0.020	<0.0018	10
2,4,6-Irichlorophenol	<10	<0.020	<0.0025	10
2,4,5-1richlorophenol	<10	<0.020	<0.0025	10
2-Chloronaphthalene	<10	<0.020	<0.0031	10
2-Nitroaniline	<10	<0.020	<0.0036	10
Dimethylphthalate	<10	<0.020	<0.0026	10
2,6-Dinitrotoluene	<10	<0.020	<0.0027	10
Acenaphthylene	<10	<0.020	<0.0033	10
3-Nitroaniline	<10	<0.020	<0.0036	10
Acenaphthene	<10	<0.020	<0.0032	10
2,4-Dinitrophenol	<40	<0.081	<0.011	40
4-Nitrophenol	<40	<0.081	<0.014	40
Dibenzofuran	<10	<0.020	<0.0030	10
2,4-Dinitrotoluene	<10	<0.020	<0.0027	10
Diethylphthalate	<10	<0.020	<0.0022	10
4-Chlorophenyl phenyl ether	<10	<0.020	<0.0024	10
Fluorene	<10	<0.020	<0.0030	10
4-Nitroaniline	<10	<0.020	<0.0036	10
4,6-Dinitro-2-methylphenol	<40	<0.081	<0.010	40
N-Nitrosodiphenylamine	<10	<0.020	<0.0025	10
4-Bromophenyl phenyl ether	<10	<0.020	<0.0020	10
Hexachlorobenzene	<10	<0.020	<0.0017	10
Pentachlorophenol	<40	<0.081	<0.0075	40
Phenanthrene	<10	<0.020	<0.0028	10
Anthracene	<10	<0.020	<0.0028	10
Carbazole	<10	<0.020	<0.0030	10
Di-n-butylphthalate	<10	<0.020	<0.0018	10
Fluoranthene	<10	<0.020	<0.0025	10
Pyrene	<10	<0.020	<0.0025	10
Butylbenzylphthalate	<10	<0.020	<0.0016	10
3,3'-Dichlorobenzidine	<10	<0.020	<0.0020	10
Benzo(a)anthracene	<10	<0.020	<0.0022	10
Chrysene	<10	<0.020	<0.0022	10
Bis(2-ethylhexyl)phthalate	<10	<0.020	<0.0013	10
Di-n-octylphthalate	<10	<0.020	<0.0013	10
Benzo(b)fluoranthene	<10	<0.020	<0.0020	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 240K-SVOC				Received: 07/26/2019
Lab ID: 1921267002	Sa	mpling Location: 2035	000383	
Method: NIOSH 5528		Media: SKC 226-57, Fiber Filter(O	XAD-7/Glass VS) 100/200mg	Instrument: 5975-A
	Samp	ling Info: Air Volume 4	91 L	Analyzed: 07/26/2019 (244433)
	Result			
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Benzo(k)fluoranthene	<10	<0.020	<0.0020	10
Benzo(a)pyrene	<10	<0.020	<0.0020	10
Indeno(1,2,3-cd)pyrene	<10	<0.020	<0.0018	10
Dibenzo(a,h)anthracene	<10	<0.020	<0.0018	10
Benzo(g,h,i)perylene	<10	<0.020	<0.0018	10

Sample ID: 239C-SVOC				Received: 07/26/2019
Lab ID: 1921267003	Sa	mpling Location: 2035	5000383	
Method: NIOSH 5528		Media: SKC 226-57,	XAD-7/Glass	Instrument: 5975-A
	Samp	ling Info: Air Volume 4	•99.4 L	Analyzed: 07/26/2019 (244433)
	Result			
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Pyridine	<10	<0.020	<0.0062	10
Phenol	<10	<0.020	<0.0052	10
Bis(2-chloroethyl)ether	<10	<0.020	<0.0034	10
2-Chlorophenol	<10	<0.020	<0.0038	10
1,3-Dichlorobenzene	<10	<0.020	<0.0033	10
1,4-Dichlorobenzene	<10	<0.020	<0.0033	10
Benzyl alcohol	<10	<0.020	<0.0045	10
1,2-Dichlorobenzene	<10	<0.020	<0.0033	10
2-Methylphenol	<10	<0.020	<0.0045	10
2,2'-oxybis(1-Chloropropane)	<10	<0.020	<0.0029	10
4-Methylphenol	<10	<0.020	<0.0045	10
N-Nitrosodi-n-propyl amine	<10	<0.020	<0.0038	10
Hexachloroethane	<10	<0.020	<0.0021	10
Nitrobenzene	<10	<0.020	<0.0040	10
Isophorone	<10	<0.020	<0.0035	10
2-Nitrophenol	<10	<0.020	<0.0035	10
2,4-Dimethylphenol	<10	<0.020	<0.0040	10
Benzoic acid	<40	<0.080	<0.016	40
Bis(2-Chloroethoxy)methane	<10	<0.020	<0.0028	10
2,4-Dichlorophenol	<10	<0.020	<0.0030	10
1,2,4-Trichlorobenzene	<10	<0.020	<0.0027	10
Naphthalene	<10	<0.020	<0.0038	10
4-Chloroaniline	<10	<0.020	<0.0038	10
Hexachloro-1,3-butadiene	<10	<0.020	<0.0019	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 239C-SVOC				Received: 07/26/2019
Lab ID: 1921267003	Sa	mpling Location: 2035	000383	
Method: NIOSH 5528		Media: SKC 226-57, )	(AD-7/Glass	Instrument: 5975-A
	Samp	ling Info: Air Volume 49	<b>39.4 L</b>	Analyzed: 07/26/2019 (244433)
	Result			
Analyte	(ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
4-Chloro-3-methylphenol	<10	<0.020	<0.0034	10
2-Methylnaphthalene	<10	<0.020	<0.0034	10
Hexachlorocyclopentadiene	<10	<0.020	<0.0018	10
2,4,6-Trichlorophenol	<10	<0.020	<0.0025	10
2,4,5-Trichlorophenol	<10	<0.020	<0.0025	10
2-Chloronaphthalene	<10	<0.020	<0.0030	10
2-Nitroaniline	<10	<0.020	<0.0035	10
Dimethylphthalate	<10	<0.020	<0.0025	10
2,6-Dinitrotoluene	<10	<0.020	<0.0027	10
Acenaphthylene	<10	<0.020	<0.0032	10
3-Nitroaniline	<10	<0.020	<0.0035	10
Acenaphthene	<10	<0.020	<0.0032	10
2,4-Dinitrophenol	<40	<0.080	<0.011	40
4-Nitrophenol	<40	<0.080	<0.014	40
Dibenzofuran	<10	<0.020	<0.0029	10
2,4-Dinitrotoluene	<10	<0.020	<0.0027	10
Diethylphthalate	<10	<0.020	<0.0022	10
4-Chlorophenyl phenyl ether	<10	<0.020	<0.0024	10
Fluorene	<10	<0.020	<0.0029	10
4-Nitroaniline	<10	<0.020	<0.0035	10
4,6-Dinitro-2-methylphenol	<40	<0.080	<0.0099	40
N-Nitrosodiphenylamine	<10	<0.020	<0.0025	10
4-Bromophenyl phenyl ether	<10	<0.020	<0.0020	10
Hexachlorobenzene	<10	<0.020	<0.0017	10
Pentachlorophenol	<40	<0.080	<0.0074	40
Phenanthrene	<10	<0.020	<0.0027	10
Anthracene	<10	<0.020	<0.0027	10
Carbazole	<10	<0.020	<0.0029	10
Di-n-butylphthalate	<10	<0.020	<0.0018	10
Fluoranthene	<10	<0.020	<0.0024	10
Pyrene	<10	<0.020	<0.0024	10
Butylbenzylphthalate	<10	<0.020	<0.0016	10
3,3'-Dichlorobenzidine	<10	<0.020	<0.0019	10
Benzo(a)anthracene	<10	<0.020	<0.0021	10
Chrysene	<10	<0.020	<0.0021	10
Bis(2-ethylhexyl)phthalate	<10	<0.020	<0.0013	10
Di-n-octylphthalate	<10	<0.020	<0.0013	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 239C-SVOC				Received: 07/26/2019
Lab ID: 1921267003	Sa	mpling Location: 2035	5000383	
Method: NIOSH 5528		Media: SKC 226-57, 2 Fiber Filter(O)	XAD-7/Glass	Instrument: 5975-A
	Sampl	ling Info: Air Volume 4	99.4 L	Analyzed: 07/26/2019 (244433)
Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Benzo(b)fluoranthene	<10	<0.020	<0.0019	10
Benzo(k)fluoranthene	<10	<0.020	<0.0019	10
Benzo(a)pyrene	<10	<0.020	<0.0019	10
Indeno(1,2,3-cd)pyrene	<10	<0.020	<0.0018	10
Dibenzo(a,h)anthracene	<10	<0.020	<0.0018	10
Benzo(g,h,i)perylene	<10	<0.020	<0.0018	10

Sample ID: 239D-SVOC			Received: 07/26/2019			
Lab ID: 1921267004	Sampling Location: 2035000383					
Method: NIOSH 5528		Media: SKC 226-57, Fiber Filter(O	XAD-7/Glass VS) 100/200mg	Instrument: 5975-A		
	Samp	ling Info: Air Volume 5	538 L	Analyzed: 07/26/2019 (244433)		
	Result					
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)		
Pyridine	<10	<0.019	<0.0057	10		
Phenol	<10	<0.019	<0.0048	10		
Bis(2-chloroethyl)ether	<10	<0.019	<0.0032	10		
2-Chlorophenol	<10	<0.019	<0.0035	10		
1,3-Dichlorobenzene	<10	<0.019	<0.0031	10		
1,4-Dichlorobenzene	<10	<0.019	<0.0031	10		
Benzyl alcohol	<10	<0.019	< 0.0042	10		
1,2-Dichlorobenzene	<10	<0.019	<0.0031	10		
2-Methylphenol	<10	<0.019	<0.0042	10		
2,2'-oxybis(1-Chloropropane)	<10	<0.019	<0.0027	10		
4-Methylphenol	<10	<0.019	<0.0042	10		
N-Nitrosodi-n-propyl amine	<10	<0.019	<0.0035	10		
Hexachloroethane	<10	<0.019	<0.0019	10		
Nitrobenzene	<10	<0.019	<0.0037	10		
Isophorone	<10	<0.019	<0.0033	10		
2-Nitrophenol	<10	<0.019	<0.0033	10		
2,4-Dimethylphenol	<10	<0.019	<0.0037	10		
Benzoic acid	<40	<0.074	<0.015	40		
Bis(2-Chloroethoxy)methane	<10	<0.019	<0.0026	10		
2,4-Dichlorophenol	<10	<0.019	<0.0028	10		
1,2,4-Trichlorobenzene	<10	<0.019	<0.0025	10		
Naphthalene	<10	<0.019	< 0.0035	10		
4-Chloroaniline	<10	<0.019	<0.0036	10		



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 239D-SVOC				Received: 07/26/2019
Lab ID: 1921267004	Sa	mpling Location: 2035	000383	
Method: NIOSH 5528	Media: SKC 226-57, XAD-7/Glass			Instrument: 5975-A
	Sampl	ling Info: Air Volume 5	38 L	Analyzed: 07/26/2019 (244433)
	Result			
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Hexachloro-1,3-butadiene	<10	<0.019	<0.0017	10
4-Chloro-3-methylphenol	<10	<0.019	<0.0032	10
2-Methylnaphthalene	<10	<0.019	<0.0032	10
Hexachlorocyclopentadiene	<10	<0.019	<0.0017	10
2,4,6-Trichlorophenol	<10	<0.019	<0.0023	10
2,4,5-Trichlorophenol	<10	<0.019	<0.0023	10
2-Chloronaphthalene	<10	<0.019	<0.0028	10
2-Nitroaniline	<10	<0.019	<0.0033	10
Dimethylphthalate	<10	<0.019	<0.0023	10
2,6-Dinitrotoluene	<10	<0.019	<0.0025	10
Acenaphthylene	<10	<0.019	<0.0030	10
3-Nitroaniline	<10	<0.019	<0.0033	10
Acenaphthene	<10	<0.019	<0.0029	10
2,4-Dinitrophenol	<40	<0.074	<0.0099	40
4-Nitrophenol	<40	<0.074	<0.013	40
Dibenzofuran	<10	<0.019	<0.0027	10
2,4-Dinitrotoluene	<10	<0.019	<0.0025	10
Diethylphthalate	<10	<0.019	<0.0020	10
4-Chlorophenyl phenyl ether	<10	<0.019	<0.0022	10
Fluorene	<10	<0.019	<0.0027	10
4-Nitroaniline	<10	<0.019	<0.0033	10
4,6-Dinitro-2-methylphenol	<40	<0.074	<0.0092	40
N-Nitrosodiphenylamine	<10	<0.019	<0.0023	10
4-Bromophenyl phenyl ether	<10	<0.019	<0.0018	10
Hexachlorobenzene	<10	<0.019	<0.0016	10
Pentachlorophenol	<40	<0.074	<0.0068	40
Phenanthrene	<10	<0.019	<0.0025	10
Anthracene	<10	<0.019	<0.0025	10
Carbazole	<10	<0.019	<0.0027	10
Di-n-butylphthalate	<10	<0.019	<0.0016	10
Fluoranthene	<10	<0.019	<0.0022	10
Pyrene	<10	<0.019	<0.0022	10
Butylbenzylphthalate	<10	<0.019	<0.0015	10
3,3'-Dichlorobenzidine	<10	<0.019	<0.0018	10
Benzo(a)anthracene	<10	<0.019	<0.0020	10
Chrysene	<10	<0.019	<0.0020	10
Bis(2-ethylhexyl)phthalate	<10	<0.019	<0.0012	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 239D-SVOC			Received: 07/26/2019	
Lab ID: 1921267004	Sa	mpling Location: 2035	000383	
Method: NIOSH 5528		Media: SKC 226-57, 2	XAD-7/Glass	Instrument: 5975-A
	Samp	ling Info: Air Volume 5	38 L	Analyzed: 07/26/2019 (244433)
	Result			
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Di-n-octylphthalate	<10	<0.019	<0.0012	10
Benzo(b)fluoranthene	<10	<0.019	<0.0018	10
Benzo(k)fluoranthene	<10	<0.019	<0.0018	10
Benzo(a)pyrene	<10	<0.019	<0.0018	10
Indeno(1,2,3-cd)pyrene	<10	<0.019	<0.0016	10
Dibenzo(a,h)anthracene	<10	<0.019	<0.0016	10
Benzo(g,h,i)perylene	<10	<0.019	<0.0016	10

