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Setting the Standard in Comprehensive Environmental Solutions

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Learning to Live • Loving to Learn
ACPS
Alexandria City Public Schools

# INDOOR AIR QUALITY ASSESSMENT REPORT
# AT
# CHARLES BARRETT ELEMENTARY SCHOOL

1115 MARTHA CUSTIS DR,
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*Report Prepared for*:

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Alexandria City Public Schools

2601 Cameron Mills Rd, Alexandria, VA 22302

*Dated: September 30, 2021*

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# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **AHU** | Air-Handling Unit |
| **AIHA** | American Industrial Hygiene Association |
| **ASHRAE** | American Society of Heating, Refrigerating and Air-Conditioning Engineers |
| **ASTM** | American Society for Testing and Materials |
| **CO** | Carbon Monoxide |
| **CO2** | Carbon Dioxide |
| **EMLAP** | Environmental Microbiology Laboratory Accreditation Program |
| **HVAC** | Heating, Ventilating, And Air-Conditioning |
| **IAQ** | Indoor Air Quality |
| **NIST** | National Institute for Standards and Technology |
| **NVLAP** | National Voluntary Laboratory Accreditation Program |
| **RH** | Relative Humidity |

**Abbreviations involving scientific volume and measurements involving media or water sampling**

| | |
|---|---|
| **Spores/m3** | Mold spores per cubic meter of air |
| **LPM** | Liters Per Minute |
| **NTE** | Not to exceed |
| **°F** | degree Fahrenheit |
| **PPM** | Parts Per Million |

## 1. Executive Summary

Total Environmental Concepts (TEC) was contracted by Alexandria City Public Schools (ACPS) to perform Indoor Air Quality (IAQ) assessments at 19 schools. Douglas MacArthur Elementary was out of service and assessed last.The original list included:

- Alexandria City High School (AC)
- AC Satellie Campus, Central Offices (CO)
- **Charles Barrett Elementary School (BC)**
- Cora Kelly School for Math (CK)
- Frances C. Hammond Elementary School (FH)
- George Mason Elementary School (GM)
- George Mason Elementary School (GW)
- James Polk Elementary School (JP)
- John Adams Elementary School (JA)
- Lyles-Crouch Elementary School (LC)
- Minnie Howard High School (MH)
- Samuel Tucker Elementary School (ST)
- William Ramsey Elementary School (WR)
- Douglas MacAurthur Elementary School (Out of Service)
- Jefferson-Houston Elementary School (JH)
- Ferdinand T. Day Elementary School (FD)
- Patrick Henry Elementary School (PH)
- Mount Vernon Community School (MV)

This IAQ assessment was conducted at Charles Barrett Elementary School on Monday, August 30, 2021. ACPS required that the testing to be based on the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) guidelines. ACPS provided site plans and fifteen (15) sampling locations per school. Sampling locations were chosen by ACPS based on internal review of facilities maintenance records, and a review of facilities maintenance related issues. These sampling locations were selected to collect representative IAQ data in these specific areas and to document any areas of potential concern observed during the site assessment. An extra sampling location was included, at the request of the Assistant Principal, to verify onsite air purifier (Alen BreathSmart). ACPS required that TEC test for the following major indoor air pollutants:

- Mold
- Radon
- TO+15 (VOCs)
- 4-polycyclohexene (4-pch)
- Formaldehyde

In accordance with ASHRAE, TEC also took measurements of the following at each school:

- Carbon Monoxide
- Carbon Dioxide
- Humidity

- Temperature
- Oxygen

**Summary of findings and recommendaitons during this limited IAQ investigation:**

- **Mold** – TEC conducted site-specific mold sampling outside at Charles Barrett to obtain a baseline of the number and types of fungal spores in the air. This baseline was compared to the spores collected inside at the sampling locations since inside spore counts above baseline, could indicate internal sources of mold.

**Findings:**

1. The number of spores detected of the genus Curvularia in room 226 were significantly higher than baseline background outside air mold spore count however, there were no Curvularia spores detected outside. The actual number of Curvularia spores detected inside was very low. No visible mold was observed.The spores detected of the genus Curvularia in room 226 are not a health issue.

2. A mold spore ratio anomaly of Curvularia spores was recorded in room 226. Curvularia is not commonly found indoors and grows on plants and plant material. The Curvularia spores detected were likely caused by open windows and doors and normal fluctuations in outside spore counts as there was no visible mold observed in room 226. Photographs (Section 3, Visual Observations) reveal large ground level windows, with the entrance doorway on the opposite side of the room. Windows in the classroom were open prior to sampling, and the grass directly outside of room 226 was actively being mowed. No visible mold was observed.This anomaly is not a health issue.

3. Areas of water staining were also observed in room 226. No visible mold was observed.

   None of the other mold sampling results at Charles Barrett Elementary School were indicative of mold issues. Photographs can be found in Section 3, Visual Observations.

**Recommendations:**

- The Curvularia spores detected above basline numbers were likely caused by open windows and doors and normal fluctuations in outside spore counts and there was no visible mold observed. The spores detected of the genus Curvularia in room 226 are not a health issue.
- Moving forward, any suspected mold growth should be inspected by a qualified professional.
- Investigate sources of water leaks and any evidence of water staining.
- Inspect above drop ceilings and replace stained ceiling tiles.
- Inspect areas around building foundation.
- A detailed schedule of maintenance, for all HVAC and associated building systems, should be established, and adhered to.

- **Radon** – levels recorded in all locations were less than 4pCi/L, as recommended by EPA and HUD.

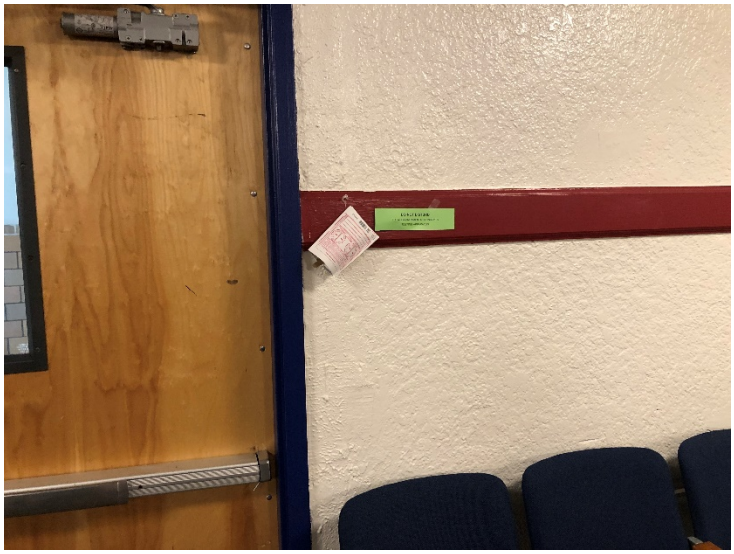
- **VOCs** – The levels of volitile organic compounds (VOCs) recorded at each location were within acceptable ranges, when compared to EPA Regional Screening Levels (RSLs).
- **4-pch** – levels recorded during this investigation were within the LEED (Leadership of Energy and Environmental Design) IAQ guideline of 6.5 ug/m3.
- **Formaldehyde** – the levels of formaldehyde recorded at each location were within an acceptable range, compared to EPA Regional Screening Level (RSLs) of 1ug/m3.
- **Carbon monoxide** – concentrations in all areas were less than the EPA and ASHRAE recommended limit of 9 ppm.
- **Carbon dioxide** – concentrations in all tested spaces were less than the ASHRAE limit of 1,092 ppm.
- **RH** – the relative humidity in all tested spaces was within the ASHRAE guidelines of ≤ 67%, and for the purposes of this investigation ≤ 65%. None of the tested locations had a relative humidity greater than 65%.
- **Temperature** – the average temperature was 86 degrees F, slightly greater than the ASHRAE recommended summer range of 75°F-80.5°F.

## 2. Assesment Methods

Under the direction of TEC Industrial Hygienist Nikki Satari, Margaret Stanger, Victoria Powers, and Channing Jackson, also of TEC, conducted IAQ inspections and air sampling on August 30, 2021. All air samples were collected three-six feet from floor level, the typical breathing zone for adults.

Mold air samples were collected with a field calibrated Environmental Monitoring Systems High Volume Sampling Pump on Allergenco-D Disposable IAQ Air Monitoring Cassettes at a flow rate of 10 liters per minute for a sample volume of 75 liters during the assessment. The Hayes Microbial Consulting laboratory reports are included in Appendix A.

Radon gas samples were collected by securing Air Chek Radon Test Kits. Samples were collected within the breathing zone (4-6ft from ground level) at each sample location. In accordance with Air Chek's Radon Test Kit Instructions, kits were secured to walls inside the building and away from, open windows, doors to the outside, or interior air ventilation systems. Sampling time was 72 hours. Radon analytical results can be found in Appendix B.



Formaldehyde gas air samples were collected using static Aldehyde TraceAir II Monitors. Samples were secured to surrounding testing equipment to expose the full surface area of the sampling device for the full 4 hours of sampling time. Monitorss were collected after 4 hours and processed for shipment to Phase Separation Science located in Catonsville, MD. Formaldehyde analytical results can be found in Appendix D. Photograph below.

The 4-polycyclohexene (4-PCH) samples were collected in SKC's Anasorb CSC sorbent tubes through Gilian GilAir3 Air Sampling Pumps. Pumps were placed within the breathing zone (4-6ft

from ground level). Run times were 8 hours or time weighted 4 hour runs. 4-PCH analytical results can be found in Appendix E.  Photograph below.


TO+15 (VOCs) samples were collected using ENTECH Instruments 1.4L SUMMA canisters with an ENTECH regulator attachment. Canisters were deployed at each location for a run time of 8 hours or a time weighted run time of 4 hours. Internal pressure readings were recorded at the start and end of each sample run time. TO+15 (VOCs) analytical results can be found in Appendix C.  Photograph below.

The temperature and relative humidity were taken with the AcuRite Digital Indoor Temperature and Humidity Monitor in the lobby of each school. Teperature and relative humidity readings can be found in Section 5 Mold Sampling Results, below.

Real-time measurements for oxygen, carbon dioxide, carbon monoxide, VOC, hydrogen sulfides were taken with multi-gas detector. These measurements can be found in Section 10 Multi-gas Detector (MSA Altair Multi-gas) Readings. This information can be found in Table 1 below.


## 3. Visual Observations

| Sample Location | August 30, 2021 | Visual Observations |
|---|---|---|
| Stairwell by Gym | Ceiling tile damage observed in the stairwell by the Gym |  |

| | | |
|---|---|---|
| Room 226 | Water staining on ceiling tiles of room 226 |  |

## 4. Conditions for Human Occupancy

Conditions for Human Occupancy are addressed in ASHRAE Standard 55-2017. These standards are designed to provide comfort for an estimated 80% of occupants. The standard provides for a temperature range from between approximately 67 and 82 °F. A more specific range based on relative humidity, season, clothing worn, activity levels, and other factors can be determined. For example, the standard does not specify a lower humidity range, but notes that issues of comfort, skin irritation, dry mucous membranes, and static electricity may arise when the relative humidity is less than 30%. ASHRAE Standard 62.1-2016 does recommend an upper limit of 67% humidity to avoid conditions conducive to microbial growth. For the purposes of this investigation, TEC used a conservative upper limit of 65%. The recommended ASHRAE temperature range for schools and office spaces in summer is 75°F-80.5°F.

### 4.1 Temperature

The recommended ASHRAE temperature range for schools and office spaces in summer is 75°F-80.5°F. The recorded relative humidity in all locations was below 65% and average indoor temperature can be found in Table 2.

### 4.2 Relative Humidity

ASHRAE Standard 62.1-2016 recommends a relative humidity no greater than 67% to avoid conditions conducive to microbial growth. The relative humidity observed by TEC during this investigation was observed to be below 65% in all locations. Average relative humidity can be found in Table 2.

### 4.3 Carbon Dioxide

Carbon dioxide (CO2) is a byproduct of combustion burning engines. Generators, furnaces, boilers, idling automobile engines. High CO2 measurements may indictae engine maintenance issues. There were no exceedances in real-time during the IAQ investigation. Complete results can be found in Table 1.

### 4.4 Carbon Monoxide

Carbon monoxide (CO) is a byproduct of the combustion of fossil fuels. Generators, furnaces, boilers, idling automobile engines, may all produce CO. High CO measurements may indicate engine maintenance issues. There were no exceedances in real-time during the IAQ investigation. Complete results can be found in Table 1.

### 4.5 Multi-gas Detector Readings

Multi-gas readings were taken at each location to document current conditions at the time of the sampling efforts and to monitor the environment between sampling locations. There were no exceedances in real-time during the IAQ investigation. Complete results can be found in Table 1.

## 5. Mold Sampling Results

TEC conducted mold sampling outside to obtain a baseline spore count. This baseline was compared to inside mold spore counts at the designated sampling locations.

1. The number of spores in the air were within acceptable ranges in all locations as compared to background outside air mold spore counts.

2. A mold spore ratio anomaly of Curvularia spores was recorded in room 226. Curvularia is not commonly found indoors and grows on plants and plant material. The Curvularia spores detected were likely caused by open windows and doors and normal fluctuations in outside spore counts as there was no visible mold observed in room 226. Photographs (Section 3, Visual Observations) reveal large ground level windows, with the entrance doorway on the opposite side of the room. Windows in the classroom were open prior to sampling, and the grass directly outside of room 226 was actively being mowed. No visible mold was observed.This anomaly is not a health issue.

3. Areas of water staining were also observed and in room 226. No visible mold was observed.

In conclusion, federal standards for the number of fungal spores that may be present in the indoor environment, don't exist. The widely accepted guideline in the indoor air quality field, requires that the numbers and types of spores that are present in the indoor environment not exceed those that are present outdoors at any given time.

Mold is carried indoors through building entrances, open windows, loading docks, foot traffic into buildings and the HVAC system. To thrive indoors, mold requires a food source, proper temperature, and humidity to foster its growth.

There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination.

There will also be mold spores present in "normal" outdoor environments. In any environment, excess mold growth may arise as a result of excess moisture. Indoors this may indicate water leaks or high indoor humidity.

Interior spore counts above baseline readings, may indicate internal sources of mold. This would indicate a requirement for further investigation and potential mitigation. TEC observed evidence of water intrusion into the building in several locations however, no visible mold was present.

- TEC recommends that ACPS investigate all areas where there are obvious signs of water intrusion. Care should be taken to look above drop ceilings and around the building foundation. Any hidden suspected mold should be tested and verified by a qualified professional. The mold in air results do not indicate a need for mold abatement at this time, but conditions may worsen if the issues with leaks and water intrusion are not addressed. The observed ratio anomalies are most likely caused by a combination of the normal fluctuation in daily spore counts, and the issues with water intrusion. Mold analytical results can be found in Appendix A.

- None of the other results from the fifteen sampling locations at Charles Barrett Elementary School were indicative of mold issues.

    - Moving forward, any suspected mold growth should be inspected by a qualified professional.
    - Investigate sources of water leaks and any evidence of water staining.
    - Inspect above drop ceilings and replace stained ceiling tiles.
    - Inspect areas around building foundation.
    - A detailed schedule of maintenance, for all HVAC and associated building systems, should be established, and adhered to.

Mold analytical results can be found in Appendix A.

## 6. Radon Gas Sampling Results

Radon forms as the result of the radioactive decay of uranium. Uranium is a naturally occurring radioactive by product that occurs when rock and soil breaks down. Some building materials, such as granite, may be a source of radon. Sampling areas were provided by ACPS. This did not allow for TEC to utilize the sampling protocol provided by Air Chek for performing a comprehensive survey. Air Chek Radon Test Kits collection times were a minimum of 72 hours. Test kits were then retrieved and shipped to Air Chek Inc. located in Mills River, NC. Air Chek laboratories are National Institute of Standards and Technology's (NIST) National Voluntary Laboratory

Accreditation Program (NVLAP), and American Industrial Hygiene Association (AIHA) for Environmental Microbial Laboratory Accreditation Program (EMLAP) certified. Analytical results can be found in Appendix B.