Sample ID: 239F-SVOC			Received: 07/26/2019			
Lab ID: 1921267005	Sampling Location: 2035000383					
Method: NIOSH 5528		Media: SKC 226-57,	Instrument: 5975-A			
	Comm	Fiber Filter(O	VS) 100/200mg	Applymed: 07/26/2010 (24/422)		
	Samp	ing into: Air volume 5	021.04 L	Analyzed: 07/20/2019 (244433)		
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)		
Pyridine	<10	<0.019	<0.0059	10		
Phenol	<10	<0.019	<0.0050	10		
Bis(2-chloroethyl)ether	<10	<0.019	<0.0033	10		
2-Chlorophenol	<10	<0.019	<0.0037	10		
1,3-Dichlorobenzene	<10	<0.019	<0.0032	10		
1,4-Dichlorobenzene	<10	<0.019	<0.0032	10		
Benzyl alcohol	<10	<0.019	<0.0043	10		
1,2-Dichlorobenzene	<10	<0.019	<0.0032	10		
2-Methylphenol	<10	<0.019	<0.0043	10		
2,2'-oxybis(1-Chloropropane)	<10	<0.019	<0.0027	10		
4-Methylphenol	<10	<0.019	<0.0043	10		
N-Nitrosodi-n-propyl amine	<10	<0.019	<0.0036	10		
Hexachloroethane	<10	<0.019	<0.0020	10		
Nitrobenzene	<10	<0.019	<0.0038	10		
Isophorone	<10	<0.019	<0.0034	10		
2-Nitrophenol	<10	<0.019	<0.0034	10		
2,4-Dimethylphenol	<10	<0.019	<0.0038	10		
Benzoic acid	<40	<0.077	<0.015	40		
Bis(2-Chloroethoxy)methane	<10	<0.019	<0.0027	10		
2,4-Dichlorophenol	<10	<0.019	<0.0029	10		
1,2,4-Trichlorobenzene	<10	<0.019	< 0.0026	10		
Naphthalene	<10	<0.019	< 0.0037	10		



## Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 239F-SVOC				Received: 07/26/2019
Lab ID: 1921267005	Sa	mpling Location: 2035	5000383	
Method: NIOSH 5528	Media: SKC 226-57, XAD-7/Glass			Instrument: 5975-A
	Samp	ling Info: Air Volume 5	21.04 L	Analyzed: 07/26/2019 (244433)
	Result	•		· · · · ·
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
4-Chloroaniline	<10	<0.019	<0.0037	10
Hexachloro-1,3-butadiene	<10	<0.019	<0.0018	10
4-Chloro-3-methylphenol	<10	<0.019	<0.0033	10
2-Methylnaphthalene	<10	<0.019	<0.0033	10
Hexachlorocyclopentadiene	<10	<0.019	<0.0017	10
2,4,6-Trichlorophenol	<10	<0.019	<0.0024	10
2,4,5-Trichlorophenol	<10	<0.019	<0.0024	10
2-Chloronaphthalene	<10	<0.019	<0.0029	10
2-Nitroaniline	<10	<0.019	<0.0034	10
Dimethylphthalate	<10	<0.019	<0.0024	10
2,6-Dinitrotoluene	<10	<0.019	<0.0026	10
Acenaphthylene	<10	<0.019	<0.0031	10
3-Nitroaniline	<10	<0.019	<0.0034	10
Acenaphthene	<10	<0.019	<0.0030	10
2,4-Dinitrophenol	<40	<0.077	<0.010	40
4-Nitrophenol	<40	<0.077	<0.013	40
Dibenzofuran	<10	<0.019	<0.0028	10
2,4-Dinitrotoluene	<10	<0.019	<0.0026	10
Diethylphthalate	<10	<0.019	<0.0021	10
4-Chlorophenyl phenyl ether	<10	<0.019	<0.0023	10
Fluorene	<10	<0.019	<0.0028	10
4-Nitroaniline	<10	<0.019	<0.0034	10
4,6-Dinitro-2-methylphenol	<40	<0.077	<0.0095	40
N-Nitrosodiphenylamine	<10	<0.019	<0.0024	10
4-Bromophenyl phenyl ether	<10	<0.019	<0.0019	10
Hexachlorobenzene	<10	<0.019	<0.0016	10
Pentachlorophenol	<40	<0.077	<0.0070	40
Phenanthrene	<10	<0.019	<0.0026	10
Anthracene	<10	<0.019	<0.0026	10
Carbazole	<10	<0.019	<0.0028	10
Di-n-butylphthalate	<10	<0.019	<0.0017	10
Fluoranthene	<10	<0.019	<0.0023	10
Pyrene	<10	<0.019	<0.0023	10
Butylbenzylphthalate	<10	<0.019	<0.0015	10
3,3'-Dichlorobenzidine	<10	<0.019	<0.0019	10
Benzo(a)anthracene	<10	<0.019	<0.0021	10
Chrysene	<10	<0.019	<0.0021	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

#### **Analytical Results**

Sample ID: 239F-SVOC				Received: 07/26/2019
Lab ID: 1921267005	Sa	mpling Location: 2035	5000383	
Method: NIOSH 5528		Media: SKC 226-57,	XAD-7/Glass	Instrument: 5975-A
	Samp	Fiber Filter(O ling Info: Air Volume 5	VS) 100/200mg 21.04 L	Analyzed: 07/26/2019 (244433)
Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Bis(2-ethylhexyl)phthalate	<10	<0.019	<0.0012	10
Di-n-octylphthalate	<10	<0.019	<0.0012	10
Benzo(b)fluoranthene	<10	<0.019	<0.0019	10
Benzo(k)fluoranthene	<10	<0.019	<0.0019	10
Benzo(a)pyrene	<10	<0.019	<0.0019	10
Indeno(1,2,3-cd)pyrene	<10	<0.019	<0.0017	10
Dibenzo(a,h)anthracene	<10	<0.019	<0.0017	10
Benzo(g,h,i)perylene	<10	<0.019	<0.0017	10

#### Sample ID: EXT-SVOC Received: 07/26/2019 Lab ID: 1921267006 Sampling Location: 2035000383 Method: NIOSH 5528 Media: SKC 226-57, XAD-7/Glass Instrument: 5975-A Fiber Filter(OVS) 100/200mg Sampling Info: Air Volume 599.76 L Analyzed: 07/26/2019 (244433) Result Analyte (ug/sample) Result (mg/m<sup>3</sup>) RL (ug/sample) Result (ppm) Pyridine <10 < 0.017 < 0.0052 10 < 0.017 Phenol <10 < 0.0043 10 Bis(2-chloroethyl)ether <10 < 0.017 <0.0029 10 <10 10 2-Chlorophenol < 0.017 < 0.0032 10 1,3-Dichlorobenzene <10 < 0.017 < 0.0028 10 1,4-Dichlorobenzene <10 < 0.017 < 0.0028 Benzyl alcohol <10 < 0.017 < 0.0038 10 10 1,2-Dichlorobenzene <10 < 0.017 < 0.0028 10 <10 < 0.017 < 0.0038 2-Methylphenol 2,2'-oxybis(1-Chloropropane) <10 < 0.017 < 0.0024 10 10 4-Methylphenol <10 < 0.017 < 0.0038 < 0.017 < 0.0031 N-Nitrosodi-n-propyl amine <10 10 Hexachloroethane <10 < 0.017 < 0.0017 10 <10 10 Nitrobenzene < 0.017 < 0.0033 <10 < 0.0029 10 Isophorone < 0.017 2-Nitrophenol 10 <10 < 0.017 < 0.0029 2,4-Dimethylphenol <10 < 0.017 < 0.0033 10 <40 40 Benzoic acid < 0.067 < 0.013 <10 <0.017 Bis(2-Chloroethoxy)methane < 0.0024 10 2,4-Dichlorophenol <10 < 0.0025 10 < 0.017 1,2,4-Trichlorobenzene <10 < 0.017 < 0.0022 10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: EXT-SVOC				Received: 07/26/2019
Lab ID: 1921267006	Sa	mpling Location: 2035	000383	
Method: NIOSH 5528	Media: SKC 226-57, XAD-7/Glass			Instrument: 5975-A
	Samp	ling Info: Air Volume 5	99.76 L	Analyzed: 07/26/2019 (244433)
	Result	-		
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Naphthalene	<10	<0.017	< 0.0032	10
4-Chloroaniline	<10	<0.017	< 0.0032	10
Hexachloro-1,3-butadiene	<10	<0.017	< 0.0016	10
4-Chloro-3-methylphenol	<10	< 0.017	<0.0029	10
2-Methylnaphthalene	<10	<0.017	<0.0029	10
Hexachlorocyclopentadiene	<10	<0.017	<0.0015	10
2,4,6-Trichlorophenol	<10	<0.017	<0.0021	10
2,4,5-Trichlorophenol	<10	<0.017	<0.0021	10
2-Chloronaphthalene	<10	<0.017	<0.0025	10
2-Nitroaniline	<10	<0.017	<0.0030	10
Dimethylphthalate	<10	<0.017	<0.0021	10
2,6-Dinitrotoluene	<10	<0.017	<0.0022	10
Acenaphthylene	<10	<0.017	<0.0027	10
3-Nitroaniline	<10	<0.017	<0.0030	10
Acenaphthene	<10	<0.017	<0.0026	10
2,4-Dinitrophenol	<40	<0.067	<0.0089	40
4-Nitrophenol	<40	<0.067	<0.012	40
Dibenzofuran	<10	<0.017	<0.0024	10
2,4-Dinitrotoluene	<10	<0.017	<0.0022	10
Diethylphthalate	<10	<0.017	<0.0018	10
4-Chlorophenyl phenyl ether	<10	<0.017	<0.0020	10
Fluorene	<10	<0.017	<0.0025	10
4-Nitroaniline	<10	<0.017	<0.0030	10
4,6-Dinitro-2-methylphenol	<40	<0.067	<0.0082	40
N-Nitrosodiphenylamine	<10	<0.017	<0.0021	10
4-Bromophenyl phenyl ether	<10	<0.017	<0.0016	10
Hexachlorobenzene	<10	<0.017	<0.0014	10
Pentachlorophenol	<40	<0.067	<0.0061	40
Phenanthrene	<10	<0.017	<0.0023	10
Anthracene	<10	<0.017	<0.0023	10
Carbazole	<10	<0.017	<0.0024	10
Di-n-butylphthalate	<10	<0.017	<0.0015	10
Fluoranthene	<10	<0.017	<0.0020	10
Pyrene	<10	<0.017	<0.0020	10
Butylbenzylphthalate	<10	<0.017	<0.0013	10
3,3'-Dichlorobenzidine	<10	<0.017	<0.0016	10
Benzo(a)anthracene	<10	<0.017	<0.0018	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: EXT-SVOC				Received: 07/26/2019
Lab ID: 1921267006	Sa	mpling Location: 2035	5000383	
Method: NIOSH 5528		Media: SKC 226-57,	XAD-7/Glass	Instrument: 5975-A
	Samp	Fiber Filter(O' bling Info: Air Volume 5	VS) 100/200mg 9 <b>9.76 L</b>	Analyzed: 07/26/2019 (244433)
Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Chrysene	<10	<0.017	<0.0018	10
Bis(2-ethylhexyl)phthalate	<10	<0.017	<0.0010	10
Di-n-octylphthalate	<10	<0.017	<0.0010	10
Benzo(b)fluoranthene	<10	<0.017	<0.0016	10
Benzo(k)fluoranthene	<10	<0.017	<0.0016	10
Benzo(a)pyrene	<10	<0.017	<0.0016	10
Indeno(1,2,3-cd)pyrene	<10	<0.017	<0.0015	10
Dibenzo(a,h)anthracene	<10	<0.017	<0.0015	10
Benzo(g,h,i)perylene	<10	<0.017	<0.0015	10

Sample ID: Blank				Received: 07/26/2019
Lab ID: 1921267007	Sa	mpling Location: 2038	5000383	
Method: NIOSH 5528		Media: SKC 226-57, Fiber Filter(O	Instrument: 5975-A	
	Samp	ling Info: Air Volume N	Not Applicable	Analyzed: 07/27/2019 (244433)
Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Pyridine	<10	NA	NA	10
Phenol	<10	NA	NA	10
Bis(2-chloroethyl)ether	<10	NA	NA	10
2-Chlorophenol	<10	NA	NA	10
1,3-Dichlorobenzene	<10	NA	NA	10
1,4-Dichlorobenzene	<10	NA	NA	10
Benzyl alcohol	<10	NA	NA	10
1,2-Dichlorobenzene	<10	NA	NA	10
2-Methylphenol	<10	NA	NA	10
2,2'-oxybis(1-Chloropropane)	<10	NA	NA	10
4-Methylphenol	<10	NA	NA	10
N-Nitrosodi-n-propyl amine	<10	NA	NA	10
Hexachloroethane	<10	NA	NA	10
Nitrobenzene	<10	NA	NA	10
Isophorone	<10	NA	NA	10
2-Nitrophenol	<10	NA	NA	10
2,4-Dimethylphenol	<10	NA	NA	10
Benzoic acid	<40	NA	NA	40
Bis(2-Chloroethoxy)methane	<10	NA	NA	10
2,4-Dichlorophenol	<10	NA	NA	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

Analytical	Results
------------	---------

Sample ID: Blank				Received: 07/26/2019
Lab ID: 1921267007	Sa	mpling Location: 2035	5000383	
Method: NIOSH 5528		Media: SKC 226-57, 2 Fiber Filter(O)	XAD-7/Glass	Instrument: 5975-A
	Sampl	ling Info: Air Volume N	lot Applicable	Analyzed: 07/27/2019 (244433)
Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
1,2,4-Trichlorobenzene	<10	NA	NA	10
Naphthalene	<10	NA	NA	10
4-Chloroaniline	<10	NA	NA	10
Hexachloro-1,3-butadiene	<10	NA	NA	10
4-Chloro-3-methylphenol	<10	NA	NA	10
2-Methylnaphthalene	<10	NA	NA	10
Hexachlorocyclopentadiene	<10	NA	NA	10
2,4,6-Trichlorophenol	<10	NA	NA	10
2,4,5-Trichlorophenol	<10	NA	NA	10
2-Chloronaphthalene	<10	NA	NA	10
2-Nitroaniline	<10	NA	NA	10
Dimethylphthalate	<10	NA	NA	10
2,6-Dinitrotoluene	<10	NA	NA	10
Acenaphthylene	<10	NA	NA	10
3-Nitroaniline	<10	NA	NA	10
Acenaphthene	<10	NA	NA	10
2,4-Dinitrophenol	<40	NA	NA	40
4-Nitrophenol	<40	NA	NA	40
Dibenzofuran	<10	NA	NA	10
2,4-Dinitrotoluene	<10	NA	NA	10
Diethylphthalate	<10	NA	NA	10
4-Chlorophenyl phenyl ether	<10	NA	NA	10
Fluorene	<10	NA	NA	10
4-Nitroaniline	<10	NA	NA	10
4,6-Dinitro-2-methylphenol	<40	NA	NA	40
N-Nitrosodiphenylamine	<10	NA	NA	10
4-Bromophenyl phenyl ether	<10	NA	NA	10
Hexachlorobenzene	<10	NA	NA	10
Pentachlorophenol	<40	NA	NA	40
Phenanthrene	<10	NA	NA	10
Anthracene	<10	NA	NA	10
Carbazole	<10	NA	NA	10
Di-n-butylphthalate	<10	NA	NA	10
Fluoranthene	<10	NA	NA	10
Pyrene	<10	NA	NA	10
Butylbenzylphthalate	<10	NA	NA	10
3,3'-Dichlorobenzidine	<10	NA	NA	10



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: Blank			Received: 07/26/2019	
Lab ID: 1921267007	Sa	ampling Location: 2035	5000383	
Method: NIOSH 5528		Media: SKC 226-57,	XAD-7/Glass	Instrument: 5975-A
	Samp	Fiber Filter(O' Ding Info: Air Volume N	VS) 100/200mg Iot Applicable	Analyzed: 07/27/2019 (244433)
	Result			
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	Result (ppm)	RL (ug/sample)
Benzo(a)anthracene	<10	NA	NA	10
Chrysene	<10	NA	NA	10
Bis(2-ethylhexyl)phthalate	<10	NA	NA	10
Di-n-octylphthalate	<10	NA	NA	10
Benzo(b)fluoranthene	<10	NA	NA	10
Benzo(k)fluoranthene	<10	NA	NA	10
Benzo(a)pyrene	<10	NA	NA	10
Indeno(1,2,3-cd)pyrene	<10	NA	NA	10
Dibenzo(a,h)anthracene	<10	NA	NA	10
Benzo(g,h,i)perylene	<10	NA	NA	10

Sample ID: 240-M				Received: 07/26/2019	
Lab ID: 1921267008	Sampling Location: 2035000383				
Method: NIOSH 7303 Mod., MCE	Samp	Media: MCE Filter bling Info: Air Volume	Instrument: ICP09 Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)		
Analyte	Result (ug/sample)	Result (mg/m³)	RL (ug/sample)		
Aluminum	<5.0	<0.0039	5.0		
Arsenic	<2.5	<0.0020	2.5		
Beryllium	<0.013	<0.000098	0.013		
Cadmium	<0.075	<0.000059	0.075		
Calcium	<15	<0.012	15		
Chromium	<1.3	<0.00098	1.3		
Cobalt	<0.075	<0.000059	0.075		
Copper	<0.53	<0.00041	0.53		
Iron	<5.0	<0.0039	5.0		
Lead	<1.3	<0.00098	1.3		
Lithium	<1.0	<0.00078	1.0		
Magnesium	<1.3	<0.00098	1.3		
Manganese	<0.13	<0.00098	0.13		
Molybdenum	<0.38	<0.00029	0.38		
Nickel	<0.13	<0.00098	0.13		
Phosphorus	<5.0	<0.0039	5.0		
Platinum	<3.8	<0.0029	3.8		
Selenium	<2.5	<0.0020	2.5		
Silver	<0.25	<0.00020	0.25		



Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

#### **Analytical Results** Sample ID: 240-M Received: 07/26/2019 Lab ID: 1921267008 Sampling Location: 2035000383 Method: NIOSH 7303 Mod., MCE Media: MCE Filter **Instrument: ICP09** Prepared: 07/26/2019 (244429) Sampling Info: Air Volume 1280.1 L Analyzed: 07/29/2019 (244525) Result Analyte (ug/sample) RL (ug/sample) Result (mg/m<sup>3</sup>) Sodium 3.8 <3.8 <0.0029 Tellurium <1.3 < 0.00098 1.3 Thallium 1.3 <1.3 < 0.00098 < 0.075 Titanium < 0.000059 0.075 Vanadium < 0.075 < 0.000059 0.075 Yttrium <0.075 < 0.000059 0.075 Zinc <0.50 < 0.00039 0.50 Zirconium < 0.50 < 0.00039 0.50

Sample ID: 240K-M				Received: 07/26/2019	
Lab ID: 1921267009	Sampling Location: 2035000383				
Method: NIOSH 7303 Mod., MCE	Sam	Media: MCE Filter ppling Info: Air Volume	1242.23 L	Instrument: ICP09 Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)	
Analyte	Result (ug/sample)	Result (mg/m³)	RL (ug/sample)		
Aluminum	<5.0	<0.0040	5.0		
Arsenic	<2.5	<0.0020	2.5		
Beryllium	<0.013	<0.000010	0.013		
Cadmium	<0.075	<0.000060	0.075		
Calcium	<15	<0.012	15		
Chromium	<1.3	<0.0010	1.3		
Cobalt	<0.075	<0.000060	0.075		
Copper	<0.53	<0.00042	0.53		
Iron	<5.0	<0.0040	5.0		
Lead	<1.3	<0.0010	1.3		
Lithium	<1.0	<0.00081	1.0		
Magnesium	<1.3	<0.0010	1.3		
Manganese	<0.13	<0.00010	0.13		
Molybdenum	<0.38	<0.00030	0.38		
Nickel	<0.13	<0.00010	0.13		
Phosphorus	<5.0	<0.0040	5.0		
Platinum	<3.8	<0.0030	3.8		
Selenium	<2.5	<0.0020	2.5		
Silver	<0.25	<0.00020	0.25		
Sodium	<3.8	<0.0030	3.8		
Tellurium	<1.3	<0.0010	1.3		



Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 240K-M				Received: 07/26/2019
Lab ID: 1921267009	Sa	ampling Location: 203	35000383	
Method: NIOSH 7303 Mod., MCE	Samp	Media: MCE Filter bling Info: Air Volume	Instrument: ICP09 Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)	
Analyte	Result (ug/sample)	Result (mg/m <sup>3</sup> )	RL (ug/sample)	
Thallium	<1.3	<0.0010	1.3	
Titanium	<0.075	<0.000060	0.075	
Vanadium	<0.075	<0.000060	0.075	
Yttrium	<0.075	<0.000060	0.075	
Zinc	<0.50	<0.00040	0.50	
Zirconium	<0.50	<0.00040	0.50	

Sample ID: 239C-M				Received: 07/26/2019	
Lab ID: 1921267010	Sampling Location: 2035000383				
Method: NIOSH 7303 Mod., MCE	San	Media: MCE Filter npling Info: Air Volume	1267.5 L	Instrument: ICP09 Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)	
Analyte	Result (ug/sample)	Result (mg/m³)	RL (ug/sample)		
Aluminum	<5.0	<0.0039	5.0		
Arsenic	<2.5	<0.0020	2.5		
Beryllium	<0.013	<0.000099	0.013		
Cadmium	<0.075	<0.000059	0.075		
Calcium	<15	<0.012	15		
Chromium	<1.3	<0.00099	1.3		
Cobalt	<0.075	<0.000059	0.075		
Copper	<0.53	<0.00041	0.53		
Iron	<5.0	<0.0039	5.0		
Lead	<1.3	<0.00099	1.3		
Lithium	<1.0	<0.00079	1.0		
Magnesium	<1.3	<0.00099	1.3		
Manganese	<0.13	<0.000099	0.13		
Molybdenum	<0.38	<0.00030	0.38		
Nickel	<0.13	<0.000099	0.13		
Phosphorus	<5.0	<0.0039	5.0		
Platinum	<3.8	<0.0030	3.8		
Selenium	<2.5	<0.0020	2.5		
Silver	<0.25	<0.00020	0.25		
Sodium	<3.8	<0.0030	3.8		
Tellurium	<1.3	<0.00099	1.3		
Thallium	<1.3	<0.00099	1.3		
Titanium	<0.075	<0.000059	0.075		



Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 239C-M				Received: 07/26/2019		
Lab ID: 1921267010	Sampling Location: 2035000383					
Method: NIOSH 7303 Mod., MCE	Samp	Media: MCE Filter Ding Info: Air Volume	Instrument: ICP09 Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)			
Analida	Result					
	(ug/sample)	Result (mg/m³)	RL (ug/sample)			
Vahadium	<0.075	<0.000059	0.075			
Yttrium	<0.075	<0.000059	0.075			
	<0.50	<0.00039	0.50			
Zirconium	<0.50	<0.00039	0.50			
Sample ID: 239D-M				Received: 07/26/2019		
Lab ID: 1921267011	Sa	ampling Location: 203	35000383			
Method: NIOSH 7303 Mod., MCE	Samp	Media: MCE Filter Ding Info: Air Volume	1267.53 L	Instrument: ICP09 Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)		
	Result			, , , , , , , , , , , , , , , , , , ,		
Analyte	(ug/sample)	Result (mg/m <sup>3</sup> )	RL (ug/sample)			
Aluminum	<5.0	<0.0039	5.0			
Arsenic	<2.5	<0.0020	2.5			
Beryllium	<0.013	<0.000099	0.013			
Cadmium	<0.075	<0.000059	0.075			
Calcium	<15	<0.012	15			
Chromium	<1.3	<0.00099	1.3			
Cobalt	<0.075	<0.000059	0.075			
Copper	<0.53	<0.00041	0.53			
Iron	<5.0	<0.0039	5.0			
Lead	<1.3	<0.00099	1.3			
Lithium	<1.0	<0.00079	1.0			
Magnesium	<1.3	<0.00099	1.3			
Manganese	<0.13	<0.000099	0.13			
Molybdenum	<0.38	<0.00030	0.38			
Nickel	<0.13	<0.000099	0.13			
Phosphorus	<5.0	<0.0039	5.0			
Platinum	<3.8	<0.0030	3.8			
Selenium	<2.5	<0.0020	2.5			
Silver	<0.25	<0.00020	0.25			
Sodium	<3.8	<0.0030	3.8			
Tellurium	<1.3	<0.00099	1.3			
Thallium	<1.3	<0.00099	1.3			
Titanium	<0.075	<0.000059	0.075			
Vanadium	<0.075	<0.000059	0.075			
Yttrium	<0.075	<0.000059	0.075			



Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

-						
Sample ID: 239D-M				Received: 07/26/2019		
Lab ID: 1921267011	Sampling Location: 2035000383					
Method: NIOSH 7303 Mod., MCE	Samp	Media: MCE Filter bling Info: Air Volume	1267.53 L	Instrument: ICP09 Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)		
Analyte	Result (ug/sample)	Result (mg/m³)	RL (ug/sample)			
Zinc	<0.50	<0.00039	0.50			
Zirconium	<0.50	<0.00039	0.50			
Sample ID: <b>FB-M</b>				Received: 07/26/2019		
Lab ID: 1921267012	Sa	ampling Location: 203	35000383			
Method: NIOSH 7303 Mod., MCE		Media: MCE Filter		Instrument: ICP09		
	Samp	oling Info: Air Volume	Not Applicable	Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)		
Analyte	Result (ug/sample)	Result (mg/m <sup>3</sup> )	RL (ug/sample)			
Aluminum	<5.0	NA	5.0			
Arsenic	<2.5	NA	2.5			
Beryllium	<0.013	NA	0.013			
Cadmium	<0.075	NA	0.075			
Calcium	<15	NA	15			
Chromium	<1.3	NA	1.3			
Cobalt	<0.075	NA	0.075			
Copper	<0.53	NA	0.53			
Iron	<5.0	NA	5.0			
Lead	<1.3	NA	1.3			
Lithium	<1.0	NA	1.0			
Magnesium	<1.3	NA	1.3			
Manganese	<0.13	NA	0.13			
Molybdenum	<0.38	NA	0.38			
Nickel	<0.13	NA	0.13			
Phosphorus	<5.0	NA	5.0			
Platinum	<3.8	NA	3.8			
Selenium	<2.5	NA	2.5			
Silver	<0.25	NA	0.25			
Sodium	<3.8	NA	3.8			
Tellurium	<1.3	NA	1.3			
Thallium	<1.3	NA	1.3			
Titanium	<0.075	NA	0.075			
Vanadium	< 0.075	NA	0.075			
Yttrium	<0.075	NA	0.075			
Zinc	<0.50	NA	0.50			
Zirconium	<0.50	NA	0.50			



Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

### **Analytical Results**

Sample ID: 239F-M				
Lab ID: 1921267013				Received: 07/26/2019
Method: NIOSH 7303 Mod., MCE	Samp	Media: MCE Filter Dling Info: Air Volume	1267.53 L	Instrument: ICP09 Prepared: 07/26/2019 (244429) Analyzed: 07/29/2019 (244525)
	Result			
Analyte	(ug/sample)	Result (mg/m³)	RL (ug/sample)	
Aluminum	<5.0	<0.0039	5.0	
Arsenic	<2.5	<0.0020	2.5	
Beryllium	<0.013	<0.000099	0.013	
Cadmium	<0.075	<0.000059	0.075	
Calcium	<15	<0.012	15	
Chromium	<1.3	<0.00099	1.3	
Cobalt	<0.075	<0.000059	0.075	
Copper	<0.53	<0.00041	0.53	
Iron	<5.0	<0.0039	5.0	
Lead	<1.3	<0.00099	1.3	
Lithium	<1.0	<0.00079	1.0	
Magnesium	<1.3	<0.00099	1.3	
Manganese	<0.13	<0.000099	0.13	
Molybdenum	<0.38	<0.00030	0.38	
Nickel	<0.13	<0.000099	0.13	
Phosphorus	<5.0	<0.0039	5.0	
Platinum	<3.8	<0.0030	3.8	
Selenium	<2.5	<0.0020	2.5	
Silver	<0.25	<0.00020	0.25	
Sodium	<3.8	<0.0030	3.8	
Tellurium	<1.3	<0.00099	1.3	
Thallium	<1.3	<0.00099	1.3	
Titanium	<0.075	<0.000059	0.075	
Vanadium	<0.075	<0.000059	0.075	
Yttrium	<0.075	<0.000059	0.075	
Zinc	<0.50	<0.00039	0.50	
Zirconium	<0.50	<0.00039	0.50	

### Comments

#### Quality Control: NIOSH 7303 Mod., MCE Prep - (HBN: 244429)

MCE LMB 665657 was above the reporting limit for sodium, so the LCS 665658, LCSD 665659, and RLVS 665660 results have been media blank corrected for sodium with LMB 665657.