## 7. Formaldehyde Gas Sampling Results

Sources of formaldehyde are similar to sources of carbon monoxide. They include gas-burning engines and space heaters. Other sources include smoking, household products, pressed wood products, and adhesives. Analytical results can be found in Appendix D.

## 8. TO+15 (VOC) Sampling Results

Volatile organic compounds (VOCs), are organic chemicals emitted as gases. Carpets, flooring materials, cleaning agents, disinfectants, air fresheners, and vinyl furnishings, may all be sources of VOCs in indoor air. Analytical results can be found in Appendix E.

## 9. 4-pch Sampling Results

4-polycyclohexene is a common indoor air contaminant most commonly associated with " new-carpet" smell complaints. 4-pch is a byproduct of carpet manufacturing and has been associated with adverse health effects. None of the areas investigated during this study indictated elevated levels of pch. Analytical results can be found in Appendix C.

## 10. Multi-Gas Detector (MSA Altair Multi-gas) Readings

Multi-gas readings were taken at each location to document current conditions at the time of the sampling efforts and to monitor the environment between sampling locations. There were no exceedances in real-time during the IAQ investigation. Multi-gas results can be found below in Table 1.

# *Table 1*

| Multi-Gas Detector Readings | | | | |
|---|---|---|---|---|
| Location | VOC | CO | OXYGEN | H2S |
| Outdoor | 0.0 | 0.0 | 20.9 | 0.0 |
| Cafe | 0.0 | 0.0 | 20.9 | 0.0 |
| Stair Landing | 0.0 | 0.0 | 20.9 | 0.0 |
| Class 307 | 0.0 | 0.0 | 20.9 | 0.0 |
| Stair 302 | 0.0 | 0.0 | 20.9 | 0.0 |
| Class 226 | 0.0 | 0.0 | 20.9 | 0.0 |
| Library | 0.0 | 0.0 | 20.9 | 0.0 |
| Class 216 | 0.0 | 0.0 | 20.9 | 0.0 |
| Hall mezzanine | 0.0 | 0.0 | 20.9 | 0.0 |
| Lobby | 0.0 | 0.0 | 20.9 | 0.0 |
| Auditorium | 0.0 | 0.0 | 20.9 | 0.0 |
| Office | 0.0 | 0.0 | 20.9 | 0.0 |
| Hall 107 | 0.0 | 0.0 | 20.9 | 0.0 |
| Class 102 | 0.0 | 0.0 | 20.9 | 0.0 |
| Gym | 0.0 | 0.0 | 20.9 | 0.0 |

# *Table 2*

| Results of Analytes by Location | | | | | |
|---|---|---|---|---|---|
| Location | Radon | Mold | TO+15 VOCs | 4PCH | Formaldehyde |
| | | AVG: 86 F / AVG: 45 % | | | |
| Outdoor | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Cafe | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Stair Landing | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Class 307 | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Stair 302 | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Class 226 | < 4 pCi/L | Spore Ratio Abnormality | > RSL | < 6.5 ug/m3 | < RSL |
| Library | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Class 216 | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Hall mezzanine | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| lobby | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| auditorium | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| office | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Hall 107 | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Class 102 | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |
| Gym | < 4 pCi/L | Spore Count Normal | > RSL | < 6.5 ug/m3 | < RSL |

**See Section 5 - Ratio abnormalities are most likely caused by fluctuations in daily spore counts*

## 11. Quality Control Program

- TEC recognizes the importance of quality assurance (QA) and quality control (QC) measures as they relate to the performance of sample collection and processing.
- To ensure compliance with QA/QC measures, SOPs have been developed for field sample collection techniques, field sample screening procedures, multi-media sampling, and the accurate presentation of findings/reporting.
- All staff are provided these SOPs and are trained in these procedures before conducting work activities. TEC's Program Manager and the on-site PM/QCM will manage the quality control program.
- The PM will work closely with field technicians to ensure the success of the quality control program. All team members will receive copies of and abide by the quality control plan.
- Daily records will be kept of all operations, activities, and tests performed in the quality control program.
- All samples collected during this IAQ assessment were collected, processed, and shipped under the strictest chain of custody (CoC) guidelines.
- All samples were shipped for analysis by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory.

**Appendix A:** Mold Analytical Results

HAYES MICROBIAL CONSULTING

**#21032684**

Analysis Report prepared for

# Total Environmental Concepts, Inc.

**8382 Terminal Road**
**Suite B**
**Lorton, VA 22079**

Phone: **(571) 289-2173**

Charles Barrett ES

Collected: **August 30, 2021**
Received: **August 31, 2021**
Reported: **August 31, 2021**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 14 samples by FedEx in good condition for this project on August 31st, 2021.

The results in this analysis pertain only to this job, collected on the stated date, and should not be used in the interpretation of any other job. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC..

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial. In no event, shall Hayes Microbial or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of the use of these test results.

Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

**Karl Ford**
**Total Environmental Concepts, Inc.**
8382 Terminal Road Suite B
Lorton, VA 22079
(571) 289-2173

Charles Barrett ES

# #21032684

## Spore Trap
SOP - HMC#101

| Sample Number | 1 | CB4315340 | 2 | CB4315324 | 3 | CB4315320 | 4 | CB4315319 |
|---|---|---|---|---|---|---|---|---|
| Sample Name | **Outside** | | **Aud** | | **Lobby** | | **Office** | |
| Sample Volume | 75.00 liter | | 75.00 liter | | 75.00 liter | | 75.00 liter | |
| Reporting Limit | 13 spores/m³ | | 13 spores/m³ | | 13 spores/m³ | | 13 spores/m³ | |
| Background | 3 | | 2 | | 3 | | 3 | |
| Fragments | ND | | ND | | ND | | 40/m³ | |

| Organism | Raw Count | Count / m³ | % of Total | Raw Count | Count / m³ | % of Total | Raw Count | Count / m³ | % of Total | Raw Count | Count / m³ | % of Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alternaria | 4 | 53 | 1.0% | | | | | | | | | |
| Ascospores | 100 | 1333 | 25.0% | | | | 5 | 67 | 38.5% | 3 | 40 | 14.3% |
| Aspergillus\|Penicillium | | | | | | | 2 | 27 | 15.4% | 3 | 40 | 14.3% |
| Basidiospores | 256 | 3413 | 64.0% | | | | 1 | 13 | 7.7% | 7 | 93 | 33.3% |
| Bipolaris\|Drechslera | | | | | | | 1 | 13 | 7.7% | | | |
| Chaetomium | | | | | | | | | | | | |
| Cladosporium | 19 | 253 | 4.8% | 1 | 13 | 20.0% | 2 | 27 | 15.4% | 6 | 80 | 28.6% |
| Curvularia | | | | 1 | 13 | 20.0% | 1 | 13 | 7.7% | | | |
| Epicoccum | 1 | 13 | <1% | 1 | 13 | 20.0% | | | | 1 | 13 | 4.8% |
| Fusarium | | | | | | | | | | | | |
| Memnoniella | | | | | | | | | | | | |
| Myxomycetes | 5 | 67 | 1.3% | 1 | 13 | 20.0% | 1 | 13 | 7.7% | 1 | 13 | 4.8% |
| Pithomyces | 11 | 147 | 2.8% | 1 | 13 | 20.0% | | | | | | |
| Stachybotrys | | | | | | | | | | | | |
| Stemphylium | | | | | | | | | | | | |
| Torula | | | | | | | | | | | | |
| Ulocladium | | | | | | | | | | | | |
| Zygophiala | 4 | 53 | 1.0% | | | | | | | | | |
| Total | 400 | 5332 | 100% | 5 | 65 | 100% | 13 | 173 | 100% | 21 | 279 | 100% |

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Aug 30, 2021** Received: **Aug 31, 2021** Reported: **Aug 31, 2021**

Project Analyst: Connor Gailliot, BS Date: **08 - 31 - 2021**

Reviewed By: Steve Hayes, BSMT Date: **08 - 31 - 2021**

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(571) 289-2173

Charles Barrett ES

# #21032684

## Spore Trap
SOP - HMC#101

| Sample Number | 5 | CB4315329 | 6 | CB4315664 | 7 | CB4315338 | 8 | CB4315335 |
|---|---|---|---|---|---|---|---|---|
| Sample Name | **Hall 107** | | **102** | | **210 BR** | | **216** | |
| Sample Volume | 75.00 liter | | 75.00 liter | | 75.00 liter | | 75.00 liter | |
| Reporting Limit | 13 spores/m³ | | 13 spores/m³ | | 13 spores/m³ | | 13 spores/m³ | |
| Background | 3 | | 2 | | 3 | | 2 | |
| Fragments | ND | | ND | | ND | | ND | |

| Organism | Raw Count | Count / m³ | % of Total | Raw Count | Count / m³ | % of Total | Raw Count | Count / m³ | % of Total | Raw Count | Count / m³ | % of Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alternaria | 1 | 13 | 4.8% | | | | | | | | | |
| Ascospores | 12 | 160 | 57.1% | 2 | 27 | 20.0% | 3 | 40 | 21.4% | | | |
| Aspergillus\|Penicillium | | | | 3 | 40 | 30.0% | 3 | 40 | 21.4% | | | |
| Basidiospores | 1 | 13 | 4.8% | 5 | 67 | 50.0% | 1 | 13 | 7.1% | 2 | 27 | 50.0% |
| Bipolaris\|Drechslera | | | | | | | | | | | | |
| Chaetomium | | | | | | | | | | | | |
| Cladosporium | 3 | 40 | 14.3% | | | | 7 | 93 | 50.0% | 2 | 27 | 50.0% |
| Curvularia | 2 | 27 | 9.5% | | | | | | | | | |
| Epicoccum | | | | | | | | | | | | |
| Fusarium | | | | | | | | | | | | |
| Memnoniella | | | | | | | | | | | | |
| Myxomycetes | 1 | 13 | 4.8% | | | | | | | | | |
| Pithomyces | 1 | 13 | 4.8% | | | | | | | | | |
| Stachybotrys | | | | | | | | | | | | |
| Stemphylium | | | | | | | | | | | | |
| Torula | | | | | | | | | | | | |
| Ulocladium | | | | | | | | | | | | |
| Zygophiala | | | | | | | | | | | | |
| Total | 21 | 279 | 100% | 10 | 134 | 100% | 14 | 186 | 100% | 4 | 54 | 100% |

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Aug 30, 2021** Received: **Aug 31, 2021** Reported: **Aug 31, 2021**

Project Analyst: Connor Gailliot, BS Date: **08 - 31 - 2021**

Reviewed By: Steve Hayes, BSMT Date: **08 - 31 - 2021**

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Charles Barrett ES

# #21032684

## Spore Trap
SOP - HMC#101

| Sample Number | 9 | CB4315361 | | 10 | CB4315333 | | 11 | CB4315345 | | 12 | CB4315339 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name | **Library** | | | **226** | | | **Stairs 304** | | | **307** | | |
| Sample Volume | 75.00 liter | | | 75.00 liter | | | 75.00 liter | | | 75.00 liter | | |
| Reporting Limit | 13 spores/$m^3$ | | | 13 spores/$m^3$ | | | 13 spores/$m^3$ | | | 13 spores/$m^3$ | | |
| Background | 2 | | | 3 | | | 2 | | | 3 | | |
| Fragments | ND | | | 27/$m^3$ | | | ND | | | ND | | |
| **Organism** | **Raw Count** | **Count / $m^3$** | **% of Total** | **Raw Count** | **Count / $m^3$** | **% of Total** | **Raw Count** | **Count / $m^3$** | **% of Total** | **Raw Count** | **Count / $m^3$** | **% of Total** |
| Alternaria | | | | | | | | | | | | |
| Ascospores | 3 | 40 | 60.0% | 3 | 40 | 7.0% | 2 | 27 | 33.3% | 2 | 27 | 20.0% |
| Aspergillus\|Penicillium | | | | 2 | 27 | 4.7% | | | | | | |
| Basidiospores | 2 | 27 | 40.0% | 3 | 40 | 7.0% | 2 | 27 | 33.3% | 3 | 40 | 30.0% |
| Bipolaris\|Drechslera | | | | 1 | 13 | 2.3% | | | | | | |
| Chaetomium | | | | | | | | | | | | |
| Cladosporium | | | | 3 | 40 | 7.0% | 1 | 13 | 16.7% | 4 | 53 | 40.0% |
| Curvularia | | | | 25 | 333 | 58.1% | 1 | 13 | 16.7% | 1 | 13 | 10.0% |
| Epicoccum | | | | 2 | 27 | 4.7% | | | | | | |
| Fusarium | | | | | | | | | | | | |
| Memnoniella | | | | | | | | | | | | |
| Myxomycetes | | | | 3 | 40 | 7.0% | | | | | | |
| Pithomyces | | | | 1 | 13 | 2.3% | | | | | | |
| Stachybotrys | | | | | | | | | | | | |
| Stemphylium | | | | | | | | | | | | |
| Torula | | | | | | | | | | | | |
| Ulocladium | | | | | | | | | | | | |
| Zygophiala | | | | | | | | | | | | |
| Total | 5 | 67 | 100% | 43 | 573 | 100% | 6 | 80 | 100% | 10 | 133 | 100% |

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Aug 30, 2021** Received: **Aug 31, 2021** Reported: **Aug 31, 2021**

Project Analyst: Connor Gailliot, BS Date: **08 - 31 - 2021**

Reviewed By: Steve Hayes, BSMT Date: **08 - 31 - 2021**

HAYES MICROBIAL CONSULTING
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

**Karl Ford**
**Total Environmental Concepts, Inc.**
8382 Terminal Road Suite B
Lorton, VA 22079
(571) 289-2173

Charles Barrett ES

# #21032684

## Spore Trap
SOP - HMC#101

| Sample Number | 13 | CB4315358 | 14 | CB4315324 |
|---|---|---|---|---|
| Sample Name | **Stairs 313** | | **Cafe** | |
| Sample Volume | 75.00 liter | | 75.00 liter | |
| Reporting Limit | 13 spores/m$^3$ | | 13 spores/m$^3$ | |
| Background | 3 | | 2 | |
| Fragments | ND | | ND | |

| Organism | Raw Count | Count / m$^3$ | % of Total | Raw Count | Count / m$^3$ | % of Total |
|---|---|---|---|---|---|---|
| Alternaria | | | | | | |
| Ascospores | 4 | 53 | 44.4% | 4 | 53 | 26.7% |
| Aspergillus\|Penicillium | | | | | | |
| Basidiospores | 1 | 13 | 11.1% | 3 | 40 | 20.0% |
| Bipolaris\|Drechslera | | | | | | |
| Chaetomium | | | | | | |
| Cladosporium | 3 | 40 | 33.3% | 8 | 107 | 53.3% |
| Curvularia | 1 | 13 | 11.1% | | | |
| Epicoccum | | | | | | |
| Fusarium | | | | | | |
| Memnoniella | | | | | | |
| Myxomycetes | | | | | | |
| Pithomyces | | | | | | |
| Stachybotrys | | | | | | |
| Stemphylium | | | | | | |
| Torula | | | | | | |
| Ulocladium | | | | | | |
| Zygophiala | | | | | | |
| Total | 9 | 119 | 100% | 15 | 200 | 100% |

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Aug 30, 2021** Received: **Aug 31, 2021** Reported: **Aug 31, 2021**

Project Analyst: Connor Gailliot, BS — Date: **08 - 31 - 2021**

Reviewed By: Steve Hayes, BSMT — Date: **08 - 31 - 2021**

HAYES MICROBIAL CONSULTING
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

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Charles Barrett ES

**#21032684**

## Spore Trap Information

| | |
|---|---|
| **Reporting Limit** | The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated. |
| **Blanks** | Results have not been corrected for field or laboratory blanks. |
| **Background** | The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows:<br><br>**NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)<br>**1 :** <5% of field occluded. No spores will be uncountable.<br>**2 :** 5-25% of field occluded.<br>**3 :** 25-75% of field occluded.<br>**4 :** 75-90% of field occluded.<br>**5 :** >90% of field occluded. Suggested recollection of sample. |
| **Fragments** | Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification. |
| **Control Comparisons** | There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments. |
| Water Damage Indicator<br>Common Allergen<br>Slightly Higher than Baseline<br>Significantly Higher than Baseline<br>Ratio Abnormality | **Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.<br><br>**Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors.<br><br>**Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.<br><br>**Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination.<br><br>**Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors. |
| **Color Coding** | Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators. |

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**Alternaria**

**Habitat:** Commonly found outdoors in soil and decaying plants. Indoors, it is commonly found on window sills and other horizontal surfaces.