The sodium recoveries for LCS 665658 and LCSD 665659 are outside of historical limits but within method limits of +/- 20%, so the data is reported as is without further comment.



Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

**Report Authorization** (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
NIOSH 5528	/S/ David Teynor	/S/ Thomas J. Masoian
	07/29/2019 11:00	07/29/2019 13:07
NIOSH 7202 Mod. MCE	/S/ Peter P. Steen	/S/ Oliver Anderson
NIOSH 7303 MOG., MICE	07/29/2019 13:29	07/29/2019 15:51

#### Laboratory Contact Information

ALS Environmental	Phone: (801) 266-7700
960 W Levoy Drive	Email: alslt.lab@ALSGlobal.com
Salt Lake City, Utah 84123	Web: www.alsslc.com

#### General Lab Comments

The results provided in this report relate only to the items tested. Samples were received in acceptable condition unless otherwise noted. Samples have not been blank corrected unless otherwise noted. This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L17-506	http://www.pjlabs.com
	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com
	Utah (TNI)	UT00953	http://lams.nelac-institute.org/search
	Nevada (TNI)	UT00953201-1	https://ndep.nv.gov/water/lab-certification
	lowa (TNI)	IA# 376	http://www.shl.uiowa.edu/labcert/idnr/
	Kansas	E-10416	http://www.kdheks.gov/envlab/disclaimer.html
	Oklahoma (TNI)	IJ# 9980	http://www.deq.state.ok.us/CSDnew/labcert.htm
	Texas (TNI)	T104704456-18-9	https://www.tceq.texas.gov/assets/public/compliance/compliance_sup port/qa/txnelap_lab_list.pdf
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L18-606	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Lab oratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com



### Workorder: 34-1921267

Client Project ID: 2035000383 Purchase Order: 2035000383 Project Manager: Paul Pope

#### Definitions

- LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.
- LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.
- ND = Not Detected, Testing result not detected above the LOD or LOQ.
- NA = Not Applicable.
- \*\* No result could be reported, see sample comments for details.
- < Means this testing result is less than the numerical value.

() This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

, 192	1267			ICAL REQUEST FORM
				AR Status
			RESUL	tatus Requested - ADDITIONAL CHARGE
(Al	_S)		CONTA	DATE CT ALS SALT LAKE PRIOR TO SENDING SAMPLES
2. Date 7/2.5/1	9 Purchase Order No.	20350	00383	4. Quote No.
3. Company Name	ATL LORD SE	NICES		ALS Project Manager
Address 898	SE Alichal	15 AM		5. Sample Collection
(entermin	1. CD 801	<u>, , , , , , , , , , , , , , , , , , , </u>		Sampling Site
Person to Contact	Kari Yester			Industrial Process
Telephone (	720-532.	-2.2.53		Date of Collection
Fax Telephone (	<u> </u>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Time Collected
F-mail Address	ani unter Art	tras cr	) (2)	Date of Shipment
Billing Address (if diffe	erent from above)	93.00	97 ° 8	Chain of Custody No
Diming Address (in dime	sent non above)			How did you first loorn shout AI \$2
		<u> </u>		
· · · · · · · · · · · · · · · · · · ·				
7. REQUEST FOR ANA	LYSES			1 1
Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known Units**
	1 240-VOC	Snama	61	EPATO-15+TIC'S
4	240K-VOC			
	1 239 C-VOC			
¥	239D-VOC			
	239F-VOC			
1	EXT-VOC	V	V	
706-ST	240-SVOC	OVS-7	538.58	EPA 8240, Full List, SVUL'S
	240K-SVOC	1	491.0	
4	2396-SVOC		499.4	
	1239D-SVOC		538.0	
	LS9F-SVOC		204	
	EXI-SVOC	V	511.46	· · · · · · · · · · · · · · · · · · ·
	Blame.			
* Specify: Solid sorbent ** 1. μg/sample 2. mg/r Comments <b>μ</b>	tube, e.g. Charcoal; Filter typ n <sup>3</sup> 3. ppm 4. % 5. μg/n e. add lab bla NAA eA	1 be; Impinger so n <sup>3</sup> 6( <b>ank for</b> blank	lution; Bulk sample (other) Please in SVOCS	e; Blood; Urine; Tissue; Soil; Water; Other dicate one or more units in the column entitled Units** (EPA 8270, full list)
Possible Contamination a 7. Chain of Custody (Or	nd/or Chemical Hazards		<u>} vv</u>	
Relinquished by				Date/Time 7/25/19 1800
Received by	unter Juss	ler		Date/Time 07-01649 9155
Relinquished by	U	1		Date/Time

960 West LeVoy Drive / Salt Lake City, UT 84123

Received by

800-356-9135 or 801-266-7700 / FAX: 801-268-9992

Date/Time

ALS Environmental

page lof 2

For lab use only	ANALYTICAL REQUEST FORM
	1. $\Box$ REGULAR Status $000000000000000000000000000000000000$
ALS	RUSH Status Requested - ADDITIONAL CHARGE RESULTS REQUIRED BY DATE CONTACT ALS SALT LAKE PRIOR TO SENDING SAMPLES
2. Date Purchase Order No	4. Quote No.
3. Company Name _ See Page (	ALS Project Manager
Address	5. Sample Collection
	Sampling Site
Person to Contact	Industrial Process
Telephone ( )	Date of Collection
Fax Telephone())	Time Collected
E-mail Address	Date of Shipment
Billing Address (if different from above)	Chain of Custody No.
	6. How did you first learn about ALS?

#### 7. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
)	240-M	25m 08m /	CF. 1280.1	NIOSH 7303, Metals Ponel B	
,	240K-M	, i	1242.23		
,	239C-M		12675		
r	239D-M		1257.5		
1	239 F-M		1267.53		
ك	FB-M	V	N/A		
			/		
* Specify: Solid sorbent tut	pe. e.g. Charcoal: Filter tvr	e: Impinger sol	ution: Bulk sample	: Blood: Urine: Tissue: Soil: Water: Other	
** 1. μg/sample 2. mg/m <sup>3</sup>	3. ppm 4. % 5. μg/m	1 <sup>3</sup> 6 (4	other) Please ind	licate one or more units in the column entitled Units**	
Comments				· · · · · · · · · · · · · · · · · · ·	

Possible Contamir	nation and/or Chemical Hazards	
7. Chain of Cust	ody (Optional)	
Relinquished by	422	Date/Time 7/25/19 1800
Received by	Auman Jassel	Date/Time D7-265-[9 9:55-
Relinquished by		Date/Time
Received by		Date/Time

960 West LeVoy Drive / Salt Lake City, UT 84123

800-356-9135 or 801-266-7700 / FAX: 801-268-9992 Inmental

ALS Environmental

**Canister Chain of Custody** 



Note Humber:     It II.       olicet Manager:     J. H.       olicet Manager:     J. H.       olicet Manager:     J. H.       consister Serial No:     Jane Cleaned       (aches of Fig.     Vacuum       (aches of Fig.     Vacuum       (aches of Fig.     Vacuum       (aches of Fig.     Vacuum       (aches of Fig.     (aches of Fig.       (aches of Fig.     (ach	Manual Child     Third     Manual age as erroned, attacted to Canterer, to opply artistive attacts       opper Manager     Third     Table Vocum     Find Vocum     Find Vocum     Find Vocum       Curriere Schnichtig     Des Chanted     Table Vocum     Find Vocum     Find Vocum       Curriere Schnichtig     Des Chanted     Table Schnichtig     Before Sundhig, Gin     Schnichtig, Gin     Object Chart Information       Child     Third     Third     Third     Third     Chart Chart     Object Chart Information       Child     Third     Third     Third     Third     Chart Chart     Object Chart Information       Child     Third     Third     Third     Third     Chart Chart     Object Chart Information       Child     Third     Third     Third     Third     Chart Chart     Object Chart       Child     Third     Third     Third     Third     Object Chart       Child     Third     Third     Third     Chart Chart       Child     Third     Third     Third     Chart       Child
Account After Consister Serial No.     Initial Vacuum Initial Vacuum     Initial Vacuum Initial Vacuum     Final Vacuum After Initial Vacuum     Final Vacuum     Initial Vacuum       ULUL     Initial     Vacuum     Orige vacuum     Orige vacuum     Vacuum     Vacuum     Initial Vacuum     Vacuum       ULUL     Initial     275     Initial     Orige vacuum     Orige vacuum     Vacuum     Vacuum     Vacuum       ULUL     Initial     275     Initial     Initial     Initial     Orige vacuum     Vacuum     Vacuum       VE Serial No.     Ag 3     Initial     Initial     Initial     Initial     Initial     Initial       VF Serial No.     Af 4     Initial     Initial     Initial     Initial     Initial       VF Serial No.     Af 4     Initial     Initial     Initial     Initial       F 4     Initial     Initial     Initial     Initial     Initial       F 4     Initial     Initial     Initial     Initial     Initial       F 4     Initial     Initial     Initial     Initial     Initial       F 5     Initial     Initial     Initial<	Determination     Triant Vacuum     Triant Vacuum     Triant Vacuum       Catister Serial No.     Date Clauned     (minis)     Refore Sampling (in. Sampling in. Sampling (in. Sampling in. Sampling in. Sampling (in. Sampling in. Samplin
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Marcel and solution     Marcel and solution     market and solution     Market and solution     Market and solution     Market and solution       101     101     20.5     market and solution       105     101     101     101     101     101     Market and solution     Market and solution       105     10     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10       105     10     10     10     10     10     10
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	304     31     1     1     1       37     0     0     0     0     0       37     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1 <td< td=""></td<>
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	R917     L     L     L       R32     L     L     L       R1     L     L     L       R1     L     L     L       R2     2     L     L       R32     L     L     L       R1     L     L     L       R4     L     L    <
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
VFR Serial No:     VFR Serial No: $\mathcal{F}\mathcal{F}\mathcal{O}$ $\mathcal{I}$ $\mathcal{F}\mathcal{I}$ $\mathcal{I}$ $\mathcal{F}\mathcal{I}$ $\mathcal{I}$ $\mathcal{F}\mathcal{I}$ $\mathcal{I}$ $\mathcal{F}\mathcal{I}$ $\mathcal{I}$ </td <td>VFR Serial No.:     VER Serial No.:       574     71       721     71       721     123/19       721     123/19       723     0       1050     0       115     1       115     1       116     1       117     1       118     1       119     1       1111     1       1111     &lt;</td>	VFR Serial No.:     VER Serial No.:       574     71       721     71       721     123/19       721     123/19       723     0       1050     0       115     1       115     1       116     1       117     1       118     1       119     1       1111     1       1111     <
VFR Serial No.: $\sim$ Iz-1 $\mathcal{M}$ $570$ $71z_3/q$ $\sim$ Iz-1 $\mathcal{M}$ $707$ $71z_3/q$ $\sim$ Iz-1 $\mathcal{M}$ $707$ $11z_3/q$ $\sim$ Iz-1 $\mathcal{M}$ $703$ $01z_1$ $01z_1$ $01z_1$ $702$ $11z_1$ $01z_1$ $11z_1$	VER Serial No.:     Maintain No.:     Maintain No.:     Maintain No.:     Maintain No.:       FFF     F12/19     T12/19     A.U.     No.:       FF1     F12/19     T12/19     A.U.       FF1     F12/19     D.I.     No.:       FF1     F12/19     D.I.     A.U.       FF1     F12/19     A.U.     No.:       FF2     A.U.     D.I.     A.U.       C53     V.I.     D.I.     No.:       S33     V.I.     D.I.     A.U.       Mudd Doct     T20/10     D.I.     A.C.       Mudd Doct     T20/10     D.I.     A.C.       Mudd Doct     T20/10     D.I.     A.C.
VFR Serial No.: $7$ (Fill Serial No.: $5$ ( $4$ O $7$ ( $2$ ( $3$ ) $7$ ( $7$ ) $7$ ( $2$ ( $3$ ) $7$ ( $7$ ) $7$ ( $2$ ( $3$ ) $7$ ( $1$ )	VER Serial No.       Model       Vert Registion       Model       M
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
子子 子儿 じらの じろい じろン しろン しろい しろい しろい しろい しろい しろい しろい しろい	Po F     Image: Second se
子げ しらう しいけう うろこ V うろこ V うろこ V うろこ V うろこ V うろこ V うろこ V Date/Time Chain-of-Custody Inquished By: (Signature) Chain-of-Custody Inquished By: (Signature) Chain-of-Custody	7ll $2ll$ <t< td=""></t<>
しろう し、 し、 し、 し、 し、 し、 し、 し、 し、 し、	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$
Cull 5     V     V       5 3 2     V     V       5 3 2     V       6     V       6     V       7     Original Field Sample Chain-of-Custody	しい 4 5 5 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
らえこ と Received BY: (Signature) Date/Time Received BY: (Signature) Custody Custody Al. A.	らえて ゆ Patrice Action Patrice Action Patrice Price Pr
nquished By: (Signature) Date/Time Received By: (Signature) Reason for Transfer/Storage Location	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
nquished By: (Signature) Date/Time Received By: (Signature) Reason for Transfer/Storage Location	nquished By: (Signature)       Original Field Sample Chain-of-Custody         nquished By: (Signature)       Date/Time         N       Date
Inquished By: (Signature) Date/Time Received By: (Signature) Reason for Transfer/Storage Location	Inquished BY: (Signature) Date/Time Accived BY: (Signature) Date/Time Received BY: (Signature) Date/Time Received BY: (Signature) Date/Time Received BY: (Signature) Reason for Transfer/Storage Location Transfer/Storage Location Transfer/Storage Location $\frac{1}{7}/23/19/2$ PW $\frac{1}{7}/23/19/2}$ PW $\frac{1}{7}/23/19/2$ PW $\frac{1}{7}/23/19/2}$ PW $\frac{1}{7}/23/19$
Inquished By: (Signature) Date/Time Received By: (Signature) Reason for Transfer/Storage Location	Inquished By: (Signature) Date/Time / Received By: (Signature) Reason for Transfer/Storage Location $\frac{1}{2} \int \frac{1}{2} \sqrt{2} \frac{1}{2} \sqrt{2} \frac{1}{2} \sqrt{2} \sqrt{2} \sqrt{2} \sqrt{2} \sqrt{2} \sqrt{2} \sqrt{2} $
	A Unit How Control       That A 2010       That A 2010       That A 2010         A Unit How Control       A Control       A 2010       A 2010       A 2010         A Unit How Control       A Control       A 2010       A 2010       A 2010         A Control       A 2010       A 2010       A 2010       A 2010         A Control       A 2010       A 2010       A 2010       A 2010         A control       A 2010       A 2010       A 2010       A 2010         A control       A 2010       A 2010       A 2010       A 2010         A control       A 2010       A 2010       A 2010       A 2010         A 2010       A 2010       A 2010       A 2010       A 2010         A 2010       A 2010       A 2010       A 2010       A 2010         A 2010       A 2010       A 2010       A 2010       A 2010         A 2010       A 2010       A 2010       A 2010       A 2010         A 2010       A 2010       A 2010       A 2010       A 2010         A 2010       A 2010       A 2010       A 2010       A 2010         A 2010       A 2010       A 2010       A 2010       A 2010         A 2010       A 2010 </td
Alle traver Treshit Jermin Junuar Junuar 01 00-19 425	anisters are kept for longer than the original project scheduled sampling, a \$40 per can - per week rental fee will be assessed. If a project is cancelled after ALS has shipped
	anisters are kept for longer than the original project scheduled sampling, a \$40 per can - per week rental fee will be assessed. If a project is cancelled after ALS has shipped



**NELAC NY 11769** NRPP 103216 AL NRSB ARL0017

EPA Method #402-R-92-004 Charcoal Canister NRPP Device Code 1159 NRSB Device Code 10320

Property Tested: Project # 7035000383

Kari Yenter 8985 East Nichols Avenue Suite 350 Centennial CO 80112

West Classroom 1050 10th Street Mall Denver CO 80204

Log Number	Device Number		Test Expo	sure Duratio	on:	Area Tested	Result pCi/L
2533239	656061	07/23/2019	10:57 am	07/25/2019	3:59 pm	Unit WC239C Second Floor Office	< 0.4
2533240	656048	07/23/2019	11:01 am	07/25/2019	4:00 pm	Unit WC239D Second Floor Office	< 0.4
2533241	656069	07/23/2019	11:02 am	07/25/2019	4:00 pm	Unit WC239D Second Floor Office Duplicate	< 0.4
2533242	656055	07/23/2019	11:03 am	07/25/2019	4:02 pm	Unit WC239F Second Floor Office	0.4
2533243	656041	07/23/2019	10:57 am	07/25/2019	3:59 pm	Unit WC239C Second Floor Office Blank	< 0.4

Comment: Averaging of duplicates is not available when one or both of the results is below the limit of detection (<0.4). ATC Group Services-CO was e-mailed a copy of this report. A copy of this report was emailed to kari\_yenter@atcgs.com.

Test Performed By: Kari Yenter

Distributed by: ATC Group Services-CO

Date Received: 07/26/2019 Date Logged:

07/26/2019

Date Analyzed: 07/26/2019 Date Reported: 07/26/2019

Report Reviewed By: \_\_\_\_\_\_ Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:** 

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.



Kari Yenter

Suite 350

ATC Group Services, LLC 8985 East Nichols Ave

Centennial, CO 80112

## ANALYTICAL REPORT

Report Date: July 29, 2019

Phone: 720-537-2253

E-mail: kari.yenter@atcgs.com

Workorder: **34-1921262** Project ID: 2035000383

Purchase Order: 2035000383 Project Manager Paul E. Pope

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
240-VOC	1921262001	NA	07/26/19	2035000383
240K-VOC	1921262003	NA	07/26/19	2035000383
239C-VOC	1921262004	NA	07/26/19	2035000383
239D-VOC	1921262005	NA	07/26/19	2035000383
239F-VOC	1921262006	NA	07/26/19	2035000383
EXT-VOC	1921262007	NA	07/26/19	2035000383

ADDRESS 960 West LeVoy Drive, Salt Lake City, Utah, 84123 USA | PHONE +1 801 266 7700 | FAX +1 801 268 9992 ALS GROUP USA, CORP. An ALS Limited Company

Environmental 🐊

# www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Mon, 07/29/19 9:28 AM



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results								
Sample ID: 240-VOC	Sampling Site: 2035000383					Received: 07/26/2019		
Lab ID: 1921262001	Media: Summa 6 Liter Canister							
Matrix: Air		Sampling Pa	arameter: Air Vol	ume 6 L				
Analysis Method - EPA TO-15		1 0						
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/43 Analyzed: 07/26/20	-15, Air 70 (HBN: 244462) 19 15:35	Instrument ID: 5975-K Percent Solid: NA Report Basis: Wet			
Analyte	Result (ppb)	Result (ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual		
Dichlorodifluoromethane	0.41	2.0	0.15	0.50	1	J		
Chloromethane	0.96	2.0	0.15	0.50	1			
Freon 114	ND	<1.0	0.15	0.50	1	U		
Vinyl chloride	ND	<0.38	0.15	0.50	1	U		
1,3-Butadiene	ND	<0.33	0.15	0.50	1	U		
Bromomethane	ND	<0.58	0.15	0.50	1	U		
Chloroethane	ND	<0.40	0.15	0.50	1	U		
Freon 11	0.36	2.0	0.15	0.50	1	J		
Freon 113	ND	<1.1	0.15	0.50	1	U		
1,1-Dichloroethene	ND	<0.59	0.15	0.50	1	U		
Acetone	12	29	0.30	1.0	1			
Carbon disulfide	ND	<0.47	0.15	0.50	1	U		
Methylene chloride	0.41	1.4	0.15	0.50	1	J		
trans-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U		
Methyl t-butyl ether	ND	<0.54	0.15	0.50	1	U		
Vinyl acetate	ND	<0.70	0.20	0.50	1	U		
2-Butanone	0.67	2.0	0.15	0.50	1			
cis-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U		
1,1-Dichloroethane	ND	<0.61	0.15	0.50	1	U		
Ethyl acetate	ND	<1.1	0.30	1.0	1	U		
Hexane	0.33	1.1	0.15	0.50	1	J		
Chloroform	ND	<0.73	0.15	0.50	1	U		
Tetrahydrofuran	ND	<0.44	0.15	0.50	1	U		
1,2-Dichloroethane	ND	<0.61	0.15	0.50	1	U		
1,1,1-Trichloroethane	ND	<0.82	0.15	0.50	1	U		
Carbon tetrachloride	ND	<0.94	0.15	0.50	1	U		
Benzene	0.2	0.63	0.15	0.50	1	J		
Cyclohexane	ND	<0.52	0.15	0.50	1	U		
Trichloroethene	ND	<0.81	0.15	0.50	1	U		
1,2-Dichloropropane	ND	<0.73	0.15	0.50	1	U		
Bromodichloromethane	ND	<1.0	0.15	0.50	1	U		
Heptane	ND	<0.61	0.15	0.50	1	U		
cis-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U		
4-Methyl-2-pentanone	ND	<0.61	0.15	0.50	1	U		
trans-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U		



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: 240-VOC	Sampling Site: 2035000383 Received: 07/26/2019					
Lab ID: 1921262001			Media: Summa	a 6 Liter Canister		
Matrix: Air		Sampling Pa	arameter: Air Volu	ume 6 L		
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/437 Analyzed: 07/26/207	15, Air 70 (HBN: 244462) 19 15:35	Instrument ID: 5975-K Percent Solid: NA Report Basis: Wet	
Analyte	Result (ppb)	Result (ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual
1,1,2-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Toluene	0.60	2.3	0.15	0.50	1	
2-Hexanone	ND	<1.3	0.32	1.0	1	U
Tetrachloroethene	ND	<1.0	0.15	0.50	1	U
Dibromochloromethane	ND	<1.3	0.15	0.50	1	U
1,2-Dibromoethane	ND	<1.2	0.15	0.50	1	U
Chlorobenzene	ND	<0.69	0.15	0.50	1	U
Ethyl benzene	ND	<0.65	0.15	0.50	1	U
m,p-Xylene	ND	<1.3	0.30	1.0	1	U
o-Xylene	ND	<0.65	0.15	0.50	1	U
Styrene	ND	<1.3	0.30	1.0	1	U
Bromoform	ND	<3.1	0.30	1.0	1	U
1,1,2,2-Tetrachloroethane	ND	<1.0	0.15	0.50	1	U
4-Ethyl toluene	ND	<1.5	0.30	1.0	1	U
1,3,5-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,2,4-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,3-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,4-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
Benzyl chloride	ND	<1.9	0.37	1.0	1	U
1,2-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,2,4-Trichlorobenzene	ND	<3.1	0.42	1.0	1	U
Hexachlorobutadiene	ND	<3.2	0.30	1.0	1	U
Analysis Method - EPA TO-15		T				
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/437 Analyzed: 07/26/207	15, Air 70 (HBN: 244462) 19 15:35	Percent Report	Solid: NA Basis: Wet
		Retention				
Tentatively Identified Compound	Result (ppb)	Time	Dilution	Qual		
Isobutane	3.0	5.40	1	J		
Ethanol	11	6.12	1	J		



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results							
Sample ID: 240K-VOC		Received: 07/26/2019					
Lab ID: 1921262003			Media: Summa	a 6 Liter Canister			
Matrix: Air		Sampling P	arameter: Air Volu	ume 6 L			
Analysis Method - EPA TO-15							
Preparation: Not Applicable			Analysis: EPA TO-	15, Air	Instrum	ent ID: 5975-K	
			Analyzed: 07/26/20	70 (HBN: 244462) 19 16:15	Percent Solid: NA		
		Result	Analyzeu. 01/20/20	10.10	Report	Dasis. Wet	
Analyte	Result (ppb)	(ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual	
Dichlorodifluoromethane	0.42	2.1	0.15	0.50	1	J	
Chloromethane	0.98	2.0	0.15	0.50	1		
Freon 114	ND	<1.0	0.15	0.50	1	U	
Vinyl chloride	ND	<0.38	0.15	0.50	1	U	
1,3-Butadiene	ND	<0.33	0.15	0.50	1	U	
Bromomethane	ND	<0.58	0.15	0.50	1	U	
Chloroethane	ND	<0.40	0.15	0.50	1	U	
Freon 11	0.35	2.0	0.15	0.50	1	J	
Freon 113	ND	<1.1	0.15	0.50	1	U	
1,1-Dichloroethene	ND	<0.59	0.15	0.50	1	U	
Acetone	13	30	0.30	1.0	1		
Carbon disulfide	ND	<0.47	0.15	0.50	1	U	
Methylene chloride	0.39	1.4	0.15	0.50	1	J	
trans-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U	
Methyl t-butyl ether	ND	<0.54	0.15	0.50	1	U	
Vinyl acetate	ND	<0.70	0.20	0.50	1	U	
2-Butanone	0.67	2.0	0.15	0.50	1		
cis-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U	
1,1-Dichloroethane	ND	<0.61	0.15	0.50	1	U	
Ethyl acetate	ND	<1.1	0.30	1.0	1	U	
Hexane	0.33	1.2	0.15	0.50	1	J	
Chloroform	ND	<0.73	0.15	0.50	1	U	
Tetrahydrofuran	ND	<0.44	0.15	0.50	1	U	
1,2-Dichloroethane	ND	<0.61	0.15	0.50	1	U	
1,1,1-Trichloroethane	ND	<0.82	0.15	0.50	1	U	
Carbon tetrachloride	ND	<0.94	0.15	0.50	1	U	
Benzene	0.2	0.64	0.15	0.50	1	J	
Cyclohexane	ND	<0.52	0.15	0.50	1	U	
Trichloroethene	ND	<0.81	0.15	0.50	1	U	
1,2-Dichloropropane	ND	<0.73	0.15	0.50	1	U	
Bromodichloromethane	ND	<1.0	0.15	0.50	1	U	
Heptane	ND	<0.61	0.15	0.50	1	U	
cis-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U	
4-Methyl-2-pentanone	ND	<0.61	0.15	0.50	1	U	
trans-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U	



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: 240K-VOC	Sampling Site: 2035000383 Received: 07/26/2019					
Lab ID: 1921262003			Media: Summ	a 6 Liter Canister		
Matrix: Air		Sampling Pa	arameter: Air Vol	ume 6 L		
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/43 Analyzed: 07/26/20	-15, Air 70 (HBN: 244462) 19 16:15	Instrument ID: 5975-K Percent Solid: NA Report Basis: Wet	
Analyte	Result (ppb)	Result (ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual
1,1,2-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Toluene	0.63	2.4	0.15	0.50	1	
2-Hexanone	ND	<1.3	0.32	1.0	1	U
Tetrachloroethene	ND	<1.0	0.15	0.50	1	U
Dibromochloromethane	ND	<1.3	0.15	0.50	1	U
1,2-Dibromoethane	ND	<1.2	0.15	0.50	1	U
Chlorobenzene	ND	<0.69	0.15	0.50	1	U
Ethyl benzene	ND	<0.65	0.15	0.50	1	U
m,p-Xylene	0.3	1.3	0.30	1.0	1	J
o-Xylene	ND	<0.65	0.15	0.50	1	U
Styrene	ND	<1.3	0.30	1.0	1	U
Bromoform	ND	<3.1	0.30	1.0	1	U
1,1,2,2-Tetrachloroethane	ND	<1.0	0.15	0.50	1	U
4-Ethyl toluene	ND	<1.5	0.30	1.0	1	U
1,3,5-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,2,4-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,3-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,4-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
Benzyl chloride	ND	<1.9	0.37	1.0	1	U
1,2-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,2,4-Trichlorobenzene	ND	<3.1	0.42	1.0	1	U
Hexachlorobutadiene	ND	<3.2	0.30	1.0	1	U
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/43	-15, Air 70 (HBN: 244462) 19 16:15	Instrume Percent Report	Solid: NA
		Retention	Anaryzeu. 07/20/20		NepOIL	<b>Dubib.</b> Wet
Tentatively Identified Compound	Result (ppb)	Time	Dilution	Qual		
	3.2	5.39	1	J		
Ethanol	12	6.12	1	J		