**Effects:** A common allergen and has been associated with hypersensitivity pneumonitis. Alternaria is capable of producing toxic metabolites which may be associated with disease in humans or animals. Occasionally an agent of onychomycosis, ulcerated cutaneous infection and chronic sinusitis, principally in the immunocompromised patient.

**Ascospores**

**Habitat:** A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.

**Effects:** Health affects are poorly studied, but many are likely to be allergenic.

**Aspergillus|Penicillium**

**Habitat:** The most common fungi isolated from the environment. Very common in soil and on decaying plant material. Are able to grow well indoors on a wide variety of substrates.

**Effects:** This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.

**Basidiospores**

**Habitat:** A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.

**Effects:** Common allergens and are also associated with hypersensitivity pneumonitis.

**Bipolaris|Drechslera**

**Habitat:** They are found in soil and as plant pathogens. Can grow indoors on a variety of substrates.

**Effects:** They may be allergenic and are very commonly involved in allergic fungal sinusitis. They are opportunistic pathogens but occasionally infect healthy individuals, causing keratitis, sinusitis and osteomyelitis.

**Cladosporium**

**Habitat:** One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.

**Effects:** A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

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**Total Environmental Concepts, Inc.**
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**Curvularia**

**Habitat:** They exist in soil and plant debris, and are plant pathogens.

**Effects:** They are allergenic and a common cause of allergic fungal sinusitis. An occasional cause of human infection, including keratitis, sinusitis, onychomycosis, mycetoma, pneumonia, endocarditis and desseminated infection, primarily in the immunocompromised.

**Epicoccum**

**Habitat:** It is found in soil and plant litter and is a plant pathogen. It can grow indoors on a variety of substrates, including paper and textiles and is commonly found on wet drywall.

**Effects:** It is a common allergen. No cases of infection have been reported in humans.

**Myxomycetes**

**Habitat:** Found on decaying plant material and as a plant pathogen.

**Effects:** Some allergenic properties reported, but generally pose no health concerns to humans.

**Pithomyces**

**Habitat:** Common fungus isolated from soil, decaying plant material. Rarely found indoors.

**Effects:** Allergenic properties are poorly studied. No cases of infection in humans.

**Zygophiala**

**Habitat:** Rarely found in outdoor air and is a plant pathogen.

**Effects:** No known health effects.

Total Environmental Concepts, Inc.

| | | | |
|---|---|---|---|
| Placement Tech | Victoria P | Sample Type | Mold |
| Placement Date | 8/30/2021 | Email | Kford@tci.pro |
| Address | Charles Barrett ES | | |

| Sample # | Location/ room | Flow Rate | Sampling Time | Pump Start Time | Pump End Time | Comments |
|---|---|---|---|---|---|---|
| CB431 5340 | outside | 10L/M | 7.5m | 1642 | 1649 | |
| CB 431 5324 | Aud | | | 1644 | 1651 | |
| CB4315320 | lobby | | | 1650 | 1657 | |
| CB 4315319 | office | | | 1653 | 1700 | |
| CB 4315329 | hall 107 | | | 1658 | 1705 | |
| CB 4315664 | 102 | | | 1701 | 1708 | |
| CB4315338 | 210BR | | | 1712 | 1719 | |
| CB4315335 | 216 | | | 1713 | 1720 | |
| CB 4315361 | library | | | 1722 | 1729 | |
| CB 4315333 | 226 | | | 1725 | 1732 | |
| CB 4315345 | stairs 304 | | | 1737 | 1744 | |
| CB 4315339 | 307 | | | 1738 | 1745 | |
| CB 4315358 | stairs 313 | | | 1749 | 1756 | |
| CB 4315349 | cafe | | | 1751 | 1758 | |

**Appendix B:** Radon Analytical Results

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723765 Result: ????
Location:

Cb Audio-B
,

Analysis Note : MI
Analyzed : 2021-09-03 at 10:00 am
Started : 0000-00-00 at
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 0 hours 6.0% 70°F

---

Kit #: 9723770 Result: < 0.3 pCi/l
Location:

Cb Audio D
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 4:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 71 hours 14.3% 70°F

---

Kit #: 9723787 Result: < 0.3 pCi/l
Location:

Cb Lobby
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 5:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 70 hours 12.4% 70°F

---

Kit #: 9723788 Result: < 0.3 pCi/l
Location:

Cb Office
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 5:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 70 hours 11.1% 70°F

---

Kit #: 9723884 Result: < 0.3 pCi/l
Location:

Cb Hall/Mezzanine
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 5:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 70 hours 12.9% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723762 Result: < 0.3 pCi/l
Location:

Cb Cafe-2
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 5:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 70 hours 16.6% 70°F

---

Kit #: 9723764 Result: < 0.3 pCi/l
Location:

Cb Library 2
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 5:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 70 hours 10.3% 70°F

---

Kit #: 9723900 Result: ????
Location:

Cb Audio 2
,

Analysis Note : MI
Analyzed : 2021-09-03 at 10:00 am
Started : 0000-00-00 at
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 0 hours 15.1% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723894 Result: < 0.3 pCi/l
Location:

Cb 102 Class
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 5:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 70 hours 10.3% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723890 Result: < 0.3 pCi/l

Location:

Cb 216 Class

,

Analysis Note :

Analyzed : 2021-09-03 at 10:00 am

Started : 2021-08-30 at 5:00 pm

Ended : 2021-09-02 at 3:00 pm

Hours/MST% : 70 hours 14.7% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723782 Result: < 0.3 pCi/l
Location:

Cb 307 Class
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 6:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 69 hours 12.5% 70°F

Kit #: 9723882 Result: < 0.3 pCi/l
Location:

Cb 307 Class
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 6:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 69 hours 15.2% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723763 Result: < 0.3 pCi/l
Location:

Cb 226 Class
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 6:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 69 hours 12.8% 70°F

Kit #: 9723779 Result: < 0.3 pCi/l
Location:

Cb 226 Class D
,

Analysis Note :
Analyzed : 2021-09-03 at 10:00 am
Started : 2021-08-30 at 6:00 pm
Ended : 2021-09-02 at 3:00 pm
Hours/MST% : 69 hours 12.4% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

| | | |
|---|---|---|
| Kit #: 9723760 | Result: 0.7 ± 0.3 pCi/l | Analysis Note : |
| Location: | | Analyzed : 2021-09-03 at 10:00 am |
| | | Started : 2021-08-30 at 6:00 pm |
| Cb Gym-1 | | Ended : 2021-09-02 at 3:00 pm |
| , | | Hours/MST% : 69 hours 14.3% 70°F |
| Kit #: 9723783 | Result: < 0.3 pCi/l | Analysis Note : |
| Location: | | Analyzed : 2021-09-03 at 10:00 am |
| | | Started : 2021-08-30 at 5:00 pm |
| Cb Library 1 | | Ended : 2021-09-02 at 5:00 pm |
| , | | Hours/MST% : 72 hours 12.4% 70°F |
| Kit #: 9723887 | Result: < 0.3 pCi/l | Analysis Note : |
| Location: | | Analyzed : 2021-09-03 at 10:00 am |
| | | Started : 2021-08-30 at 5:00 pm |
| Cb Cafe-1 | | Ended : 2021-09-02 at 5:00 pm |
| , | | Hours/MST% : 72 hours 16.0% 70°F |
| Kit #: 9723896 | Result: < 0.3 pCi/l | Analysis Note : |
| Location: | | Analyzed : 2021-09-03 at 10:00 am |
| | | Started : 2021-08-30 at 4:00 pm |
| Cb Audio-1 | | Ended : 2021-09-02 at 3:00 pm |
| , | | Hours/MST% : 71 hours 15.4% 70°F |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723898 Result: < 0.3 pCi/l

Location:

Cb Hall 316

,

Analysis Note :

Analyzed : 2021-09-03 at 10:00 am

Started : 2021-08-30 at 6:00 pm

Ended : 2021-09-02 at 3:00 pm

Hours/MST% : 69 hours 11.7% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723761 Result: < 0.3 pCi/l

Location:

Cb Hall 107

,

Analysis Note :

Analyzed : 2021-09-03 at 10:00 am

Started : 2021-08-30 at 5:00 pm

Ended : 2021-09-02 at 5:00 pm

Hours/MST% : 72 hours 11.7% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

**Attention: P8184 / LEILA DEAN / TOTAL ENVIRONMENTAL CONCEPTS**

Kit #: 9723766 Result: < 0.3 pCi/l

Location:

Cb Stair Hall 302

,

Analysis Note :

Analyzed : 2021-09-03 at 10:00 am

Started : 2021-08-30 at 6:00 pm

Ended : 2021-09-02 at 3:00 pm

Hours/MST% : 69 hours 10.9% 70°F

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

T:
H:

# Charels Barrett ES

Total Environmental Concepts, Inc.

| | | | | | |
|---|---|---|---|---|---|
| Placement Tech | Maggie | Sample Type | Radon | Pickup Tech | |
| Placement Date | 8/30/21 | Sample Media | | Pickup Date | |
| Address | | | | Email | |

| Sample # | Location/ room | SQFT >2000 | HVAC Y/N | Window Y/N | Fan Y/N | Time in | Time out | Comment |
|---|---|---|---|---|---|---|---|---|
| CB9723896 | CB Audio - 1 | | Y | Y | N | 4:47 | | |
| CB 9723770 D | CB Audio D | | Y | Y | N | 4:47 | | |
| CB 9723900 | CB Audio - 2 | | Y | Y | N | 4:47 | | |
| CB 9723765 B | CB Audio - B | | Y | Y | N | 4:47 | | |
| CB 9723787 | CB - Lobby | | Y | Y | N | 4:50 | | |
| CB9723788 | CB - office | | Y | Y | N | 5:06 | | |
| CB 9723 761 | CB - Hall 107 | | Y | Y | N | 5:01 | | |
| CB 9723894 | CB - 102 Class | | Y | Y | N | 5:03 | | |
| CB 9723887 | CB - Cafe - 1 | | Y | Y | Y | 5:11 | | |
| CB 9723762 | CB - Cafe - 2 | | Y | Y | Y | 5:11 | | |
| CB 9723884 | CB - Hall/Mezzanine | | Y | Y | N | 5:15 | | |
| CB 9723890 | CB - 216 Class | | Y | Y | N | 5:20 | | |
| CB 9723783 | CB - Library - 1 | | Y | Y | N | 5:30 | | |
| CB 9723 764 | CB - Library - 2 | | Y | Y | N | 5:30 | | |
| CB 9723763 | CB - 226 Class | | Y | Y | N | 5:35 | | |
| CB 9723882 | CB - Gym | | Y | Y | N | 5:48 | | |
| CB 9723760 | CB - Gym | | Y | Y | N | 5:48 | | |
| CB 9723898 | CB - Stair Landing 316 | | Y | Y | N | 5:50 | | |
| CB 9723782 | CB - 307 Class | | Y | Y | N | 5:53 | | |
| CB 9723766 | CB - Stair Landing 302 | | Y | Y | N | 6:00 | | |
| CB 9723779 D | CB - 226 Class D | | Y | Y | N | 6:01 | | |

**Appendix C:** VOCs (TO+15) Analytical Results

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

September 9, 2021

**Karl Ford**
**Total Environmental Concepts - Lorton**
8382 Terminal Road, Suite B
Lorton, VA 22079

Reference: PSS Project No: **21090116**
Project Name: ACPS IAQ Testing
Project Location: Charles Barrett School
Project ID.: 4920002

Dear Karl Ford:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21090116**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 6, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

**Dan Prucnal**
Laboratory Manager

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

# Explanation of Qualifiers

Project Name: ACPS IAQ Testing

PSS Project No.: 21090116

## Project ID: 4920002

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/01/2021 at 02:19 pm

| PSS Sample ID | Sample ID | Matrix | Date/Time Collected |
|---|---|---|---|
| 21090116-001 | CB - Cafe | AIR | 08/30/21 21:44 |
| 21090116-002 | CB - Class 102 | AIR | 08/30/21 21:56 |
| 21090116-003 | CB - Hall 107 | AIR | 08/30/21 22:01 |
| 21090116-004 | CB - Office | AIR | 08/30/21 22:06 |
| 21090116-005 | CB - Lobby | AIR | 08/30/21 22:12 |
| 21090116-006 | CB - Auditorium | AIR | 08/30/21 22:08 |
| 21090116-007 | CB - Hall 212 | AIR | 08/30/21 21:18 |
| 21090116-008 | CB - Class 216 | AIR | 08/30/21 21:20 |
| 21090116-009 | CB - Library | AIR | 08/30/21 21:28 |
| 21090116-010 | CB - Class 226 | AIR | 08/30/21 21:31 |
| 21090116-011 | CB - Gym | AIR | 08/30/21 21:38 |
| 21090116-012 | CB - Room 316 | AIR | 08/30/21 21:00 |
| 21090116-013 | CB - Room 307 | AIR | 08/30/21 20:53 |
| 21090116-014 | CB - Stair 301 | AIR | 08/30/21 20:36 |
| 21090116-015 | CB - Outdoor | AIR | 08/30/21 22:29 |

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

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# Explanation of Qualifiers

Project Name: ACPS IAQ Testing

PSS Project No.: 21090116

**Standard Flags/Abbreviations:**

| | |
|---|---|
| B | A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination. |
| C | Results Pending Final Confirmation. |
| E | The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated. |
| Fail | The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1. |
| J | The target analyte was positively identified below the reporting limit but greater than the MDL. |
| MDL | This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. |
| ND | Not Detected at or above the reporting limit. |
| RL | PSS Reporting Limit. |
| U | Not detected. |