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: 239C-VOC	Sampling Site: 2035000383 Receiv					07/26/2019
Lab ID: 1921262004	Media: Summa 6 Liter Canister					
Matrix: Air		Sampling Pa	arameter: Air Volu	ume 6 L		
Analysis Method - EPA TO-15		1 0				
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/43 Analyzed: 07/26/20	15, Air 70 (HBN: 244462) 19 16:55	Instrument ID: 5975-K Percent Solid: NA Report Basis: Wet	
Analyte	Result (ppb)	Result (ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual
Dichlorodifluoromethane	0.4	2.0	0.15	0.50	1	J
Chloromethane	0.95	2.0	0.15	0.50	1	
Freon 114	ND	<1.0	0.15	0.50	1	U
Vinyl chloride	ND	<0.38	0.15	0.50	1	U
1,3-Butadiene	ND	<0.33	0.15	0.50	1	U
Bromomethane	ND	<0.58	0.15	0.50	1	U
Chloroethane	ND	<0.40	0.15	0.50	1	U
Freon 11	0.36	2.0	0.15	0.50	1	J
Freon 113	ND	<1.1	0.15	0.50	1	U
1,1-Dichloroethene	ND	<0.59	0.15	0.50	1	U
Acetone	13	32	0.30	1.0	1	
Carbon disulfide	ND	<0.47	0.15	0.50	1	U
Methylene chloride	0.44	1.5	0.15	0.50	1	J
trans-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U
Methyl t-butyl ether	ND	<0.54	0.15	0.50	1	U
Vinyl acetate	ND	<0.70	0.20	0.50	1	U
2-Butanone	0.85	2.5	0.15	0.50	1	
cis-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U
1,1-Dichloroethane	ND	<0.61	0.15	0.50	1	U
Ethyl acetate	0.39	1.4	0.30	1.0	1	J
Hexane	0.38	1.3	0.15	0.50	1	J
Chloroform	ND	<0.73	0.15	0.50	1	U
Tetrahydrofuran	ND	<0.44	0.15	0.50	1	U
1,2-Dichloroethane	ND	<0.61	0.15	0.50	1	U
1,1,1-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Carbon tetrachloride	ND	<0.94	0.15	0.50	1	U
Benzene	0.22	0.72	0.15	0.50	1	J
Cyclohexane	0.46	1.6	0.15	0.50	1	J
Trichloroethene	ND	<0.81	0.15	0.50	1	U
1,2-Dichloropropane	ND	<0.73	0.15	0.50	1	U
Bromodichloromethane	ND	<1.0	0.15	0.50	1	U
Heptane	ND	<0.61	0.15	0.50	1	U
cis-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U
4-Methyl-2-pentanone	ND	<0.61	0.15	0.50	1	U
trans-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U


Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: 239C-VOC	Sampling Site: 2035000383 Received: 07/26/2019					07/26/2019
Lab ID: 1921262004			Media: Summa	a 6 Liter Canister		
Matrix: Air		Sampling Pa	arameter: Air Volu	ume 6 L		
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/437 Analyzed: 07/26/207	15, Air 70 (HBN: 244462) 19 16:55	Instrume Percent Report	ent ID: 5975-K Solid: NA Basis: Wet
Analyte	Result (ppb)	Result (ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual
1,1,2-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Toluene	1.0	3.9	0.15	0.50	1	
2-Hexanone	ND	<1.3	0.32	1.0	1	U
Tetrachloroethene	ND	<1.0	0.15	0.50	1	U
Dibromochloromethane	ND	<1.3	0.15	0.50	1	U
1,2-Dibromoethane	ND	<1.2	0.15	0.50	1	U
Chlorobenzene	ND	<0.69	0.15	0.50	1	U
Ethyl benzene	ND	<0.65	0.15	0.50	1	U
m,p-Xylene	0.38	1.6	0.30	1.0	1	J
o-Xylene	ND	<0.65	0.15	0.50	1	U
Styrene	ND	<1.3	0.30	1.0	1	U
Bromoform	ND	<3.1	0.30	1.0	1	U
1,1,2,2-Tetrachloroethane	ND	<1.0	0.15	0.50	1	U
4-Ethyl toluene	ND	<1.5	0.30	1.0	1	U
1,3,5-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,2,4-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,3-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,4-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
Benzyl chloride	ND	<1.9	0.37	1.0	1	U
1,2-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,2,4-Trichlorobenzene	ND	<3.1	0.42	1.0	1	U
Hexachlorobutadiene	ND	<3.2	0.30	1.0	1	U
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/437	15, Air 70 (HBN: 244462) 19 16:55	Percent Percent	Solid: NA
		Retention			Nepon	<b>Budid</b> . Wot
Tentatively Identified Compound	Result (ppb)	Time	Dilution	Qual		
Isobutane	3.6	5.39	1	J		
Ethanol	13	6.11	1	J		



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: 239D-VOC	Sampling Site: 2035000383					: 07/26/2019
Lab ID: 1921262005			Media: Summa	a 6 Liter Canister		
Matrix: Air		Sampling P	arameter: Air Volu	ume 6 L		
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO-	15, Air	Instrum	ent ID: 5975-K
			Batch: IVOA/43/	70 (HBN: 244462) 19 17:35	Percent	Solid: NA Basis: Wet
		Result	Analyzeu. 01/20/20	13 17.00	Report	Dasis. Wet
Analyte	Result (ppb)	(ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual
Dichlorodifluoromethane	0.42	2.1	0.15	0.50	1	J
Chloromethane	0.95	2.0	0.15	0.50	1	
Freon 114	ND	<1.0	0.15	0.50	1	U
Vinyl chloride	ND	<0.38	0.15	0.50	1	U
1,3-Butadiene	ND	<0.33	0.15	0.50	1	U
Bromomethane	ND	<0.58	0.15	0.50	1	U
Chloroethane	ND	<0.40	0.15	0.50	1	U
Freon 11	0.38	2.1	0.15	0.50	1	J
Freon 113	ND	<1.1	0.15	0.50	1	U
1,1-Dichloroethene	ND	<0.59	0.15	0.50	1	U
Acetone	12	27	0.30	1.0	1	
Carbon disulfide	ND	<0.47	0.15	0.50	1	U
Methylene chloride	0.42	1.5	0.15	0.50	1	J
trans-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U
Methyl t-butyl ether	ND	<0.54	0.15	0.50	1	U
Vinyl acetate	ND	<0.70	0.20	0.50	1	U
2-Butanone	0.64	1.9	0.15	0.50	1	
cis-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U
1,1-Dichloroethane	ND	<0.61	0.15	0.50	1	U
Ethyl acetate	ND	<1.1	0.30	1.0	1	U
Hexane	0.36	1.3	0.15	0.50	1	J
Chloroform	ND	<0.73	0.15	0.50	1	U
Tetrahydrofuran	ND	<0.44	0.15	0.50	1	U
1,2-Dichloroethane	ND	<0.61	0.15	0.50	1	U
1,1,1-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Carbon tetrachloride	ND	<0.94	0.15	0.50	1	U
Benzene	0.21	0.66	0.15	0.50	1	J
Cyclohexane	ND	<0.52	0.15	0.50	1	U
Trichloroethene	ND	<0.81	0.15	0.50	1	U
1,2-Dichloropropane	ND	<0.73	0.15	0.50	1	U
Bromodichloromethane	ND	<1.0	0.15	0.50	1	U
Heptane	ND	<0.61	0.15	0.50	1	U
cis-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U
4-Methyl-2-pentanone	ND	<0.61	0.15	0.50	1	U
trans-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U

#### **Results Continued on Next Page**



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: 239D-VOC	Sampling Site: 2035000383 Received: 07/26/2019					07/26/2019
Lab ID: 1921262005	Media: Summa 6 Liter Canister					
Matrix: Air		Sampling Pa	arameter: Air Volu	ime 6 L		
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO-1 Batch: IVOA/437 Analyzed: 07/26/201	5, Air 0 (HBN: 244462) 9 17:35	Instrume Percent Report	ent ID: 5975-K Solid: NA Basis: Wet
Analyte	Result (ppb)	Result (ug/m <sup>3</sup> )	MDL (ppb)	RL (ppb)	Dilution	Qual
1,1,2-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Toluene	0.67	2.5	0.15	0.50	1	
2-Hexanone	ND	<1.3	0.32	1.0	1	U
Tetrachloroethene	ND	<1.0	0.15	0.50	1	U
Dibromochloromethane	ND	<1.3	0.15	0.50	1	U
1,2-Dibromoethane	ND	<1.2	0.15	0.50	1	U
Chlorobenzene	ND	<0.69	0.15	0.50	1	U
Ethyl benzene	ND	<0.65	0.15	0.50	1	U
m,p-Xylene	0.3	1.3	0.30	1.0	1	J
o-Xylene	ND	<0.65	0.15	0.50	1	U
Styrene	ND	<1.3	0.30	1.0	1	U
Bromoform	ND	<3.1	0.30	1.0	1	U
1,1,2,2-Tetrachloroethane	ND	<1.0	0.15	0.50	1	U
4-Ethyl toluene	ND	<1.5	0.30	1.0	1	U
1,3,5-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,2,4-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,3-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,4-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
Benzyl chloride	ND	<1.9	0.37	1.0	1	U
1,2-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,2,4-Trichlorobenzene	ND	<3.1	0.42	1.0	1	U
Hexachlorobutadiene	ND	<3.2	0.30	1.0	1	U
Analysis Method - EPA TO-15						
Preparation: Not Applicable					Instrum	ant ID: 5975-K
			Analysis: EPA 10-1 Batch: IVOA/4370 Analyzed: 07/26/2011	0 (HBN: 244462) 9 17:35	Percent	Solid: NA Basis: Wet
Tentatively Identified Compound	Result (ppb)	Retention	Analysis: EPA TO-1 Batch: IVOA/437 Analyzed: 07/26/201 Dilution	0 (HBN: 244462) 9 17:35 Qual	Percent Report	Solid: NA Basis: Wet
Tentatively Identified Compound	Result (ppb)	Retention Time 5,39	Analysis: EPA TO-1 Batch: IVOA/4374 Analyzed: 07/26/201 Dilution	0 (HBN: 244462) 9 17:35 Qual	Percent Report	Solid: NA Basis: Wet



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: 239F-VOC	Sampling Site: 2035000383					: 07/26/2019
Lab ID: 1921262006			Media: Summa	a 6 Liter Canister		
Matrix: Air	Sampling Parameter: Air Volume 6 L					
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO-	15, Air	Instrum	ent ID: 5975-K
			Batch: IVOA/437	70 (HBN: 244462) 19 18:15	Percent	Solid: NA Basis: Wet
		Result	Analyzed. 01/20/20	19 10.13	Кероп	Dasis. Wet
Analyte	Result (ppb)	(ug/m <sup>3</sup> )	MDL (ppb)	RL (ppb)	Dilution	Qual
Dichlorodifluoromethane	0.41	2.0	0.15	0.50	1	J
Chloromethane	0.94	1.9	0.15	0.50	1	
Freon 114	ND	<1.0	0.15	0.50	1	U
Vinyl chloride	ND	<0.38	0.15	0.50	1	U
1,3-Butadiene	ND	<0.33	0.15	0.50	1	U
Bromomethane	ND	<0.58	0.15	0.50	1	U
Chloroethane	ND	<0.40	0.15	0.50	1	U
Freon 11	0.34	1.9	0.15	0.50	1	J
Freon 113	ND	<1.1	0.15	0.50	1	U
1,1-Dichloroethene	ND	<0.59	0.15	0.50	1	U
Acetone	11	26	0.30	1.0	1	
Carbon disulfide	ND	<0.47	0.15	0.50	1	U
Methylene chloride	0.4	1.4	0.15	0.50	1	J
trans-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U
Methyl t-butyl ether	ND	<0.54	0.15	0.50	1	U
Vinyl acetate	ND	<0.70	0.20	0.50	1	U
2-Butanone	0.59	1.7	0.15	0.50	1	
cis-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U
1,1-Dichloroethane	ND	<0.61	0.15	0.50	1	U
Ethyl acetate	ND	<1.1	0.30	1.0	1	U
Hexane	0.31	1.1	0.15	0.50	1	J
Chloroform	ND	<0.73	0.15	0.50	1	U
Tetrahydrofuran	ND	<0.44	0.15	0.50	1	U
1,2-Dichloroethane	ND	<0.61	0.15	0.50	1	U
1,1,1-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Carbon tetrachloride	ND	<0.94	0.15	0.50	1	U
Benzene	0.18	0.58	0.15	0.50	1	J
Cyclohexane	ND	<0.52	0.15	0.50	1	U
Trichloroethene	ND	<0.81	0.15	0.50	1	U
1,2-Dichloropropane	ND	<0.73	0.15	0.50	1	U
Bromodichloromethane	ND	<1.0	0.15	0.50	1	U
Heptane	ND	<0.61	0.15	0.50	1	U
cis-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U
4-Methyl-2-pentanone	ND	<0.61	0.15	0.50	1	U
trans-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U

#### **Results Continued on Next Page**



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: 239F-VOC	Sampling Site: 2035000383 Received: 07/26/2019					07/26/2019
Lab ID: 1921262006	Media: Summa 6 Liter Canister					
Matrix: Air		Sampling Pa	arameter: Air Vol	ume 6 L		
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/43 Analyzed: 07/26/20	15, Air 70 (HBN: 244462) 19 18:15	Instrume Percent Report	ent ID: 5975-K Solid: NA Basis: Wet
Analyte	Result (ppb)	Result (ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual
1,1,2-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Toluene	0.55	2.1	0.15	0.50	1	
2-Hexanone	ND	<1.3	0.32	1.0	1	U
Tetrachloroethene	ND	<1.0	0.15	0.50	1	U
Dibromochloromethane	ND	<1.3	0.15	0.50	1	U
1,2-Dibromoethane	ND	<1.2	0.15	0.50	1	U
Chlorobenzene	ND	<0.69	0.15	0.50	1	U
Ethyl benzene	ND	<0.65	0.15	0.50	1	U
m,p-Xylene	ND	<1.3	0.30	1.0	1	U
o-Xylene	ND	<0.65	0.15	0.50	1	U
Styrene	ND	<1.3	0.30	1.0	1	U
Bromoform	ND	<3.1	0.30	1.0	1	U
1,1,2,2-Tetrachloroethane	ND	<1.0	0.15	0.50	1	U
4-Ethyl toluene	ND	<1.5	0.30	1.0	1	U
1,3,5-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,2,4-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,3-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,4-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
Benzyl chloride	ND	<1.9	0.37	1.0	1	U
1,2-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,2,4-Trichlorobenzene	ND	<3.1	0.42	1.0	1	U
Hexachlorobutadiene	ND	<3.2	0.30	1.0	1	U
Analysis Method - EPA TO-15		T				
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/43 Analyzed: 07/26/20	·15, Air 70 (HBN: 244462) 19 18:15	Instrume Percent Report	Solid: NA Basis: Wet
Tentatively Identified Compound	Result (ppb)	Retention Time	Dilution	Qual		
Isobutane	2.7	5.39	1	J		
Ethanol	11	6.11	1	J		