**Certifications:**

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Cafe** **Date/Time Sampled: 08/30/2021 21:44** **PSS Sample ID: 21090116-001**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **11** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 2-Butanone (MEK) | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Chloromethane | **0.99** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Dichlorodifluoromethane | **1.5** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Cafe** **Date/Time Sampled: 08/30/2021 21:44** **PSS Sample ID: 21090116-001**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Naphthalene | ND | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Toluene | **0.94** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 16:20 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 16:20* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Class 102** **Date/Time Sampled: 08/30/2021 21:56** **PSS Sample ID: 21090116-002**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **18** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 2-Butanone (MEK) | **1.8** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Chloromethane | **0.97** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Dichlorodifluoromethane | **1.6** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Class 102** **Date/Time Sampled: 08/30/2021 21:56** **PSS Sample ID: 21090116-002**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Naphthalene | ND | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Toluene | **1.5** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 17:14 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 17:14* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Hall 107** **Date/Time Sampled: 08/30/2021 22:01** **PSS Sample ID: 21090116-003**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **15** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 2-Butanone (MEK) | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Chloromethane | **0.93** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Dichlorodifluoromethane | **1.6** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Hall 107** **Date/Time Sampled: 08/30/2021 22:01** **PSS Sample ID: 21090116-003**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Naphthalene | ND | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Toluene | **1.4** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 18:08 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 18:08* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Office** **Date/Time Sampled: 08/30/2021 22:06** **PSS Sample ID: 21090116-004**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **32** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 2-Butanone (MEK) | **3.2** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Chloromethane | **1.2** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Dichlorodifluoromethane | **1.8** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Office** **Date/Time Sampled: 08/30/2021 22:06** **PSS Sample ID: 21090116-004**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Naphthalene | **0.52** | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Toluene | **6.3** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 19:02 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 19:02* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Lobby** **Date/Time Sampled: 08/30/2021 22:12** **PSS Sample ID: 21090116-005**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **18** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 2-Butanone (MEK) | **3.8** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Chloromethane | **0.95** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Dichlorodifluoromethane | **1.7** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Lobby** **Date/Time Sampled: 08/30/2021 22:12** **PSS Sample ID: 21090116-005**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Naphthalene | ND | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Toluene | **2.1** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 19:56 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 19:56* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Auditorium** **Date/Time Sampled: 08/30/2021 22:08** **PSS Sample ID: 21090116-006**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **17** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Benzene | **0.35** | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 2-Butanone (MEK) | **2.1** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Chloromethane | **0.91** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Dichlorodifluoromethane | **1.4** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Auditorium** **Date/Time Sampled: 08/30/2021 22:08** **PSS Sample ID: 21090116-006**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Naphthalene | **0.94** | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Toluene | **1.7** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 20:50 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 20:50* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Hall 212** **Date/Time Sampled: 08/30/2021 21:18** **PSS Sample ID: 21090116-007**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **18** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 2-Butanone (MEK) | **4.0** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Chloromethane | **0.97** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Dichlorodifluoromethane | **1.7** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Hall 212** **Date/Time Sampled: 08/30/2021 21:18** **PSS Sample ID: 21090116-007**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Naphthalene | ND | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Toluene | **2.3** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 21:43 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 21:43* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Class 216** **Date/Time Sampled: 08/30/2021 21:20** **PSS Sample ID: 21090116-008**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **22** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 2-Butanone (MEK) | **3.2** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Chloromethane | **1.1** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Dichlorodifluoromethane | **1.7** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Class 216** **Date/Time Sampled: 08/30/2021 21:20** **PSS Sample ID: 21090116-008**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Naphthalene | ND | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Toluene | **3.4** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 22:37 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 22:37* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Library** **Date/Time Sampled: 08/30/2021 21:28** **PSS Sample ID: 21090116-009**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **24** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Benzene | **0.32** | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 2-Butanone (MEK) | **9.9** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Chloromethane | **0.99** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Dichlorodifluoromethane | **1.6** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Library** **Date/Time Sampled: 08/30/2021 21:28** **PSS Sample ID: 21090116-009**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Naphthalene | **0.73** | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Toluene | **3.5** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/02/21 23:30 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *101* | *%* | *87-120* | | *1* | *09/02/21* | *09/02/21 23:30* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Class 226** **Date/Time Sampled: 08/30/2021 21:31** **PSS Sample ID: 21090116-010**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **24** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 2-Butanone (MEK) | **5.8** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Chloromethane | **0.93** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Dichlorodifluoromethane | **1.6** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Class 226** **Date/Time Sampled: 08/30/2021 21:31** **PSS Sample ID: 21090116-010**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Naphthalene | **0.63** | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Toluene | **3.7** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 00:24 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | *%* | *87-120* | | *1* | *09/02/21* | *09/03/21 00:24* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Gym** **Date/Time Sampled: 08/30/2021 21:38** **PSS Sample ID: 21090116-011**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **17** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 2-Butanone (MEK) | **1.7** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Chloromethane | **0.99** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Dichlorodifluoromethane | **8.3** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Gym** **Date/Time Sampled: 08/30/2021 21:38** **PSS Sample ID: 21090116-011**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Naphthalene | ND | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Toluene | **4.1** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Trichlorofluoromethane | **1.3** | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 01:18 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | *%* | *87-120* | | *1* | *09/02/21* | *09/03/21 01:18* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Room 316** **Date/Time Sampled: 08/30/2021 21:00** **PSS Sample ID: 21090116-012**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **19** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Benzene | **0.32** | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 2-Butanone (MEK) | **4.4** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Chloromethane | **1.1** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Dichlorodifluoromethane | **2.7** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Room 316** **Date/Time Sampled: 08/30/2021 21:00** **PSS Sample ID: 21090116-012**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Naphthalene | **0.63** | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Toluene | **3.7** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Trichlorofluoromethane | **1.2** | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 02:12 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | *%* | *87-120* | | *1* | *09/02/21* | *09/03/21 02:12* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Room 307** **Date/Time Sampled: 08/30/2021 20:53** **PSS Sample ID: 21090116-013**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **18** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Benzene | **0.35** | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 2-Butanone (MEK) | **3.4** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Chloromethane | **0.97** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Dichlorodifluoromethane | **1.4** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Room 307** **Date/Time Sampled: 08/30/2021 20:53** **PSS Sample ID: 21090116-013**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Naphthalene | **0.73** | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Toluene | **6.0** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 03:07 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | *%* | *87-120* | | *1* | *09/02/21* | *09/03/21 03:07* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Stair 301** **Date/Time Sampled: 08/30/2021 20:36** **PSS Sample ID: 21090116-014**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | **18** | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 2-Butanone (MEK) | **4.5** | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Chloroform | **1.0** | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Chloromethane | **1.1** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Dichlorodifluoromethane | **1.7** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Stair 301** **Date/Time Sampled: 08/30/2021 20:36** **PSS Sample ID: 21090116-014**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Naphthalene | **0.58** | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Toluene | **3.6** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 04:02 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | *%* | *87-120* | | *1* | *09/02/21* | *09/03/21 04:02* | *1014* |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Outdoor** **Date/Time Sampled: 08/30/2021 22:29** **PSS Sample ID: 21090116-015**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS Analytical Method: EPA TO-15 Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| Acetone | ND | ug/M3 | 9.5 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Benzene | ND | ug/M3 | 0.32 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Benzyl Chloride | ND | ug/M3 | 1.0 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Bromodichloromethane | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Bromoform | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Bromomethane | ND | ug/M3 | 0.78 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,3-Butadiene | ND | ug/M3 | 0.44 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 2-Butanone (MEK) | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Carbon Disulfide | ND | ug/M3 | 12 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Carbon Tetrachloride | ND | ug/M3 | 1.3 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Chlorobenzene | ND | ug/M3 | 0.92 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Chloroethane | ND | ug/M3 | 0.53 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Chloroform | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Chloromethane | **0.89** | ug/M3 | 0.41 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Allyl Chloride (3-Chloropropene) | ND | ug/M3 | 0.63 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Cyclohexane | ND | ug/M3 | 0.69 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Dibromochloromethane | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,2-Dibromoethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,2-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,3-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,4-Dichlorobenzene | ND | ug/M3 | 1.2 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Dichlorodifluoromethane | **1.5** | ug/M3 | 0.99 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,1-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,2-Dichloroethane | ND | ug/M3 | 0.81 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,1-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| cis-1,2-Dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| trans-1,2-dichloroethene | ND | ug/M3 | 0.79 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,2-Dichloropropane | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| cis-1,3-Dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| trans-1,3-dichloropropene | ND | ug/M3 | 0.91 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,2-Dichlorotetrafluoroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,4-Dioxane (P-Dioxane) | ND | ug/M3 | 3.6 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Ethyl Acetate | ND | ug/M3 | 0.72 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Ethylbenzene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 4-Ethyltoluene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |

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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Sample ID: CB - Outdoor** **Date/Time Sampled: 08/30/2021 22:29** **PSS Sample ID: 21090116-015**
**Matrix: AIR** **Date/Time Received: 09/01/2021 14:19**

VOCs in Air by GC/MS | Analytical Method: EPA TO-15 | Preparation Method: TO-15P

Qualifier(s): See Batch 187326 on Case Narrative.

| | Result | Units | RL | Flag | Dil | Prepared | Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| n-Heptane | ND | ug/M3 | 0.82 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Hexachlorobutadiene | ND | ug/M3 | 2.1 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| n-Hexane | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 2-Hexanone (MBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Isopropylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Methylene Chloride | ND | ug/M3 | 14 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 4-Methyl-2-Pentanone (MIBK) | ND | ug/M3 | 2.0 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Methyl-t-Butyl Ether | ND | ug/M3 | 0.36 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Naphthalene | ND | ug/M3 | 0.52 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Propylene | ND | ug/M3 | 1.7 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| n-Propylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Styrene | ND | ug/M3 | 4.3 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,1,2,2-Tetrachloroethane | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Tetrachloroethene | ND | ug/M3 | 1.4 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Tetrahydrofuran | ND | ug/M3 | 0.59 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Toluene | **0.75** | ug/M3 | 0.38 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,2,4-Trichlorobenzene | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,1,1-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,1,2-Trichloroethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Trichloroethene | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Trichlorofluoromethane | ND | ug/M3 | 1.1 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/M3 | 1.5 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,2,4-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 1,3,5-Trimethylbenzene | ND | ug/M3 | 0.98 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| 2,2,4-Trimethylpentane | ND | ug/M3 | 0.93 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Vinyl acetate | ND | ug/M3 | 1.8 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Bromoethene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| Vinyl chloride | ND | ug/M3 | 0.51 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| m&p-Xylene | ND | ug/M3 | 0.87 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |
| o-Xylene | ND | ug/M3 | 0.43 | | 1 | 09/02/21 | 09/03/21 04:56 | 1014 |

| *Surrogate(s)* | *Recovery* | | *Limits* | | | | |
|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | *%* | *87-120* | | *1* | *09/02/21* | *09/03/21 04:56* | *1014* |

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Project Name: ACPS IAQ Testing

PSS Project No.: 21090116

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

**Sample Receipt:**

Soil gas/indoor air not indicated on COC; samples are indoor air.
Can ID on COC for 013 is 426; received canister 4264.
Can ID on COC for 014 is 425; received canister 4254.

**Analytical:**

**VOCs in Air by GC/MS**

**Batch: 187326**

Method exceedance: Laboratory control sample/laboratory control sample duplicate (LCS/LCSD)exceedances identified; see QC summary.

**NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.**

EPA TO-15: 1,2-Dichlorotetrafluoroethane, Chloroethane, Dibromochloromethane

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# Lab Chronology

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

| Method | Client Sample ID | Analysis Type | PSS Sample ID | Mtx | Prep Batch | Analytical Batch | Prepared | Analyzed |
|---|---|---|---|---|---|---|---|---|
| **EPA TO-15** | CB - Cafe | Initial | 21090116-001 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 16:20 |
| | CB - Class 102 | Initial | 21090116-002 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 17:14 |
| | CB - Hall 107 | Initial | 21090116-003 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 18:08 |
| | CB - Office | Initial | 21090116-004 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 19:02 |
| | CB - Lobby | Initial | 21090116-005 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 19:56 |
| | CB - Auditorium | Initial | 21090116-006 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 20:50 |
| | CB - Hall 212 | Initial | 21090116-007 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 21:43 |
| | CB - Class 216 | Initial | 21090116-008 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 22:37 |
| | CB - Library | Initial | 21090116-009 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 23:30 |
| | CB - Class 226 | Initial | 21090116-010 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/03/2021 00:24 |
| | CB - Gym | Initial | 21090116-011 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/03/2021 01:18 |
| | CB - Room 316 | Initial | 21090116-012 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/03/2021 02:12 |
| | CB - Room 307 | Initial | 21090116-013 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/03/2021 03:07 |
| | CB - Stair 301 | Initial | 21090116-014 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/03/2021 04:02 |
| | CB - Outdoor | Initial | 21090116-015 | A | 87549 | 187326 | 09/02/2021 09:15 | 09/03/2021 04:56 |
| | 87549-1-BKS | BKS | 87549-1-BKS | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 10:56 |
| | 87549-1-BLK | BLK | 87549-1-BLK | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 13:36 |
| | 87549-1-BSD | BSD | 87549-1-BSD | A | 87549 | 187326 | 09/02/2021 09:15 | 09/02/2021 11:47 |

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# QC Summary

Project Name ACPS IAQ Testing
PSS Project No.: 21090116

**Analytical Method: EPA TO-15** Prep Method: TO-15P
Seq Number: 187326 Matrix: Air Date Prep: 09/02/21
MB Sample Id: 87549-1-BLK LCS Sample Id: 87549-1-BKS LCSD Sample Id: 87549-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | <9.498 | 11.87 | 9.902 | 83 | 9.949 | 84 | 69-118 | 1 | 25 | ug/M3 | |
| Benzene | <0.3193 | 15.97 | 14.50 | 91 | 14.63 | 92 | 79-107 | 1 | 25 | ug/M3 | |
| Benzyl Chloride | <1.035 | 25.87 | 29.19 | 113 | 29.24 | 113 | 78-143 | 0 | 25 | ug/M3 | |
| Bromodichloromethane | <1.340 | 33.49 | 29.40 | 88 | 29.47 | 88 | 81-111 | 0 | 25 | ug/M3 | |
| Bromoform | <2.067 | 51.67 | 51.57 | 100 | 51.26 | 99 | 78-133 | 1 | 25 | ug/M3 | |
| Bromomethane | <0.7764 | 19.41 | 19.84 | 102 | 19.72 | 102 | 76-116 | 0 | 25 | ug/M3 | |
| 1,3-Butadiene | <0.4423 | 11.06 | 10.90 | 99 | 10.81 | 98 | 70-116 | 1 | 25 | ug/M3 | |
| 2-Butanone (MEK) | <1.474 | 14.74 | 13.06 | 89 | 13.18 | 89 | 74-114 | 0 | 25 | ug/M3 | |
| Carbon Disulfide | <12.45 | 15.56 | 14.29 | 92 | 14.26 | 92 | 79-117 | 0 | 25 | ug/M3 | |
| Carbon Tetrachloride | <1.258 | 31.45 | 27.48 | 87 | 27.80 | 88 | 81-110 | 1 | 25 | ug/M3 | |
| Chlorobenzene | <0.9204 | 23.01 | 23.52 | 102 | 23.29 | 101 | 84-119 | 1 | 25 | ug/M3 | |
| Chloroethane | <0.5276 | 13.19 | 13.29 | 101 | 13.22 | 100 | 72-118 | 1 | 25 | ug/M3 | |
| Chloroform | <0.9761 | 24.40 | 21.62 | 89 | 21.67 | 89 | 82-108 | 0 | 25 | ug/M3 | |
| Chloromethane | <0.4128 | 10.32 | 9.433 | 91 | 9.227 | 89 | 64-121 | 2 | 25 | ug/M3 | |
| Allyl Chloride (3-Chloropropene) | <0.6258 | 15.64 | 14.52 | 93 | 14.61 | 93 | 77-113 | 0 | 25 | ug/M3 | |
| Cyclohexane | <0.6881 | 17.20 | 16.89 | 98 | 16.96 | 99 | 82-110 | 1 | 25 | ug/M3 | |
| Dibromochloromethane | <1.703 | 42.58 | 38.41 | 90 | 38.66 | 91 | 82-113 | 1 | 25 | ug/M3 | |
| 1,2-Dibromoethane | <1.536 | 38.40 | 36.02 | 94 | 36.10 | 94 | 86-110 | 0 | 25 | ug/M3 | |
| 1,2-Dichlorobenzene | <1.202 | 30.05 | 30.11 | 100 | 29.99 | 100 | 83-130 | 0 | 25 | ug/M3 | |
| 1,3-Dichlorobenzene | <1.202 | 30.05 | 29.87 | 99 | 29.93 | 100 | 85-128 | 1 | 25 | ug/M3 | |
| 1,4-Dichlorobenzene | <1.202 | 30.05 | 29.81 | 99 | 29.81 | 99 | 82-132 | 0 | 25 | ug/M3 | |
| Dichlorodifluoromethane | <0.9887 | 24.72 | 21.70 | 88 | 20.96 | 85 | 62-122 | 3 | 25 | ug/M3 | |
| 1,1-Dichloroethane | <0.8092 | 20.23 | 18.37 | 91 | 18.53 | 92 | 79-110 | 1 | 25 | ug/M3 | |
| 1,2-Dichloroethane | <0.8092 | 20.23 | 17.28 | 85 | 17.32 | 86 | 75-112 | 1 | 25 | ug/M3 | |
| 1,1-Dichloroethene | <0.7926 | 19.82 | 18.94 | 96 | 19.06 | 96 | 80-110 | 0 | 25 | ug/M3 | |
| cis-1,2-Dichloroethene | <0.7926 | 19.82 | 19.02 | 96 | 19.10 | 96 | 84-109 | 0 | 25 | ug/M3 | |
| trans-1,2-dichloroethene | <0.7926 | 19.82 | 18.90 | 95 | 18.86 | 95 | 81-109 | 0 | 25 | ug/M3 | |
| 1,2-Dichloropropane | <1.848 | 23.10 | 20.97 | 91 | 21.06 | 91 | 81-111 | 0 | 25 | ug/M3 | |
| cis-1,3-Dichloropropene | <0.9074 | 22.68 | 22.32 | 98 | 22.50 | 99 | 89-109 | 1 | 25 | ug/M3 | |
| trans-1,3-dichloropropene | <0.9074 | 22.68 | 21.78 | 96 | 22.18 | 98 | 89-114 | 2 | 25 | ug/M3 | |
| 1,2-Dichlorotetrafluoroethane | <1.398 | 34.94 | 33.26 | 95 | 32.77 | 94 | 72-116 | 1 | 25 | ug/M3 | |
| 1,4-Dioxane (P-Dioxane) | <3.602 | 18.01 | 18.55 | 103 | 18.30 | 102 | 70-120 | 1 | 25 | ug/M3 | |
| Ethyl Acetate | <0.7204 | 18.01 | 18.80 | 104 | 18.95 | 105 | 87-124 | 1 | 25 | ug/M3 | |
| Ethylbenzene | <0.4340 | 21.70 | 24.22 | 112 | 24.13 | 111 | 87-125 | 1 | 25 | ug/M3 | |
| 4-Ethyltoluene | <0.9827 | 24.57 | 26.09 | 106 | 26.29 | 107 | 87-127 | 1 | 25 | ug/M3 | |
| n-Heptane | <0.8193 | 20.48 | 20.97 | 102 | 21.06 | 103 | 90-110 | 1 | 25 | ug/M3 | |
| Hexachlorobutadiene | <2.132 | 53.30 | 51.17 | 96 | 51.28 | 96 | 83-126 | 0 | 25 | ug/M3 | |
| n-Hexane | <14.09 | 17.61 | 17.83 | 101 | 18.04 | 102 | 84-114 | 1 | 25 | ug/M3 | |
| 2-Hexanone (MBK) | <2.047 | 20.47 | 19.16 | 94 | 19.33 | 94 | 68-133 | 0 | 25 | ug/M3 | |
| Isopropylbenzene | <0.9827 | 24.57 | 24.72 | 101 | 24.91 | 101 | 88-117 | 0 | 25 | ug/M3 | |
| Methylene Chloride | <13.89 | 17.36 | 15.14 | 87 | 15.63 | 90 | 63-130 | 3 | 25 | ug/M3 | |
| 4-Methyl-2-Pentanone (MIBK) | <2.047 | 20.47 | 19.20 | 94 | 19.29 | 94 | 78-115 | 0 | 25 | ug/M3 | |
| Methyl-t-Butyl Ether | <0.3604 | 18.02 | 18.49 | 103 | 18.63 | 103 | 86-109 | 0 | 25 | ug/M3 | |
| Naphthalene | <0.5240 | 26.20 | 34.84 | 133 | 34.42 | 131 | 65-129 | 2 | 25 | ug/M3 | H |
| Propylene | <1.720 | 8.602 | 7.845 | 91 | 7.535 | 88 | 58-129 | 3 | 25 | ug/M3 | |
| n-Propylbenzene | <0.9828 | 24.57 | 25.16 | 102 | 25.11 | 102 | 86-121 | 0 | 25 | ug/M3 | |
| Styrene | <4.258 | 21.29 | 24.95 | 117 | 24.78 | 116 | 86-137 | 1 | 25 | ug/M3 | |
| 1,1,2,2-Tetrachloroethane | <1.373 | 34.31 | 33.70 | 98 | 33.63 | 98 | 88-119 | 0 | 25 | ug/M3 | |
| Tetrachloroethene | <1.356 | 33.90 | 31.94 | 94 | 32.07 | 95 | 86-107 | 1 | 25 | ug/M3 | |
| Tetrahydrofuran | <0.5895 | 14.74 | 13.91 | 94 | 14.12 | 96 | 80-117 | 2 | 25 | ug/M3 | |
| Toluene | <0.3767 | 18.83 | 18.91 | 100 | 19.06 | 101 | 91-106 | 1 | 25 | ug/M3 | |

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# QC Summary

Project Name ACPS IAQ Testing
PSS Project No.: 21090116

**Analytical Method: EPA TO-15** Prep Method: TO-15P
Seq Number: 187326 Matrix: Air Date Prep: 09/02/21
MB Sample Id: 87549-1-BLK LCS Sample Id: 87549-1-BKS LCSD Sample Id: 87549-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | <1.484 | 37.09 | 43.77 | 118 | 43.18 | 116 | 75-126 | 2 | 25 | ug/M3 | |
| 1,1,1-Trichloroethane | <1.091 | 27.27 | 24.05 | 88 | 24.27 | 89 | 81-109 | 1 | 25 | ug/M3 | |
| 1,1,2-Trichloroethane | <1.091 | 27.27 | 24.98 | 92 | 25.04 | 92 | 83-111 | 0 | 25 | ug/M3 | |
| Trichloroethene | <1.074 | 26.86 | 25.25 | 94 | 25.41 | 95 | 88-106 | 1 | 25 | ug/M3 | |
| Trichlorofluoromethane | <1.123 | 28.08 | 25.39 | 90 | 25.33 | 90 | 78-109 | 0 | 25 | ug/M3 | |
| 1,1,2-Trichlorotrifluoroethane | <1.532 | 38.31 | 35.93 | 94 | 36.08 | 94 | 84-107 | 0 | 25 | ug/M3 | |
| 1,2,4-Trimethylbenzene | <0.9828 | 24.57 | 26.88 | 109 | 26.88 | 109 | 86-130 | 0 | 25 | ug/M3 | |
| 1,3,5-Trimethylbenzene | <0.9828 | 24.57 | 25.36 | 103 | 25.60 | 104 | 87-122 | 1 | 25 | ug/M3 | |
| 2,2,4-Trimethylpentane | <0.9339 | 23.35 | 21.85 | 94 | 21.99 | 94 | 78-107 | 0 | 25 | ug/M3 | |
| Vinyl acetate | <1.760 | 17.60 | 16.58 | 94 | 16.75 | 95 | 76-119 | 1 | 25 | ug/M3 | |
| Bromoethene | <0.8746 | 21.86 | 23.48 | 107 | 23.31 | 107 | 77-117 | 0 | 25 | ug/M3 | |
| Vinyl chloride | <0.5110 | 12.78 | 12.42 | 97 | 12.24 | 96 | 72-116 | 1 | 25 | ug/M3 | |
| m&p-Xylene | <0.8681 | 43.41 | 46.92 | 108 | 46.70 | 108 | 88-122 | 0 | 25 | ug/M3 | |
| o-Xylene | <0.4341 | 21.70 | 23.22 | 107 | 23.05 | 106 | 89-120 | 1 | 25 | ug/M3 | |

| Surrogate | MB %Rec | MB Flag | LCS Result | LCS Flag | LCSD Result | LCSD Flag | Limits | Units |
|---|---|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 102 | | 103 | | 103 | | 87-120 | % |

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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# QC Summary

Project Name ACPS IAQ Testing
PSS Project No.: 21090116

**Analytical Method: EPA TO-15**
Seq Number: 187326 Matrix: Air
CCV Sample Id: CCV-01 Analyzed Date: 09/02/21 10:05

| Parameter | Spike Amount | CCV Result | CCV %Rec | Limits | Units | Flag |
|---|---|---|---|---|---|---|
| Acetone | 11.87 | 10.08 | 85 | 70-130 | ug/M3 | |
| Benzene | 15.97 | 14.88 | 93 | 70-130 | ug/M3 | |
| Benzyl Chloride | 25.87 | 27.04 | 105 | 70-130 | ug/M3 | |
| Bromodichloromethane | 33.49 | 29.59 | 88 | 70-130 | ug/M3 | |
| Bromoform | 51.67 | 51.13 | 99 | 70-130 | ug/M3 | |
| Bromomethane | 19.41 | 19.26 | 99 | 70-130 | ug/M3 | |
| 1,3-Butadiene | 11.06 | 10.60 | 96 | 70-130 | ug/M3 | |
| 2-Butanone (MEK) | 14.74 | 13.36 | 91 | 70-130 | ug/M3 | |
| Carbon Disulfide | 15.56 | 14.95 | 96 | 70-130 | ug/M3 | |
| Carbon Tetrachloride | 31.45 | 27.26 | 87 | 70-130 | ug/M3 | |
| Chlorobenzene | 23.01 | 23.74 | 103 | 70-130 | ug/M3 | |
| Chloroethane | 13.19 | 13.11 | 99 | 70-130 | ug/M3 | |
| Chloroform | 24.40 | 21.89 | 90 | 70-130 | ug/M3 | |
| Chloromethane | 10.32 | 9.028 | 87 | 70-130 | ug/M3 | |
| Allyl Chloride (3-Chloropropene) | 15.64 | 14.49 | 93 | 70-130 | ug/M3 | |
| Cyclohexane | 17.20 | 17.12 | 100 | 70-130 | ug/M3 | |
| Dibromochloromethane | 42.58 | 38.03 | 89 | 70-130 | ug/M3 | |
| 1,2-Dibromoethane | 38.40 | 36.28 | 94 | 70-130 | ug/M3 | |
| 1,2-Dichlorobenzene | 30.05 | 29.06 | 97 | 70-130 | ug/M3 | |
| 1,3-Dichlorobenzene | 30.05 | 29.24 | 97 | 70-130 | ug/M3 | |
| 1,4-Dichlorobenzene | 30.05 | 28.94 | 96 | 70-130 | ug/M3 | |
| Dichlorodifluoromethane | 24.72 | 22.55 | 91 | 70-130 | ug/M3 | |
| 1,1-Dichloroethane | 20.23 | 18.71 | 92 | 70-130 | ug/M3 | |
| 1,2-Dichloroethane | 20.23 | 17.63 | 87 | 70-130 | ug/M3 | |
| 1,1-Dichloroethene | 19.82 | 18.85 | 95 | 70-130 | ug/M3 | |
| cis-1,2-Dichloroethene | 19.82 | 19.29 | 97 | 70-130 | ug/M3 | |
| trans-1,2-dichloroethene | 19.82 | 19.02 | 96 | 70-130 | ug/M3 | |
| 1,2-Dichloropropane | 23.10 | 21.36 | 92 | 70-130 | ug/M3 | |
| cis-1,3-Dichloropropene | 22.68 | 22.55 | 99 | 70-130 | ug/M3 | |
| trans-1,3-dichloropropene | 22.68 | 21.88 | 96 | 70-130 | ug/M3 | |
| 1,2-Dichlorotetrafluoroethane | 34.94 | 32.25 | 92 | 70-130 | ug/M3 | |
| 1,4-Dioxane (P-Dioxane) | 18.01 | 19.08 | 106 | 70-130 | ug/M3 | |
| Ethyl Acetate | 18.01 | 19.27 | 107 | 70-130 | ug/M3 | |
| Ethylbenzene | 21.70 | 24.35 | 112 | 70-130 | ug/M3 | |
| 4-Ethyltoluene | 24.57 | 26.10 | 106 | 70-130 | ug/M3 | |
| n-Heptane | 20.48 | 21.20 | 104 | 70-130 | ug/M3 | |
| Hexachlorobutadiene | 53.30 | 48.41 | 91 | 70-130 | ug/M3 | |
| n-Hexane | 17.61 | 18.14 | 103 | 70-130 | ug/M3 | |
| 2-Hexanone (MBK) | 20.47 | 19.37 | 95 | 70-130 | ug/M3 | |
| Isopropylbenzene | 24.57 | 24.85 | 101 | 70-130 | ug/M3 | |
| Methylene Chloride | 17.36 | 15.10 | 87 | 70-130 | ug/M3 | |
| 4-Methyl-2-Pentanone (MIBK) | 20.47 | 19.33 | 94 | 70-130 | ug/M3 | |
| Methyl-t-Butyl Ether | 18.02 | 18.65 | 103 | 70-130 | ug/M3 | |
| Naphthalene | 26.20 | 27.08 | 103 | 70-130 | ug/M3 | |
| Propylene | 8.602 | 7.413 | 86 | 70-130 | ug/M3 | |
| n-Propylbenzene | 24.57 | 24.77 | 101 | 70-130 | ug/M3 | |
| Styrene | 21.29 | 24.69 | 116 | 70-130 | ug/M3 | |
| 1,1,2,2-Tetrachloroethane | 34.31 | 33.46 | 98 | 70-130 | ug/M3 | |
| Tetrachloroethene | 33.90 | 31.87 | 94 | 70-130 | ug/M3 | |
| Tetrahydrofuran | 14.74 | 14.32 | 97 | 70-130 | ug/M3 | |
| Toluene | 18.83 | 19.03 | 101 | 70-130 | ug/M3 | |

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# QC Summary

Project Name ACPS IAQ Testing
PSS Project No.: 21090116

**Analytical Method: EPA TO-15**

Seq Number: 187326 Matrix: Air

CCV Sample Id: CCV-01 Analyzed Date: 09/02/21 10:05

| Parameter | Spike Amount | CCV Result | CCV %Rec | Limits | Units | Flag |
|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 37.09 | 37.22 | 100 | 70-130 | ug/M3 | |
| 1,1,1-Trichloroethane | 27.27 | 24.49 | 90 | 70-130 | ug/M3 | |
| 1,1,2-Trichloroethane | 27.27 | 25.21 | 92 | 70-130 | ug/M3 | |
| Trichloroethene | 26.86 | 25.51 | 95 | 70-130 | ug/M3 | |
| Trichlorofluoromethane | 28.08 | 25.08 | 89 | 70-130 | ug/M3 | |
| 1,1,2-Trichlorotrifluoroethane | 38.31 | 35.88 | 94 | 70-130 | ug/M3 | |
| 1,2,4-Trimethylbenzene | 24.57 | 26.46 | 108 | 70-130 | ug/M3 | |
| 1,3,5-Trimethylbenzene | 24.57 | 25.18 | 102 | 70-130 | ug/M3 | |
| 2,2,4-Trimethylpentane | 23.35 | 22.19 | 95 | 70-130 | ug/M3 | |
| Vinyl acetate | 17.60 | 16.48 | 94 | 70-130 | ug/M3 | |
| Bromoethene | 21.86 | 22.78 | 104 | 70-130 | ug/M3 | |
| Vinyl chloride | 12.78 | 12.04 | 94 | 70-130 | ug/M3 | |
| m&p-Xylene | 43.41 | 47.15 | 109 | 70-130 | ug/M3 | |
| o-Xylene | 21.70 | 23.23 | 107 | 70-130 | ug/M3 | |

| Surrogate | CCV Result | Limits | Units | Flag |
|---|---|---|---|---|
| 4-Bromofluorobenzene | 82 | 50-150 | % | |