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results								
Sample ID: EXT-VOC	Sampling Site: 2035000383					Received: 07/26/2019		
Lab ID: 1921262007			Media: Summa	a 6 Liter Canister				
Matrix: Air		Sampling Pa	arameter: Air Vol	ume 6 L				
Analysis Method - EPA TO-15								
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/43 Analyzed: 07/26/20	15, Air 70 (HBN: 244462) 19 18:55	Instrum Percent Report	ent ID: 5975-K Solid: NA Basis: Wet		
Analyte	Result (ppb)	Result (ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual		
Dichlorodifluoromethane	0.39	1.9	0.15	0.50	1	J		
Chloromethane	0.99	2.1	0.15	0.50	1			
Freon 114	ND	<1.0	0.15	0.50	1	U		
Vinyl chloride	ND	<0.38	0.15	0.50	1	U		
1,3-Butadiene	ND	<0.33	0.15	0.50	1	U		
Bromomethane	ND	<0.58	0.15	0.50	1	U		
Chloroethane	ND	<0.40	0.15	0.50	1	U		
Freon 11	0.31	1.7	0.15	0.50	1	J		
Freon 113	ND	<1.1	0.15	0.50	1	U		
1,1-Dichloroethene	ND	<0.59	0.15	0.50	1	U		
Acetone	6.9	16	0.30	1.0	1			
Carbon disulfide	ND	<0.47	0.15	0.50	1	U		
Methylene chloride	0.35	1.2	0.15	0.50	1	J		
trans-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U		
Methyl t-butyl ether	ND	<0.54	0.15	0.50	1	U		
Vinyl acetate	ND	<0.70	0.20	0.50	1	U		
2-Butanone	0.44	1.3	0.15	0.50	1	J		
cis-1,2-Dichloroethene	ND	<0.59	0.15	0.50	1	U		
1,1-Dichloroethane	ND	<0.61	0.15	0.50	1	U		
Ethyl acetate	ND	<1.1	0.30	1.0	1	U		
Hexane	0.27	0.94	0.15	0.50	1	J		
Chloroform	ND	<0.73	0.15	0.50	1	U		
Tetrahydrofuran	ND	<0.44	0.15	0.50	1	U		
1,2-Dichloroethane	ND	<0.61	0.15	0.50	1	U		
1,1,1-Trichloroethane	ND	<0.82	0.15	0.50	1	U		
Carbon tetrachloride	ND	<0.94	0.15	0.50	1	U		
Benzene	ND	<0.48	0.15	0.50	1	U		
Cyclohexane	ND	<0.52	0.15	0.50	1	U		
Trichloroethene	ND	<0.81	0.15	0.50	1	U		
1,2-Dichloropropane	ND	<0.73	0.15	0.50	1	U		
Bromodichloromethane	ND	<1.0	0.15	0.50	1	U		
Heptane	ND	<0.61	0.15	0.50	1	U		
cis-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U		
4-Methyl-2-pentanone	ND	<0.61	0.15	0.50	1	U		
trans-1,3-Dichloropropene	ND	<0.68	0.15	0.50	1	U		

#### **Results Continued on Next Page**



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Analytical Results						
Sample ID: EXT-VOC	Sampling Site: 2035000383 Received: 07/26					: 07/26/2019
Lab ID: 1921262007	Media: Summa 6 Liter Canister					
Matrix: Air		Sampling Pa	arameter: Air Volu	ime 6 L		
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Analysis: EPA TO- Batch: IVOA/437	15, Air 0 (HBN: 244462)	Instrum Percent	ent ID: 5975-K Solid: NA
			Analyzed: 07/26/201	9 18:55	Report	Basis: Wet
Analyte	Result (ppb)	Result (ug/m³)	MDL (ppb)	RL (ppb)	Dilution	Qual
1,1,2-Trichloroethane	ND	<0.82	0.15	0.50	1	U
Toluene	0.43	1.6	0.15	0.50	1	J
2-Hexanone	ND	<1.3	0.32	1.0	1	U
Tetrachloroethene	ND	<1.0	0.15	0.50	1	U
Dibromochloromethane	ND	<1.3	0.15	0.50	1	U
1,2-Dibromoethane	ND	<1.2	0.15	0.50	1	U
Chlorobenzene	ND	<0.69	0.15	0.50	1	U
Ethyl benzene	ND	<0.65	0.15	0.50	1	U
m,p-Xylene	ND	<1.3	0.30	1.0	1	U
o-Xylene	ND	<0.65	0.15	0.50	1	U
Styrene	ND	<1.3	0.30	1.0	1	U
Bromoform	ND	<3.1	0.30	1.0	1	U
1,1,2,2-Tetrachloroethane	ND	<1.0	0.15	0.50	1	U
4-Ethyl toluene	ND	<1.5	0.30	1.0	1	U
1,3,5-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,2,4-Trimethylbenzene	ND	<1.5	0.30	1.0	1	U
1,3-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,4-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
Benzyl chloride	ND	<1.9	0.37	1.0	1	U
1,2-Dichlorobenzene	ND	<1.8	0.30	1.0	1	U
1,2,4-Trichlorobenzene	ND	<3.1	0.42	1.0	1	U
Hexachlorobutadiene	ND	<3.2	0.30	1.0	1	U
Analysis Method - EPA TO-15						
Preparation: Not Applicable			Batch: IVOA/437	15, Alf 10 (HBN: 244462)	Percent	Solid: NA
			Analyzed: 07/26/201	9 18:55	Report	Basis: Wet
		Retention			·	
Tentatively Identified Compound	Result (ppb)	Time	Dilution	Qual		
Acetaldehyde	5.4	5.38	1	J		

#### Comments

#### Quality Control: EPA TO-15 - (HBN: 244462)

The percent difference for target compounds in the CCV standard must be less than 30% relative to the target. The following compound(s) did not meet this criteria: Chloromethane, 1,3-Butadiene, Vinyl Acetate, Ethyl Acetate.

The LCS/LSCD did not meet performance limits for all compounds. This is not a method a requirement.



## Workorder: 34-1921262 Client: ATC Group Services, LLC Project Manager: Paul E. Pope

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA TO-15	/S/ Lisa M. Reid 07/28/2019 14:14	/S/ Christopher Q. Coleman 07/29/2019 09:16

#### Laboratory Contact Information

ALS Environmental	Phone: (801) 266-7700
960 W Levoy Drive	Email: alslt.lab@ALSGlobal.com
Salt Lake City, Utah 84123	Web: www.alsslc.com

#### General Lab Comments

The results provided in this report relate only to the items tested. Samples were received in acceptable condition unless otherwise noted. Samples have not been blank corrected unless otherwise noted. This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L17-506	http://www.pjlabs.com
	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com
	Utah (TNI)	UT00953	http://lams.nelac-institute.org/search
	Nevada (TNI)	UT00953201-1	https://ndep.nv.gov/water/lab-certification
	lowa (TNI)	IA# 376	http://www.shl.uiowa.edu/labcert/idnr/
	Kansas	E-10416	http://www.kdheks.gov/envlab/disclaimer.html
	Oklahoma (TNI)	IJ# 9980	http://www.deq.state.ok.us/CSDnew/labcert.htm
	Texas (TNI)	T104704456-18-9	https://www.tceq.texas.gov/assets/public/compliance/compliance_sup port/qa/txnelap_lab_list.pdf
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L18-606	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Lab oratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L17-507-R1	http://www.pjlabs.com



Workorder: 34-1921262

Client: ATC Group Services, LLC Project Manager: Paul E. Pope

#### **Result Symbol Definitions**

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.

RL = Reporting Limit, a verified value of method/media/instrument sensitivity.

CRDL = Contract Required Detection Limit

Reg. Limit = Regulatory Limit.

ND = Not Detected, testing result not detected above the MDL or RL.

< Means this testing result is less than the numerical value.

\*\* No result could be reported, see sample comments for details.

#### **Qualifier Symbol Definitions**

U = Qualifier indicates that the analyte was not detected above the MDL.

- J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
- B = Qualifier indicates that the analyte was detected in the blank.
- E = Qualifier indicates that the analyte result exceeds calibration range.
- P = Qualifier indicates that the RPD between the two columns is greater than 40%.

ų192.13	26 <b>;</b> 7		ANALYT	ICAL REQUEST FORM
ALS	5		RUSH S RESULT CONTAC	tatus Requested - ADDITIONAL CHARGE TS REQUIRED BY 7729719 DATE CT ALS SALT LAKE PRIOR TO SENDING SAMPLES
. Date 7/25/19 Pu	Irchase Order No.	203500	00383	4. Quote No
. Company Name <u>ATC</u>	- Grang Se	rvices		ALS Project Manager
Address <u>8985</u>	E. A/Rhol	S AVE		_ 5. Sample Collection
<u>Centemint</u>	0 801	1 d		Sampling Site
Person to Contact	ri Yenter	<u> </u>		Industrial Process
Telephone ( )	20-5 57.	-1125		Date of Collection
Fax Telephone ( )			······	Time Collected
E-mail Address <u>Kari</u> .	yenter @ at	cas.co	m	Date of Shipment
Billing Address (if different fr	rom above)	ø		Chain of Custody No.
				<b>6.</b> How did you first learn about ALS?
REQUEST FOR ANALYSE	S			
Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known Units**
12	40-VOC	Snama	61	EPATO-15+TIC'S 0423
* 2	40K-VOC		ļ	1 and
12	39 C-VOC			0301
. 7	200 LAC			0150
¥ U	MV-VIC	<u> </u>		

Specify: Solid sorbent tube, e.g. Charcoal; Filter type; Impinger solution; Bulk sample; Blood; Urine; Tissue; Soil; Water; Other \*\* 1. μg/sample 2. mg/m<sup>3</sup> 3. ppm 4. % 5. μg/m<sup>3</sup> 6. (other) Please indicate one or more units in the column entitled Units\*\* Comments <u>plcase add lab blank for sVOCs (EPA 8270, full list)</u>

491.0

499.4

538.0 521.04

399.76

V

OVS-7

Possible Contamination and/or Chemical Hazards	
7. Chain of Custody (Optional)	
Relinquished by	Date/Time 7/25/19 1800
Received by FUMAN Jussey	Date/Time 07-7649 955
Relinquished by	Date/Time
Received by	Date/Time

960 West LeVoy Drive / Salt Lake City, UT 84123

7.40 - SVOC

240K-SVOC

2396-SVOC 239D-SVOC

7.39F-SVOC

S1 loc

800-356-9135 or 801-266-7700 / FAX: 801-268-9992

538.58 EPA 8270, Full List, SVDC/S

Ì

V

**ALS Environmental** 

page 1 of 2

	For lab	use only ]			CAL REQUEST FORM
	AL	S)		RUSH-St RESULT CONTAC	atus Requested - ADDITIONAL CHARGE S REQUIRED BY DATE T ALS SALT LAKE PRIOR TO SENDING SAMPLES
2.	Date	_ Purchase Order No			4. Quote No
3.	Company Name	See Page (	The		ALS Project Manager
	Address	. /			5. Sample Collection
	· · · · · · · · · · · · · · · · · · ·			<u> </u>	Sampling Site
	Person to Contact				Industrial Process
	Telephone ( )			,	Date of Collection
	Fax Telephone())				Time Collected
	E-mail Address			······	Date of Shipment
	Billing Address (if differe	ent from above)			Chain of Custody No.
				·····	6. How did you first learn about ALS?
	<u></u>				
7.	REQUEST FOR ANAL	/SES			
	Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known Units**
	}	240-M	25m alman /	CE 1280.1	A/105H 7303, Metals Panel B
	د.	240K-M		1242.23	
	b	139C-M		12675	
	1	239D-M		1257.5	
	1	CS9F-M		147.25	
	đ	1 FB-/VI	V	N/11	V V

\* Specify: Solid sorbent tube, e.g. Charcoal; Filter type; Impinger solution; Bulk sample; Blood; Urine; Tissue; Soil; Water; Other
 \*\* 1. μg/sample 2. mg/m<sup>3</sup> 3. ppm 4. % 5. μg/m<sup>3</sup> 6. (other) Please indicate one or more units in the column entitled Units\*\*

Comments	
	-

Possible Contamination a	nd/or Chemical Hazards	
7. Chain of Custody (Or	Juonaly	
Relinquished by		Date/Time 2/25/19 1808
Received by	undan Jassel	Date/Time 07-05-[9 9]55
Relinquished by	V .	Date/Time
Received by	•	Date/Time
960 West LeVoy	Drive / Salt Lake City, UT 84123	800-356-9135 or 801-266-7700 / FAX: 801-268-9992
	ALS Er	vironmental

**ALS Environmental** 

poge 2 of 2

Client: ATC Grove	Servi	Ces	*	Please do not ap	ply adhesive labels dir	ectly on Canisters		
Order Number: 191195				Manilla tags are <sub>l</sub>	provided, attached to C	anisters for your conve	ience, to apply a	thesive labels
Project Manager: JH								
Canister Serial No.: Date	Cleaned	nitial Vacuum (inches of Hg vacuum)	VFR flow rate (ml/min)	Initials.	Field Vacuum Before Sampling (in.	Final Vacuum After Sampling (in. of Hg	Client Sample	Other Client Information
E 62M	\$///q	22 72 7		F				
004								
22								
20 Y								
1297 1								
23	G	Ŵ		G				
· VFR Serial No.:								
54 6 4	p( 23/)9		2 12,9	Æ				
4								
$ \mathcal{T}_{u} $								
000								
24								
N 255	45		¥	Ą				
			0	riginal Field Samp	le Chain-of-Custody			
Relinquished By: (Signature)	D	ate/Time / F	Received By: (Signat	ture)		Reason for Transfer/Stora	je Location	
CAPANT PULLY	-11	1 md 2/ 61/52/	aum	an tas	1001	07-Jo19 0	7:55	
<b>X</b>				C				
f canisters are kept for long ans, in addition to the cost	of the initial	riginal project si shipping, a \$40 •	cheduled samplii weekly rental fee	ng, a \$40 per ca will be chargec	n - per week rental fe I for each unused ca	ee will be assessed. If n until they are return	a project is can ed to ALS.	celled after ALS has shipped
			······		ici enell nimeer en			

**Canister Chain of Custody** 



.