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# QC Summary

Project Name ACPS IAQ Testing
PSS Project No.: 21090116

**Analytical Method: EPA TO-15**

Seq Number: 185968 Matrix: Air
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/15/21 13:32

| Parameter | Spike Amount | ICV Result | ICV %Rec | Limits | Units | Flag |
|---|---|---|---|---|---|---|
| Acetone | 11.87 | 10.66 | 90 | 70-130 | ug/M3 | |
| Benzene | 15.97 | 15.51 | 97 | 70-130 | ug/M3 | |
| Benzyl Chloride | 25.87 | 27.08 | 105 | 70-130 | ug/M3 | |
| Bromodichloromethane | 33.49 | 32.04 | 96 | 70-130 | ug/M3 | |
| Bromoform | 51.67 | 53.22 | 103 | 70-130 | ug/M3 | |
| Bromomethane | 19.41 | 19.17 | 99 | 70-130 | ug/M3 | |
| 1,3-Butadiene | 11.06 | 10.68 | 97 | 70-130 | ug/M3 | |
| 2-Butanone (MEK) | 14.74 | 14.29 | 97 | 70-130 | ug/M3 | |
| Carbon Disulfide | 15.56 | 15.20 | 98 | 70-130 | ug/M3 | |
| Carbon Tetrachloride | 31.45 | 30.48 | 97 | 70-130 | ug/M3 | |
| Chlorobenzene | 23.01 | 22.75 | 99 | 70-130 | ug/M3 | |
| Chloroethane | 13.19 | 12.91 | 98 | 70-130 | ug/M3 | |
| Chloroform | 24.40 | 23.55 | 97 | 70-130 | ug/M3 | |
| Chloromethane | 10.32 | 9.584 | 93 | 70-130 | ug/M3 | |
| Allyl Chloride (3-Chloropropene) | 15.64 | 15.43 | 99 | 70-130 | ug/M3 | |
| Cyclohexane | 17.20 | 18.31 | 106 | 70-130 | ug/M3 | |
| Dibromochloromethane | 42.58 | 41.98 | 99 | 70-130 | ug/M3 | |
| 1,2-Dibromoethane | 38.40 | 38.46 | 100 | 70-130 | ug/M3 | |
| 1,2-Dichlorobenzene | 30.05 | 29.90 | 100 | 70-130 | ug/M3 | |
| 1,3-Dichlorobenzene | 30.05 | 30.07 | 100 | 70-130 | ug/M3 | |
| 1,4-Dichlorobenzene | 30.05 | 30.27 | 101 | 70-130 | ug/M3 | |
| Dichlorodifluoromethane | 24.72 | 23.21 | 94 | 70-130 | ug/M3 | |
| 1,1-Dichloroethane | 20.23 | 19.62 | 97 | 70-130 | ug/M3 | |
| 1,2-Dichloroethane | 20.23 | 19.32 | 96 | 70-130 | ug/M3 | |
| 1,1-Dichloroethene | 19.82 | 19.75 | 100 | 70-130 | ug/M3 | |
| cis-1,2-Dichloroethene | 19.82 | 20.37 | 103 | 70-130 | ug/M3 | |
| trans-1,2-dichloroethene | 19.82 | 19.79 | 100 | 70-130 | ug/M3 | |
| 1,2-Dichloropropane | 23.10 | 22.40 | 97 | 70-130 | ug/M3 | |
| cis-1,3-Dichloropropene | 22.68 | 23.89 | 105 | 70-130 | ug/M3 | |
| trans-1,3-dichloropropene | 22.68 | 23.53 | 104 | 70-130 | ug/M3 | |
| 1,2-Dichlorotetrafluoroethane | 34.94 | 33.51 | 96 | 70-130 | ug/M3 | |
| 1,4-Dioxane (P-Dioxane) | 18.01 | 19.14 | 106 | 70-130 | ug/M3 | |
| Ethyl Acetate | 18.01 | 19.17 | 106 | 70-130 | ug/M3 | |
| Ethylbenzene | 21.70 | 23.79 | 110 | 70-130 | ug/M3 | |
| 4-Ethyltoluene | 24.57 | 26.79 | 109 | 70-130 | ug/M3 | |
| n-Heptane | 20.48 | 22.37 | 109 | 70-130 | ug/M3 | |
| Hexachlorobutadiene | 53.30 | 47.13 | 88 | 70-130 | ug/M3 | |
| n-Hexane | 17.61 | 18.94 | 108 | 70-130 | ug/M3 | |
| 2-Hexanone (MBK) | 20.47 | 21.03 | 103 | 70-130 | ug/M3 | |
| Isopropylbenzene | 24.57 | 25.34 | 103 | 70-130 | ug/M3 | |
| Methylene Chloride | 17.36 | 16.17 | 93 | 70-130 | ug/M3 | |
| 4-Methyl-2-Pentanone (MIBK) | 20.47 | 21.14 | 103 | 70-130 | ug/M3 | |
| Methyl-t-Butyl Ether | 18.02 | 19.55 | 108 | 70-130 | ug/M3 | |
| Naphthalene | 26.20 | 21.32 | 81 | 70-130 | ug/M3 | |
| Propylene | 8.602 | 8.112 | 94 | 70-130 | ug/M3 | |
| n-Propylbenzene | 24.57 | 26.87 | 109 | 70-130 | ug/M3 | |
| Styrene | 21.29 | 24.28 | 114 | 70-130 | ug/M3 | |
| 1,1,2,2-Tetrachloroethane | 34.31 | 32.86 | 96 | 70-130 | ug/M3 | |
| Tetrachloroethene | 33.90 | 34.26 | 101 | 70-130 | ug/M3 | |
| Tetrahydrofuran | 14.74 | 15.47 | 105 | 70-130 | ug/M3 | |
| Toluene | 18.83 | 20.13 | 107 | 70-130 | ug/M3 | |

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# QC Summary

Project Name ACPS IAQ Testing
PSS Project No.: 21090116

**Analytical Method: EPA TO-15**

Seq Number: 185968 Matrix: Air
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/15/21 13:32

| Parameter | Spike Amount | ICV Result | ICV %Rec | Limits | Units | Flag |
|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 37.09 | 33.48 | 90 | 70-130 | ug/M3 | |
| 1,1,1-Trichloroethane | 27.27 | 26.75 | 98 | 70-130 | ug/M3 | |
| 1,1,2-Trichloroethane | 27.27 | 26.47 | 97 | 70-130 | ug/M3 | |
| Trichloroethene | 26.86 | 26.83 | 100 | 70-130 | ug/M3 | |
| Trichlorofluoromethane | 28.08 | 26.66 | 95 | 70-130 | ug/M3 | |
| 1,1,2-Trichlorotrifluoroethane | 38.31 | 37.18 | 97 | 70-130 | ug/M3 | |
| 1,2,4-Trimethylbenzene | 24.57 | 27.23 | 111 | 70-130 | ug/M3 | |
| 1,3,5-Trimethylbenzene | 24.57 | 26.05 | 106 | 70-130 | ug/M3 | |
| 2,2,4-Trimethylpentane | 23.35 | 23.79 | 102 | 70-130 | ug/M3 | |
| Vinyl acetate | 17.60 | 18.06 | 103 | 70-130 | ug/M3 | |
| Bromoethene | 21.86 | 21.66 | 99 | 70-130 | ug/M3 | |
| Vinyl chloride | 12.78 | 12.23 | 96 | 70-130 | ug/M3 | |
| m&p-Xylene | 43.41 | 46.74 | 108 | 70-130 | ug/M3 | |
| o-Xylene | 21.70 | 23.49 | 108 | 70-130 | ug/M3 | |

| Surrogate | ICV Result | Limits | Units | Flag |
|---|---|---|---|---|
| 4-Bromofluorobenzene | 103 | 50-150 | % | |

X = Recovery outside of QC Criteria

# SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM TO-15

## PHASE SEPARATION SCIENCE, INC.

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(1)
*CLIENT: Total Environmental Concepts, Inc. *OFFICE LOC.: Lorton
*PROJECT MGR: Karl Ford
EMAIL: kford@teci.pro *PHONE NO: (703) 567-4346
*PROJECT NAME: ACPS IAQ testing PROJECT NO.: 4920002
SITE LOCATION: Charles Barrett School P.O. NO.:
SAMPLER(S):

PSS Work Order #: 21090116

PAGE 1 OF 2

(2)

| LAB # | *SAMPLE IDENTIFICATION | *DATE START | *Time Start (24hr clock) | *DATE STOP | *Time Stop (24hr clock) | * (3) Can ID * | Sample Reg. ID * | Canister Pressure * in field ("Hg) Start | Canister Pressure * in field ("Hg) Stop | Incoming Canister Pressure ("Hg) Lab | Soil Gas / Subslab * | Indoor/Ambient Air * | TO-15 Full List | Special List | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CB- Cafe | 8/30/21 | 16:52 | 8/30/21 | 21:44 | 3531 | 11060 | 30 | 0 | 0 | | | ✓ | | |
| 2 | CB - Class 102 | 8/30/21 | 16:59 | 8/30/21 | 21:56 | 4251 | 10948 | 29 | 0 | 6 | | | ✓ | | |
| 3 | CB - Hall 107 | 8/30/21 | 17:03 | 8/30/21 | 22:01 | 3528 | 6170 | 30 | 0 | 0 | | | ✓ | | |
| 4 | CB - Office | 8/30/21 | 17:07 | 8/30/21 | 22:06 | 4313 | 12327 | 30 | 0 | 6 | | | ✓ | | |
| 5 | CB - Lobby | 8/30/21 | 17:11 | 8/30/21 | 22:12 | 4310 | 5675 | 30 | 0 | 0 | | | ✓ | | |
| 6 | CB - Auditorium | 8/30/21 | 17:15 | 8/30/21 | 22:08 | 11197 | 12323 | 30 | 2.0 | 3 | | | ✓ | | |
| 7 | CB - Hall 212 | 8/30/21 | 17:28 | 8/30/21 | 21:18 | 4265 | 11059 | 29 | 5.0 | 4 | | | ✓ | | |
| 8 | CB - Class 216 | 8/30/21 | 17:31 | 8/30/21 | 21:20 | 3564 | 5676 | 30 | 5.0 | 5 | | | ✓ | | |
| 9 | CB - Library | 8/30/21 | 17:34 | 8/30/21 | 21:28 | 4246 | 11062 | 30 | 5.0 | 3 | | | ✓ | | |
| 10 | CB - Class 226 | 8/30/21 | 17:37 | 8/30/21 | 21:31 | 4319 | 3160 | 31 | 3.0 | 3 | | | ✓ | | |

(5)

| Relinquished By: | Date | Time | Received By: |
|---|---|---|---|
| (1) Thomas Jacobs | 8/30/21 | 17:39 | Derrick Johnson |
| (2) Derrick Johnson | 9/1/21 | 2:19 | |
| (3) | | | |
| (4) | | | |

(4) *Requested TAT (One TAT per COC)
☑ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

Shipping Carrier: Client

Data Deliverables Required:

Special Instructions:

# SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM TO-15

## PHASE SEPARATION SCIENCE, INC.

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(1)
*CLIENT: Total Environmental Concepts, Inc. *OFFICE LOC.: Lorton
*PROJECT MGR: Karl Ford
EMAIL: kford@teci.pro *PHONE NO: (703) 567-4346
*PROJECT NAME: ACPS IAQ testing PROJECT NO.: 4920002
SITE LOCATION: Charles Barrett School P.O. NO.:
SAMPLER(S):

PSS Work Order #: 21090116
PAGE 2 OF 2

(2)

| LAB # | *SAMPLE IDENTIFICATION | *DATE START | *Time Start (24hr clock) | *DATE STOP | *Time Stop (24hr clock) | * (3) Can ID * | Sample Reg. ID * | Canister Pressure * in field ("Hg) Start | Canister Pressure * in field ("Hg) Stop | Incoming Canister Pressure ("Hg) Lab | Soil Gas / Subslab * | Indoor/Ambient Air * | TO-15 Full List | Special List | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | CB - Gym | 8/30/21 | 17:40 | 8/30/21 | 21:38 | 4315 | 3215 | 31 | 3.0 | 4 | | | ✓ | | |
| 12 | CB - Room 316 | 8/30/21 | 16:54 | 8/30/21 | 21:00 | 3519 | 13651 | 31 | 7.0 | 7 | | | ✓ | | |
| 13 | CB - Room 307 | 8/30/21 | 17:08 | 8/30/21 | 20:53 | 426 | 12322 | 30 | 8.0 | 8 | | | ✓ | | |
| 14 | CB - Stair 301 | 8/30/21 | 17:10 | 8/30/21 | 20:36 | 425 | 10946 | 31 | 7.0 | 7 | | | ✓ | | |
| 15 | CB - Outdoor | 8/30/21 | 17:46 | 8/30/21 | 22:29 | 4311 | 10947 | 30 | 0 | 2 | | | ✓ | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

(5)

| Relinquished By: | Date | Time | Received By: |
|---|---|---|---|
| (1) Channing Lucas | 8/30/21 | 17:39 | Derrick Johnson |
| (2) Derrick Johnson | 9/1/21 | 2:19 | |
| (3) | | | |
| (4) | | | |

(4) *Requested TAT (One TAT per COC)
☑ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

Shipping Carrier: Client

Data Deliverables Required:

Special Instructions:

# TO-15 Canister and Flow Controller Check List

| Check Out | Check In | (use n/a as necessary) |
|---|---|---|
| 15 | ☐ | **No. Canisters:** 15 |
| ☐ | | Pressure Checked (29 – 30" Hg) |
| ☐ | | Top of Micro QT tight |
| ☐ | | Sampling tag/label |
| ☐ | ☐ | Stands |
| ☐ | ☐ | **No. Flow controllers:** 15 |
| | ☐ | Use COC pressures to evaluate sampling time accuracy |
| ☐ | ☐ | Leak evaluated |
| ☐ | | Gauge checked / adjusted (29 – 30" Hg) |
| ☐ | | Flow set |
| ☐ | | Purged with N |
| | ☐ | *Checked for water if soil gas |
| ☐ | ☐ | Duplicate T-piece(s) |
| | | **Other items in bin:** |
| ☐ | | Hard Copy of O-01.05.F01 TO-15 Client Sampling Guide |
| ☐ | | COC Form(s) (+1 extra) |
| ☐ | | Client copy of bottle order |
| ☐ | | STOP Notice if split IA/SG order |
| ☐ | ☐ | Soil Gas? wrench/nuts/ferules Qty____ |
| ☐ | | Tubing? purged/capped: ft_____ |
| ☐ | ☐ | Tubing cutter |
| ☐ | | Bin labelled, copy of BO for receiving |
| ☒ | ☆ | Client survey response card |
| | | **Vapor Pins – indicate type: barbed/compression** |
| ☐ | ☐ | Vapor Pins with sleeves: Qty_____ |
| ☐ | ☐ | Tygon pieces/FLX Fittings: Qty_____ |
| ☐ | ☐ | Installation tool |
| ☐ | ☐ | Deadblow hammer |
| ☐ | ☐ | Hole Brush |
| ☐ | | **Additional Items (see form F06)** |

**Check Out**

BO#/Client: 14315 / TEC

Assembled/Checked Out: Date/Initials 8/30/21 ~~EC~~

Serial #s Entered in LIMS: Date/Initials AM 8/30/21

Verified: Date/Initials AM 8/30/21

**Check In**

Sample Receipt Checklist: Date/Initials: 9/1/21 TW

Work Order No.: 21090116

Checked In: Date/Initials _____

Notes ~~We are out of Client~~ AM 8/30/21 ~~survey response cards.~~

Indoor Air / soil gas not indicated on COC; samples are ~~soil~~ indoor air. AM 9/1/21

Can ID for 013 listed as 426; received 4264.

Can ID for 014 listed as 425; received 4254.

**Sample Receipt Checklist (Y/N): To be completed during login**

| | |
|---|---|
| N AM 9/1/21 | ☒ *All sample fields completed and accurate: Sample ID; Start/Stop Dates/Times; Canister ID (S/N); Flow Controller ID (S/N); Field Start and Stop Pressures; Soil Gas/Indoor Air. |
| Y | ☐ *Sampling times documented in 24 hour clock or am/pm or else verified. |
| Y | ☐ *Incoming lab pressure w/in 5" of field stop pressure and < 10" Hg for indoor air and <15" Hg for soil gas. |

***These sample check in criteria must be met or the nonconformance must be documented in the Sampling & Login case narrative field of the work order in LIMS and communicated to the PSS project manager for client notification.**

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# Sample Receipt Checklist

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

**Client Name** Total Environmental Concepts - Lorto
**Disposal Date** 10/06/2021

**Received By** Thomas Wingate
**Date Received** 09/01/2021 02:19:00 PM
**Delivered By** Client
**Tracking No** Not Applicable
**Logged In By** Thomas Wingate

**Shipping Container(s)**
No. of Coolers 0

Ice N/A
Custody Seal(s) Intact? N/A
Temp (deg C)
Seal(s) Signed / Dated? N/A
Temp Blank Present No

**Documentation**
Sampler Name Not Provided
N/A
COC agrees with sample labels? Yes
Chain of Custody Yes

**Sample Container**
Custody Seal(s) Intact? Not Applicable
Appropriate for Specified Analysis? Yes
Seal(s) Signed / Dated Not Applicable
Intact? Yes
Labeled and Labels Legible? Yes

**Holding Time**
Total No. of Samples Received 15
All Samples Received Within Holding Time(s)? Yes
Total No. of Containers Received 15

**Preservation**

| | | |
|---|---|---|
| Total Metals | (pH<2) | N/A |
| Dissolved Metals, filtered within 15 minutes of collection | (pH<2) | N/A |
| Orthophosphorus, filtered within 15 minutes of collection | | N/A |
| Cyanides | (pH>12) | N/A |
| Sulfide | (pH>9) | N/A |
| TOC, DOC (field filtered), COD, Phenols | (pH<2) | N/A |
| TOX, TKN, NH3, Total Phos | (pH<2) | N/A |
| VOC, BTEX (VOA Vials Rcvd Preserved) | (pH<2) | N/A |
| Do VOA vials have zero headspace? | | N/A |
| 624 VOC (Rcvd at least one unpreserved VOA vial) | | N/A |
| 524 VOC (Rcvd with trip blanks) | (pH<2) | N/A |

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# Sample Receipt Checklist

Project Name: ACPS IAQ Testing
PSS Project No.: 21090116

| | | | |
|---|---|---|---|
| **Client Name** | Total Environmental Concepts - Lorto | **Received By** | Thomas Wingate |
| **Disposal Date** | 10/06/2021 | **Date Received** | 09/01/2021 02:19:00 PM |
| | | **Delivered By** | Client |
| | | **Tracking No** | Not Applicable |
| | | **Logged In By** | Thomas Wingate |

## Comments: (Any "No" response must be detailed in the comments section below.)

**For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.**

Soil gas/indoor air not indicated on COC; samples are indoor air.
Can ID on COC for 013 is 426; received canister 4264.
Can ID on COC for 014 is 425; received canister 4254.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 09/01/2021

PM Review and Approval: Amber Confer Date: 09/01/2021

# SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM TO-15


## PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com


(1)

*CLIENT: Total Environmental Concepts, Inc. *OFFICE LOC.: Lorton

*PROJECT MGR: Karl Ford

EMAIL: kford@teci.pro *PHONE NO: (703) 567-4346

*PROJECT NAME: ACPS IAQ testing PROJECT NO.: 4920002

SITE LOCATION: Charles Barrett School P.O. NO.:

SAMPLER(S):

PSS Work Order #:

PAGE 1 OF 2

(2)

| LAB # | *SAMPLE IDENTIFICATION | *DATE START | *Time Start (24hr clock) | *DATE STOP | *Time Stop (24hr clock) | * (3) Can ID * | Sample Reg. ID * | Canister Pressure * in field ("Hg) Start | Canister Pressure * in field ("Hg) Stop | Incoming Canister Pressure ("Hg) Lab | Soil Gas / Subslab * | Indoor/Ambient Air * | TO-15 Full List | Special List | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CB- Cafe | 8/30/21 | 16:52 | 8/30/21 | 21:44 | 3531 | 11060 | 30 | 0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Class 102 | 8/30/21 | 16:59 | 8/30/21 | 21:56 | 4251 | 10948 | 29 | 0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Hall 107 | 8/30/21 | 17:03 | 8/30/21 | 22:01 | 3528 | 6170 | 30 | 0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Office | 8/30/21 | 17:07 | 8/30/21 | 22:06 | 4313 | 12327 | 30 | 0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Lobby | 8/30/21 | 17:11 | 8/30/21 | 22:12 | 4310 | 5675 | 30 | 0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Auditorium | 8/30/21 | 17:15 | 8/30/21 | 22:08 | 11197 | 12323 | 30 | 2.0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Hall 212 | 8/30/21 | 17:28 | 8/30/21 | 21:18 | 4265 | 11059 | 29 | 5.0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Class 216 | 8/30/21 | 17:31 | 8/30/21 | 21:20 | 3564 | 5676 | 30 | 5.0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Library | 8/30/21 | 17:34 | 8/30/21 | 21:28 | 4246 | 11062 | 30 | 5.0 | | ☐ | ☐ | ☑ | ☐ | |
| | CB - Class 226 | 8/30/21 | 17:37 | 8/30/21 | 21:31 | 4319 | 3160 | 31 | 3.0 | | ☐ | ☐ | ☑ | ☐ | |

(5)

| Relinquished By: | Date | Time | Received By: |
|---|---|---|---|
| (1) | | | |
| (2) | | | |
| (3) | | | |
| (4) | | | |

(4) *Requested TAT (One TAT per COC)

☑ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

Shipping Carrier:

**Data Deliverables Required:**

**Special Instructions:**


6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

# SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM TO-15


## PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com

email: info@phaseonline.com


(1)

*CLIENT: Total Environmental Concepts, Inc. *OFFICE LOC.: Lorton

*PROJECT MGR: Karl Ford

EMAIL: kford@teci.pro *PHONE NO: (703) 567-4346

*PROJECT NAME: ACPS IAQ testing PROJECT NO.: 4920002

SITE LOCATION: Charles Barrett School P.O. NO.:

SAMPLER(S):

PSS Work Order #:

PAGE 1 OF 2

(2)

| LAB # | *SAMPLE IDENTIFICATION | *DATE START | *Time Start (24hr clock) | *DATE STOP | *Time Stop (24hr clock) | * (3) Can ID * | Sample Reg. ID * | Canister Pressure * in field ("Hg) Start | Canister Pressure * in field ("Hg) Stop | Incoming Canister Pressure ("Hg) Lab | Soil Gas / Subslab * | Indoor/Ambient Air * | TO-15 Full List | Special List | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CB- Cafe | 8/30/21 | 16:52 | 8/30/21 | 21:44 | 3531 | 11060 | 30 | 0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Class 102 | 8/30/21 | 16:59 | 8/30/21 | 21:56 | 4251 | 10948 | 29 | 0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Hall 107 | 8/30/21 | 17:03 | 8/30/21 | 22:01 | 3528 | 6170 | 30 | 0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Office | 8/30/21 | 17:07 | 8/30/21 | 22:06 | 4313 | 12327 | 30 | 0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Lobby | 8/30/21 | 17:11 | 8/30/21 | 22:12 | 4310 | 5675 | 30 | 0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Auditorium | 8/30/21 | 17:15 | 8/30/21 | 22:08 | 11197 | 12323 | 30 | 2.0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Hall 212 | 8/30/21 | 17:28 | 8/30/21 | 21:18 | 4265 | 11059 | 29 | 5.0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Class 216 | 8/30/21 | 17:31 | 8/30/21 | 21:20 | 3564 | 5676 | 30 | 5.0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Library | 8/30/21 | 17:34 | 8/30/21 | 21:28 | 4246 | 11062 | 30 | 5.0 | | ☐ | ☐ | ✔ | ☐ | |
| | CB - Class 226 | 8/30/21 | 17:37 | 8/30/21 | 21:31 | 4319 | 3160 | 31 | 3.0 | | ☐ | ☐ | ✔ | ☐ | |

(5)

| | | | |
|---|---|---|---|
| Relinquished By: (1) | Date | Time | Received By: |
| Relinquished By: (2) | Date | Time | Received By: |
| Relinquished By: (3) | Date | Time | Received By: |
| Relinquished By: (4) | Date | Time | Received By: |

(4) *Requested TAT (One TAT per COC)

☑ 5-Day ☐ 3-Day ☐ 2-Day

☐ Next Day ☐ Emergency ☐ Other

Shipping Carrier:

**Data Deliverables Required:**

**Special Instructions:**


6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

**Appendix D:** Formaldehyde Analytical Results

PHASE SEPARATION SCIENCE

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410-747-8770
800-932-9047
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# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090301

September 15, 2021

**Karl Ford**
**Total Environmental Concepts - Lorton**
8382 Terminal Road, Suite B
Lorton, VA 22079

Reference: PSS Project No: **21090301**
Project Name: ACPS IAQ Testing
Project Location: Charles Berrett
Project ID.: 4920002

Dear Karl Ford:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21090301**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 7, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

**Dan Prucnal**
Laboratory Manager

PHASE SEPARATION SCIENCE

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Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

# Explanation of Qualifiers

Project Name: ACPS IAQ Testing

PSS Project No.: 21090301

## Project ID: 4920002

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/02/2021 at 05:15 pm

| PSS Sample ID | Sample ID | Matrix | Date/Time Collected |
|---|---|---|---|
| 21090301-001 | CB-Cafe | AIR | 08/30/21 00:00 |
| 21090301-002 | CB-Class 102 | AIR | 08/30/21 00:00 |
| 21090301-003 | CB-Hall 107 | AIR | 08/30/21 00:00 |
| 21090301-004 | CB-Office | AIR | 08/30/21 00:00 |
| 21090301-005 | CB-Lobby | AIR | 08/30/21 00:00 |
| 21090301-006 | CB-Auditorium | AIR | 08/30/21 00:00 |
| 21090301-007 | CB-Hall 212 | AIR | 08/30/21 00:00 |
| 21090301-008 | CB-Class 216 | AIR | 08/30/21 00:00 |
| 21090301-009 | CB-Library | AIR | 08/30/21 00:00 |
| 21090301-010 | CB-Class 226 | AIR | 08/30/21 00:00 |
| 21090301-011 | CB-Gym | AIR | 08/30/21 00:00 |
| 21090301-012 | CB-Hall 316 | AIR | 08/30/21 00:00 |
| 21090301-013 | CB-Class 307 | AIR | 08/30/21 00:00 |
| 21090301-014 | CB-Stair 301 | AIR | 08/30/21 00:00 |
| 21090301-015 | CB-Outdoor | AIR | 08/30/21 00:00 |

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

PHASE SEPARATION SCIENCE

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# Explanation of Qualifiers

Project Name: ACPS IAQ Testing

PSS Project No.: 21090301

**Standard Flags/Abbreviations:**

| | |
|---|---|
| B | A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination. |
| C | Results Pending Final Confirmation. |
| E | The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated. |
| Fail | The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1. |
| J | The target analyte was positively identified below the reporting limit but greater than the MDL. |
| MDL | This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. |
| ND | Not Detected at or above the reporting limit. |
| RL | PSS Reporting Limit. |
| U | Not detected. |

**Certifications:**

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

SGS GALSON

Ms. Amber Confer
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228

September 15, 2021

Account# 15354

Login# L545985

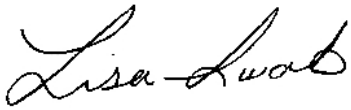
Dear Amber Confer:

Enclosed are the analytical results for the samples received by our laboratory on September 08, 2021. 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 Swab
Laboratory Director

Enclosure(s)

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- This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx. 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 www.sgsgalson.com.
- 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 http://www.sgsgalson.com 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, 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 GALSON

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

Client : Phase Separation Science, Inc. Account No.: 15354
Site : CHARLES BARRETT Login No. : L545985
Project No. : ACPS IAQ TESTING-4920002
Date Sampled : 30-AUG-21 Date Analyzed : 14-SEP-21
Date Received : 08-SEP-21 Report ID : 1264792

**Formaldehyde**

| Sample ID | Lab ID | Time minutes | Total ug | Conc mg/m3 | ppm |
|---|---|---|---|---|---|
| CB-CAFE | L545985-1 | 292 | <0.4 | <0.01 | <0.009 |
| CB-CLASS 102 | L545985-2 | 297 | <0.4 | <0.01 | <0.009 |
| CB-HALL 107 | L545985-3 | 298 | <0.4 | <0.01 | <0.009 |
| CB-OFFICE | L545985-4 | 299 | <0.4 | <0.01 | <0.009 |
| CB-LOBBY | L545985-5 | 301 | <0.4 | <0.01 | <0.009 |
| CB-AUDITORIUM | L545985-6 | 293 | <0.4 | <0.01 | <0.009 |
| CB-HALL 212 | L545985-7 | 230 | <0.4 | <0.01 | <0.01 |
| CB-CLASS 216 | L545985-8 | 229 | <0.4 | <0.01 | <0.01 |
| CB-LIBRARY | L545985-9 | 234 | <0.4 | <0.01 | <0.01 |
| CB-CLASS 226 | L545985-10 | 234 | <0.4 | <0.01 | <0.01 |
| CB-GYM | L545985-11 | 238 | <0.4 | <0.01 | <0.01 |
| CB-HALL 316 | L545985-12 | 246 | <0.4 | <0.01 | <0.01 |
| CB-CLASS 307 | L545985-13 | 225 | <0.4 | <0.01 | <0.01 |
| CB-STAIR 301 | L545985-14 | 206 | <0.4 | <0.02 | <0.01 |
| CB-OUTDOOR | L545985-15 | 283 | <0.4 | <0.01 | <0.01 |

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of Quantitation: 0.4 ug
Analytical Method : mod. OSHA 1007; HPLC/UV
Collection Media : Assay 581

Submitted by: JLL
Date : 15-SEP-21
Supervisor : MWJ

Approved by: NKP

GALSON

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

Client Name : Phase Separation Science, Inc.
Site : CHARLES BARRETT
Project No. : ACPS IAQ TESTING-4920002

Date Sampled : 30-AUG-21 Account No.: 15354
Date Received: 08-SEP-21 Login No. : L545985
Date Analyzed: 14-SEP-21

---

L545985 (Report ID: 1264792):
Total ug corrected for a desorption efficiency of 96%.
FORMALDEHYDE results have been corrected for the average background found on the media:
0.1178 ug for lot #4B21 (samples 1-15).
SOPs: LC-SOP-4(23)

L545985 (Report ID: 1264792):
Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

| Parameter | Accuracy | Mean Recovery |
|---|---|---|
| Formaldehyde | +/-12.1% | 95.3% |

1Z2313E40165585972
Date:09/08/21
Shipper:UPS
Initials:BGF

Prep:UNKNOWN

L545985

21090301

N

☐ New Client? Report To*: Phase Separation Science
6630 Baltimore National Pike
Baltimore, MD 21228

Client Account No.*:

Invoice To*: Phase Separation Science

6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)

www.sgsgalson.com

83-84

Phone No.*: 410-747-8770
Cell No.:
Email Results to: Amber Confer
Email address: reporting@phaseonline.com

Phone No.: 410-747-8770
Email: invoicing@phaseonline.com
P.O. No.: ODC 4920002-001
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

AJB

| Need Results By: | (surcharge) |
|---|---|
| ☑ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name: Charles Barrett Project: ACPS IAQ testing - 4920002 Sampled by: Karl Ford

Comments:
Dosimeter cartrige # noted in the (Hexavelent Chromium Process) colum

List description of industry or Process/interferences present in sampling area:
Public grade school building

State samples were collected in (e.g., NY)
VA

Please indicate which OEL this data will be used for:
☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA
☐ MSHA ☐ Other (specify):

| Sample Identification* (Maximum of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - Cafe | 08/30/21 | Assay N581 Aldehyde Badge | 292 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5226 |
| CB - Class 102 | 08/30/21 | Assay N581 Aldehyde Badge | 297 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5210 |
| CB - Hall 107 | 08/30/21 | Assay N581 Aldehyde Badge | 298 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5603 |
| CB - Office | 08/30/21 | Assay N581 Aldehyde Badge | 299 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5162 |
| CB - Lobby | 08/30/21 | Assay N581 Aldehyde Badge | 301 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5148 |
| CB - Auditorium | 08/30/21 | Assay N581 Aldehyde Badge | 293 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5554 |
| CB - Hall 212 | 08/30/21 | Assay N581 Aldehyde Badge | 230 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4233 |
| CB - Class 216 | 08/30/21 | Assay N581 Aldehyde Badge | 229 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4493 |
| CB - Library | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5457 |
| CB - Class 226 | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4369 |
| CB - Gym | 08/30/21 | Assay N581 Aldehyde Badge | 238 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4494 |

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by: | | 9/2/21 | 11:31 | Received by: | | 9/3/21 | 1715 |
| Relinquished by: | | | | Received by: | Brett Grehert-Fischer | 9/8/21 | 0953 |

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 1 of 2

21090301

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6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)

www.sgsgalson.com

☐ New Client?