Attn: Kari Yenter

Project: Z035000383

Suite 350

## **EMSL** Analytical, Inc.

1010 Yuma Street Denver, CO 80204 Tel/Fax: (303) 740-5700 / (303) 741-1400 http://www.EMSL.com / denverlab@emsl.com

ATC Group Services LLC

8985 East Nichols Avenue

Centennial. CO 80112

EMSL Order: 221906040 Customer ID: ATAS78 Customer PO: Project ID:

 Phone:
 (720) 257-8303

 Fax:
 (303) 799-3441

 Collected:
 07/25/2019

 Received:
 07/26/2019

 Analyzed:
 07/29/2019

Test Rep	ort: Air-O-Cell(⊺	M) Analysis of F	ungal Spores &	Particulates by	<b>Optical Microso</b>	copy (Methods I	MICRO-SOP-201	, ASTM D7391)	
Lab Sample Number: Client Sample ID: Volume (L):		221906040-000 EX-MD 75	1		221906040-0002 239C-MD 75	2		221906040-0003 239D-MD 75	5
Sample Location		OUTDOORS			OFFICE 239C			OFFICE 239D	
Spore Types	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total
Alternaria (Ulocladium)	1	40	0.5	-	-	-	-	-	-
Ascospores	4	200	2.7	-	-	-	-	-	-
Aspergillus/Penicillium	1	40	0.5	-	-	-	-	-	-
Basidiospores	123	5190	69.9	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	19	800	10.8	2	80	44.4	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	1	40	0.5	-	-	-	-	-	-
Myxomycetes++	25	1100	14.8	3	100	55.6	2	80	100
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	1*	10*	0.1	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Oidium	1*	10*	0.1	-	-	-	-	-	-
Total Fungi	176	7430	100	5	180	100	2	80	100
Hyphal Fragment	1*	10*	-	1*	10*	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	1*	10*	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

ech M

Melanie Rech, Laboratory Manager or other approved signatory

No discernable field blank was submitted with this group of samples.

Samples received in good condition unless otherwise noted. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X, "." Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility of sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.

Samples analyzed by EMSL Analytical, Inc. Denver, CO AIHA-LAP, LLC--EMLAP Accredited #189946

Initial report from: 07/29/2019 11:38:41

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com



Attn: Kari Yenter

Project: Z035000383

Suite 350

## **EMSL** Analytical, Inc.

1010 Yuma Street Denver, CO 80204 Tel/Fax: (303) 740-5700 / (303) 741-1400 http://www.EMSL.com / denverlab@emsl.com

ATC Group Services LLC

8985 East Nichols Avenue

Centennial. CO 80112

EMSL Order: 221906040 Customer ID: ATAS78 Customer PO: Project ID:

 Phone:
 (720) 257-8303

 Fax:
 (303) 799-3441

 Collected:
 07/25/2019

 Received:
 07/26/2019

 Analyzed:
 07/29/2019

Test Repo	ort: Air-O-Cell(⊺	M) Analysis of F	ungal Spores &	Particulates by	Optical Microso	copy (Methods I	MICRO-SOP-201	, ASTM D7391)	
Lab Sample Number: Client Sample ID: Volume (L):		221906040-0004 239F-MD 75	4		221906040-0005 240-MD 75	5		221906040-0006 EXT-MD2 75	3
Sample Location		OFFICE 239F		İ	COMMON 240		İ	OUTDOORS	
Spore Types	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	1	40	2.3
Ascospores	-	-	-	-	-	-	2	80	4.5
Aspergillus/Penicillium	-	-	-	-	-	-	16	680	38.4
Basidiospores	-	-	-	1	40	100	6	300	16.9
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	1*	10*	50	-	-	-	1	40	2.3
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1*	10*	50	-	-	-	15	630	35.6
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Total Fungi	2	20	100	1	40	100	41	1770	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	2	80	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

ech M

Melanie Rech, Laboratory Manager or other approved signatory

No discernable field blank was submitted with this group of samples.

Samples received in good condition unless otherwise noted. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X, "." Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility of sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.

Samples analyzed by EMSL Analytical, Inc. Denver, CO AIHA-LAP, LLC--EMLAP Accredited #189946

Initial report from: 07/29/2019 11:38:41

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

MIC\_M001\_0002\_0001 1.71 Printed: 07/31/2019 15:55 PM



# **EMSL** Analytical, Inc.

1010 Yuma St, Denver, CO 80204

Client: ATC Group Services LLC 8985 East Nichols Avenue Suite 350 Centennial, CO 80112 Attention: Kari Yenter

**Project:** Z035000383

EMSL Order ID: 221906040 Date Received: 07/26/2019 Date Analyzed: 07/29/2019 Date Reported: 07/29/2019

# **Dust Characterization (Level 1) - Relative Percent Composition (Method M280)**

Identification of Biological &	<b>Non-Biological Particles by</b>	• Optical Microscopy
Lab Sample Number	221906040-0007	221906040-0008
Client Sample ID	239C-TL	239D-TL
Sample Location	OFFICE 239C	OFFICE 239D
Sample Type	Tape	Таре
Particle Types	% of Total	% of Total
Particles of Plant Origin	-	-
Pollen	1	1
Fern/Moss Spores	-	-
Cellulose Fibers	12	9
Starch Particles	-	1
Trichomes	1	1
Other Plant Particles	1	1
Algae	-	-
Diatoms	-	-
Fungal Matter	3	14
Particles of Animal Origin	-	-
Skin Cells	26	22
Animal Hair	-	-
Mites	-	-
Insect Fragments	-	-
Non-Biological Particles	-	-
Opaque/Dark Particles	18	20
Glass Fibers	2	1
Synthetic Fibers	6	1
Translucent/Transparent Particles	18	14
Other Particles	12	15
Percentage Total	100	100

High levels of particulate can obscure each other and lead to inaccuracy. Identification of starch particles using this method is limited to particleswith a distinct hilum, fissures, or lamellae. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported aboveand may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities oranalytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless

 Report Date
 Report Revision

 7/29/2019
 R0

otherwise noted.

Revision Comments

Melanie Rech

Melanie Rech Laboratory Director



# **EMSL** Analytical, Inc.

1010 Yuma St, Denver, CO 80204

Client: ATC Group Services LLC 8985 East Nichols Avenue Suite 350 Centennial, CO 80112 Attention: Kari Yenter

**Project:** Z035000383

EMSL Order ID: 221906040 Date Received: 07/26/2019 Date Analyzed: 07/29/2019 Date Reported: 07/29/2019

## **Dust Characterization (Level 1) - Relative Percent Composition (Method M280)**

Identification of Biological &	<b>Non-Biological Particles by</b>	• Optical Microscopy
Lab Sample Number	221906040-0009	221906040-00010
Client Sample ID	239F-TL	240-TL
Sample Location	OFFICE 239F	COMMON 240
Sample Type	Tape	Tape
Particle Types	% of Total	% of Total
Particles of Plant Origin	-	-
Pollen	-	-
Fern/Moss Spores	-	-
Cellulose Fibers	17	6
Starch Particles	-	-
Trichomes	-	-
Other Plant Particles	1	-
Algae	-	-
Diatoms	-	-
Fungal Matter	-	1
Particles of Animal Origin	-	-
Skin Cells	1	15
Animal Hair	1	-
Mites	-	-
Insect Fragments	-	1
Non-Biological Particles	-	-
Opaque/Dark Particles	27	11
Glass Fibers	17	-
Synthetic Fibers	2	-
Translucent/Transparent Particles	10	35
Other Particles	24	31
Percentage Total	100	100

High levels of particulate can obscure each other and lead to inaccuracy. Identification of starch particles using this method is limited to particles with a distinct hilum, fissures, or lamellae. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Report DateReport Revision7/29/2019R0

Revision Comments

Melanie Rech

Melanie Rech Laboratory Director

OrderID: 2219	0	06	040	)
---------------	---	----	-----	---

EMSL ANALYTICA LASSANTORY PAUDUCES Company Name: 1 Street: 99 8 5	ATC	Microl EMSI 22 Group Services Chols Sie St	oiology C Order Nu Z 90 //C	hain of Custo mber (Lab Use Onl COCO EN Bit Third Party Bit	bdy y): ISL-Bill to i to is Differe illing requir	EN 20 CIN PH F c: Same nt note instruct es written au	ISL ANALYTIC 0 ROUTE 130 NAMINSON, N. ONE: (800) 22 AX:(856) 786- Different is ions in Comments thorization from	AL, INC. NORTH J 08077 0-3675 -0262 t third party.	
City: Centeron	ial	State/Province:	65	Zip/Postal Code:	BOIL	7	Country: )	SA	
Report To (Name)	Vac	Venter	-	Telephone #: 72	0-33	2~27	1 52		
Email Address: V		Martine and a co		Fax #:			Burchase O	rdor:	
Dreitest Name/Num		2 2 5 cm 2 G 2	s-avri	- Diagon Dravida D		- 	TEmail		
Hoject Name/Num		AN Broise	t Zin Code: 8	NAL Conne	esticut Sa	implae: 🗖	Commercial		
St	erile, So	dium Thiosulfate Prese	erved Bottle U	sed: Biocide Use	d in Sour	ce (specify			
Public	Nater Su	pply Samples: 🔲 Note	: All results m	ay automatically be	reported	to DOH if	required by st	ate.	
		Turnaro	und Time (TAT	) Options - Please (	Check				
🔲 3 Hour	<b>□6</b>	lour 24 Hour	48 Hour	72 Hour	_ [] 9	6 Hour	🗌 1 Week	2 Week	
			Microbiolo	gy Test Codes					
M001 Air-O-Cell	M	174 MoldSnap	M012 Pseudo	omonas aeruginosa (P/A	(***) T*)	M115 Sew M116 Sew	age Screen - Wa	ater (P/A***)	
M030 Micro 5	M	032 Allergenco-D	M015 Hetero	trophic Plate Count	')	M117 Sew	age Screen - Sw	rab (P/A***)	
M041 Fungal Direct E	xaminatio	n	M017 Total C	M017 Total Coliform & E. coli (Colilert P/A***) M013 Sewage Screen - Swab (MFT*) M018 Total Coliform & E. coli (MFT*) M133 Methiciliin-resistant Staph aureus					
M280 Dust Characteri	rmeration	vel-1	M114 Total C	M018 Total Coliform & E. coli (MFT) M133 Methicilin-resistant Staph. aureus (MRSA)					
M281 Dust Characteri	zation Lev	vel-2	(Colilert MPN	(Colilert MPN**) M031 Rapid-growing non-TB Mycobacteria					
M005 Viable Fungi- A M006 Viable Fungi- A Aspergillus, Cladospo Count) M007 Culturable fungi Count)_ M008 Culturable fungi	ir Samples ir Samples <i>rium, Stac</i> i - Surface	s (Genus ID & Count) s (Includes <i>Penicillium,</i> <i>hybotrys</i> Species ID & Samples (Genus ID &	M020 Fecal & M029 Entero M129 Entero M180 Real T M025 Sewag	Streptococcus (MFT*) cocci (MFT*) cocci (Enterolert P/A***) ime qPCR-ERMI 36 Pan e Screen –Water (MFT*	nel )	M014 Endo M044 Grou Dust Mite) Other See Legionella	otoxin Analysis ip Allergen (Cat, Analytical Price Analysis Pleas COC	Dog, Cockroach, Guide e use EMSL	
Penicillium, Aspergillu Species ID & Count) M009 Bacteria Culture M010 Bacteria Count M011 Bacteria Count	is, <i>Clados</i> e Gram Sta & ID - 3 M <u>&amp; ID - 5 M</u>	borium, Stachybotrys ain & Count ost Prominent ost Prominent	*MFT= Memt **MPN= Mos ***P/A= Pres	orane Filtration Techniqu t Probable Number ence/Absence	le	I			
Name of Sampler:				Signature of Sam	pler:				
Sample #	Samp	le Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (*C) (Lab Use Only)	
Example Ad		l CialdTea	Valation		1017	100 ml	9/1/13		
					MAA.	<b>100 IIIL</b> /	1/26/10		
2200 110	000	<u>avors</u>			1			·	
2371-MD	2044				╂─┨──┤		-		
250-MD	Ut 1	<u>u 2305</u>			╉╾╂╾		┞─┤──		
25-11-MD	VIL	<u>122 2575</u>			╢┯┨╾╾		+	>	
240790	<u>(pm</u>	<u>mon 240</u>			Sample	S Receive	d Chilled?	Yes / No	
Client Sample # (s	):	MA	l otal # of	Date: 7 7	/.a	Lab Use Onl	y) 218	<u> </u>	
Received /l ab)	$\mathcal{C}$	A Bert		Date: 7 7		Time: \	:1201	10	
Comments/Specia	Instruc	tions:	·	1000 4.20	<u>~e·\ /</u>	· · · · · · · · · · · · · · · · · · ·	· J OFI	<u>- 1</u>	
							. U	-1	
L		<u> </u>	Page 1	of <b>2</b>					

-

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this chain of custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

. .

Controlled Document - COC<sub>1</sub>34 Micro R8 11/14/2017

.

Page 1 Of 2



# Microbiology Chain of Custody

EMSL Order Number (Lab Use Only):

EMSL ANALYTICAL, INC. 200 ROUTE 130 NORTH CINNAMINSON, NJ 08077 PHONE: (800) 220-3675 FAX: (856) 786-0262

GAG

Additional pages of the chain of custody are only necessary if needed for additional sample information.

Sample #	Sam	le Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
239C-TL	00	ice 239C	Tape		M280	NA	7/25/19	, <sup>—</sup> 1
239D-TL	OCC	ice 239D					<u>'</u>	
239F-TL	060	ice 239F						
240-TL	Cor	mmon 240	$\downarrow$					•
EXT-MD2	Du	Idoors	AIR		Mooi	75L	$\checkmark$	
		1		DP DNP				
		•						
							<u> </u>	
		1						
				<u>_ PNP_</u>		<u></u>		
								<u>-</u>
l 		· · · · · · · · · · · · · · · · · · ·						
				P NP				
				□ P □NP				
		1	-	□ P □NP				
		1 1		□ P □NP				
	•=	4		□ P □NP				
·				P NP				
							·	
		1						÷
Commente/Special	Instruct	ions:						<u>'</u> '
oonments/opecial	matruG							
			<u> </u>					

# Page <u>2</u> of <u>2</u>

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this chain of custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

Controlled Document - COC 34 Micro R8 11/14/2017

.