Client Account No.*:

Report To*: Phase Separation Science
6630 Baltimore National Pike
Baltimore, MD 21228

Phone No.*: 410-747-8770
Cell No.:
Email Results to: Amber Confer
Email address: reporting@phaseonline.com

Invoice To*: Phase Separation Science

Phone No.: 410-747-8770
Email: invoicing@phaseonline.com
P.O. No.: ODC 4920002-001
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
|---|---|
| ☑ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name: Charles Barrett  Project: ACPS IAQ testing - 4920002  Sampled by: Karl Ford

Comments:
Dosimeter cartrige # noted in the (Hexavelent Chromium Process) colum

List description of industry or Process/interferences present in sampling area:
Public grade school building

State samples were collected in (e.g., NY)
VA

Please indicate which OEL this data will be used for:
☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - ~~Room~~ Hall 316 LJ 9/3/21 | 08/30/21 | Assay N581 Aldehyde Badge | 246 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5475 |
| CB - Room Class 307 | 08/30/21 | Assay N581 Aldehyde Badge | 225 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4966 |
| CB - Stair 301 | 08/30/21 | Assay N581 Aldehyde Badge | 206 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4924 |
| CB - Outdoor | 08/30/21 | Assay N581 Aldehyde Badge | 283 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5576 |
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For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by: | [signature] | 9/2/21 | 11:31 | Received by: | [signature] | 9/3/21 | 1715 |
| Relinquished by: | | | | Received by: | Brett Grenert-Fischer [signature] | 9/8/21 | 0953 |

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Page 2 of 2

# Chain of Custody Form for Subcontracted Analyses



Phase Separation Science, Inc
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

**For Questions or issues please contact: Amber Confer**

W.O. No. : **21090301**
Project Location : Charles Berrett
Project Number : 4920002
**Report To LOD :** No

**Report Due On :09/15/21 05:00**

Samples Transferred To:
SGS North America - NY
6601 Kirkville Road
East Syracuse, NY 13057
Old SGS Galson Labs. bsc
Phone : 315-432-5227

| Lab Sample ID | Field Sample ID | Date Sampled | Time Sampled | Matrix | Analyses Required | Method | Type of Container | Preservative |
|---|---|---|---|---|---|---|---|---|
| 21090301-001 | CB-Cafe | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-002 | CB-Class 102 | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-003 | CB-Hall 107 | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-004 | CB-Office | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-005 | CB-Lobby | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-006 | CB-Auditorium | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-007 | CB-Hall 212 | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-008 | CB-Class 216 | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-009 | CB-Library | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-010 | CB-Class 226 | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-011 | CB-Gym | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-012 | CB-Room 316 | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-013 | CB-Class 307 | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-014 | CB-Stair 301 | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |
| 21090301-015 | CB-Outdoor | 08/30/21 | 00:00 | Air | Formaldehyde (mod. OSHA 1007; HPLC/UV) | VARIOUS | NONSC | NON |

**Data Deliverables Required: COA**

**Perform Q.C. on Sample :** _____

**Send Report Attn :** reporting@phaseonline.com

**Send InvoiceAttn :** invoicing@phaseonline.com

Airbill No.: _____ Carrier : UPS

Condition Upon Receipt : _____

Comments :

Samples Relinquished By : [signature] Date : 9/7/21 Time: _____ Samples Received By : **Brett Grenert-Fischer** Brett Grenert-Fischer 9/8/21 0953

Samples Relinquished By: _____ Date : _____ Time : _____ Samples Received By: _____

Samples Relinquished By: _____ Date: _____ Time: _____ Samples Received By: _____

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: ACPS IAQ Testing

PSS Project No.: 21090301

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

**Sample Receipt:**

All sample receipt conditions were acceptable.

21090301: Analyses associated with analyst code 4051 were performed by
SGS North America - NY, 6601 Kirkville Road, East Syracuse, NY 13057 - NY 11626

**NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.**

21090301

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Baltimore, MD 21228

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Phone No.: 410-747-8770
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P.O. No. : ODC 4920002-001
Credit Card : ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
|---|---|
| ☑ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name : Charles Barrett  Project : ACPS IAQ testing - 4920002  Sampled by : Karl Ford

Comments :
Dosimeter cartrige # noted in the (Hexavelent Chromium Process) colum

List description of industry or Process/interferences present in sampling area :
Public grade school building

State samples were collected in (e.g., NY)
VA

Please indicate which OEL this data will be used for :
☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA
☐ MSHA ☐ Other (specify):

| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - Cafe | 08/30/21 | Assay N581 Aldehyde Badge | 292 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5226 |
| CB - Class 102 | 08/30/21 | Assay N581 Aldehyde Badge | 297 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5210 |
| CB - Hall 107 | 08/30/21 | Assay N581 Aldehyde Badge | 298 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5603 |
| CB - Office | 08/30/21 | Assay N581 Aldehyde Badge | 299 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5162 |
| CB - Lobby | 08/30/21 | Assay N581 Aldehyde Badge | 301 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5148 |
| CB - Auditorium | 08/30/21 | Assay N581 Aldehyde Badge | 293 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5554 |
| CB - Hall 212 | 08/30/21 | Assay N581 Aldehyde Badge | 230 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4233 |
| CB - Class 216 | 08/30/21 | Assay N581 Aldehyde Badge | 229 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4493 |
| CB - Library | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5457 |
| CB - Class 226 | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4369 |
| CB - Gym | 08/30/21 | Assay N581 Aldehyde Badge | 238 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4494 |

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

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For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)* :

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by : | | 9/2/21 | 11:31 | Received by : | | 9/3/21 | 1715 |
| Relinquished by : | | | | Received by : | | | |

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* Required fields, failure to complete these fields may result in a delay in your samples being processed.

21090301

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Baltimore, MD 21228

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Cell No. :
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P.O. No. : ODC 4920002-001
Credit Card : ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
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| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name : Charles Barrett  Project : ACPS IAQ testing - 4920002  Sampled by : Karl Ford

Comments :
Dosimeter cartrige # noted in the (Hexavelent Chromium Process) colum

List description of industry or Process/interferences present in sampling area :
Public grade school building

State samples were collected in (e.g., NY)
VA

Please indicate which OEL this data will be used for :
☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA
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| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
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| CB - ~~Room~~ Class 307 | 08/30/21 | Assay N581 Aldehyde Badge | 225 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4966 |
| CB - Stair 301 | 08/30/21 | Assay N581 Aldehyde Badge | 206 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4924 |
| CB - Outdoor | 08/30/21 | Assay N581 Aldehyde Badge | 283 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5576 |
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| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by : | [signature] | 9/2/21 | 11:31 | Received by : | [signature] | 9/3/21 | 1715 |
| Relinquished by : | | | | Received by : | | | |

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Page 2 of 2

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
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410-747-8770
800-932-9047
www.phaseonline.com

# Sample Receipt Checklist

Project Name: ACPS IAQ Testing
PSS Project No.: 21090301

**Client Name** Total Environmental Concepts - Lorto
**Disposal Date** 10/07/2021

**Received By** Lynn Jackson
**Date Received** 09/02/2021 05:15:00 PM
**Delivered By** Client
**Tracking No** Not Applicable
**Logged In By** Lynn Jackson

**Shipping Container(s)**
No. of Coolers 0

Ice N/A
Custody Seal(s) Intact? N/A
Temp (deg C)
Seal(s) Signed / Dated? N/A
Temp Blank Present No

**Documentation**
Sampler Name Karl Ford
COC agrees with sample labels? Yes
MD DW Cert. No. N/A
Chain of Custody Yes

**Sample Container**
Custody Seal(s) Intact? Not Applicable
Appropriate for Specified Analysis? Yes
Seal(s) Signed / Dated Not Applicable
Intact? Yes
Labeled and Labels Legible? Yes

**Holding Time**
All Samples Received Within Holding Time(s)? Yes
Total No. of Samples Received 15
Total No. of Containers Received 15

**Preservation**

| | | |
|---|---|---|
| Total Metals | (pH<2) | N/A |
| Dissolved Metals, filtered within 15 minutes of collection | (pH<2) | N/A |
| Orthophosphorus, filtered within 15 minutes of collection | | N/A |
| Cyanides | (pH>12) | N/A |
| Sulfide | (pH>9) | N/A |
| TOC, DOC (field filtered), COD, Phenols | (pH<2) | N/A |
| TOX, TKN, NH3, Total Phos | (pH<2) | N/A |
| VOC, BTEX (VOA Vials Rcvd Preserved) | (pH<2) | N/A |
| Do VOA vials have zero headspace? | | N/A |
| 624 VOC (Rcvd at least one unpreserved VOA vial) | | N/A |
| 524 VOC (Rcvd with trip blanks) | (pH<2) | N/A |

## Comments: (Any "No" response must be detailed in the comments section below.)

**For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.**

Samples Inspected/Checklist Completed By: N L Jackson — Date: 09/03/2021
Lynn Jackson

PM Review and Approval: Amber F Confer — Date: 09/07/2021
Amber Confer

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Site Name : Charles Barrett  Project : ACPS IAQ testing - 4920002  Sampled by : Karl Ford

Comments :
Dosimeter cartrige # noted in the (Hexavelent Chromium Process) colum

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State samples were collected in (e.g., NY)
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| CB - Hall 107 | 08/30/21 | Assay N581 Aldehyde Badge | 298 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5603 |
| CB - Office | 08/30/21 | Assay N581 Aldehyde Badge | 299 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5162 |
| CB - Lobby | 08/30/21 | Assay N581 Aldehyde Badge | 301 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5148 |
| CB - Auditorium | 08/30/21 | Assay N581 Aldehyde Badge | 293 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5554 |
| CB - Hall 212 | 08/30/21 | Assay N581 Aldehyde Badge | 230 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4233 |
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| CB - Class 226 | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4369 |
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| Relinquished by : | | | | Received by : | | | |
| Relinquished by : | | | | Received by : | | | |

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| CB - Hall 107 | 08/30/21 | Assay N581 Aldehyde Badge | 298 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5603 |
| CB - Office | 08/30/21 | Assay N581 Aldehyde Badge | 299 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5162 |
| CB - Lobby | 08/30/21 | Assay N581 Aldehyde Badge | 301 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5148 |
| CB - Auditorium | 08/30/21 | Assay N581 Aldehyde Badge | 293 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5554 |
| CB - Hall 212 | 08/30/21 | Assay N581 Aldehyde Badge | 230 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4233 |
| CB - Class 216 | 08/30/21 | Assay N581 Aldehyde Badge | 229 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4493 |
| CB - Library | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5457 |
| CB - Class 226 | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4369 |
| CB - Gym | 08/30/21 | Assay N581 Aldehyde Badge | 238 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4494 |

^Galson Laboratories will subsitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)* :

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by : | | | | Received by : | | | |
| Relinquished by : | | | | Received by : | | | |

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

**Appendix E:** 4-PCH Analytical Results

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

# Certificate of Analysis

Project Name: ACPS IAQ Testing
PSS Project No.: 21090303

September 15, 2021

**Karl Ford**
**Total Environmental Concepts - Lorton**
8382 Terminal Road, Suite B
Lorton, VA 22079

Reference: PSS Project No: **21090303**
Project Name: ACPS IAQ Testing
Project Location: Charles Barrett
Project ID.: 4920002

Dear Karl Ford:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **21090303**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 7, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

**Dan Prucnal**
Laboratory Manager

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

# Explanation of Qualifiers

Project Name: ACPS IAQ Testing

PSS Project No.: 21090303

## Project ID: 4920002

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/02/2021 at 05:15 pm

| PSS Sample ID | Sample ID | Matrix | Date/Time Collected |
|---|---|---|---|
| 21090303-001 | CB-Cafe | AIR | 08/30/21 00:00 |
| 21090303-002 | CB-Class 102 | AIR | 08/30/21 00:00 |
| 21090303-003 | CB-Hall 107 | AIR | 08/30/21 00:00 |
| 21090303-004 | CB-Office | AIR | 08/30/21 00:00 |
| 21090303-005 | CB-Lobby | AIR | 08/30/21 00:00 |
| 21090303-006 | CB-Auditorium | AIR | 08/30/21 00:00 |
| 21090303-007 | CB-Hall 212 | AIR | 08/30/21 00:00 |
| 21090303-008 | CB-Class 216 | AIR | 08/30/21 00:00 |
| 21090303-009 | CB-Library | AIR | 08/30/21 00:00 |
| 21090303-010 | CB-Class 226 | AIR | 08/30/21 00:00 |
| 21090303-011 | CB-Gym | AIR | 08/30/21 00:00 |
| 21090303-012 | CB-Hall 316 | AIR | 08/30/21 00:00 |
| 21090303-013 | CB-Class 307 | AIR | 08/30/21 00:00 |
| 21090303-014 | CB-Stair 301 | AIR | 08/30/21 00:00 |
| 21090303-015 | CB-Outdoor | AIR | 08/30/21 00:00 |

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

# Explanation of Qualifiers

Project Name: ACPS IAQ Testing

PSS Project No.: 21090303

**Standard Flags/Abbreviations:**

| | |
|---|---|
| B | A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination. |
| C | Results Pending Final Confirmation. |
| E | The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated. |
| Fail | The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1. |
| J | The target analyte was positively identified below the reporting limit but greater than the MDL. |
| MDL | This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. |
| ND | Not Detected at or above the reporting limit. |
| RL | PSS Reporting Limit. |
| U | Not detected. |

**Certifications:**

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

SGS GALSON

Ms. Amber Confer
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228

September 15, 2021

Account# 15354

Login# L546049

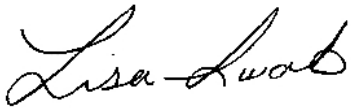
Dear Amber Confer:

Enclosed are the analytical results for the samples received by our laboratory on September 08, 2021. 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 Swab
Laboratory Director

Enclosure(s)

## Terms and Conditions & General Disclaimers

- This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx. 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 www.sgsgalson.com.
- 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 http://www.sgsgalson.com 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, 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 |

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FAX: (315) 437-0571
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LABORATORY ANALYSIS REPORT

Client : Phase Separation Science, Inc. Account No.: 15354
Site : CHARLES BARNETT Login No. : L546049
Project No. : ACPS IAQ TESTING - 4920002
Date Sampled : 30-AUG-21 Date Analyzed : 11-SEP-21 - 12-SEP-21
Date Received : 08-SEP-21 Report ID : 1264752

**4-Phenylcyclohexene (4PCH low LOQ)**

| Sample ID | Lab ID | Air Vol liter | Front ug | Back ug | Total ug | Conc mg/m3 | ppm |
|---|---|---|---|---|---|---|---|
| CB - CAFE | L546049-1 | 58.4 | <0.2 | <0.2 | <0.2 | <0.004 | <0.0005 |
| CB - CLASS 102 | L546049-2 | 59.4 | <0.2 | <0.2 | <0.2 | <0.003 | <0.0005 |
| CB - HALL 107 | L546049-3 | 59.6 | <0.2 | <0.2 | <0.2 | <0.003 | <0.0005 |
| CB - OFFICE | L546049-4 | 59.8 | <0.2 | <0.2 | <0.2 | <0.003 | <0.0005 |
| CB - LOBBY | L546049-5 | 60.2 | <0.2 | <0.2 | <0.2 | <0.003 | <0.0005 |
| CB - AUDITORIUM | L546049-6 | 58.6 | <0.2 | <0.2 | <0.2 | <0.004 | <0.0005 |
| CB - HALL 212 | L546049-7 | 46 | <0.2 | <0.2 | <0.2 | <0.004 | <0.0007 |
| CB - CLASS 216 | L546049-8 | 45.8 | <0.2 | <0.2 | <0.2 | <0.005 | <0.0007 |
| CB - LIBRARY | L546049-9 | 46.8 | <0.2 | <0.2 | <0.2 | <0.004 | <0.0007 |
| CB - CLASS 226 | L546049-10 | 46.8 | <0.2 | <0.2 | <0.2 | <0.004 | <0.0007 |
| CB - GYM | L546049-11 | 47.6 | <0.2 | <0.2 | <0.2 | <0.004 | <0.0007 |
| CB - HALL 316 | L546049-12 | 49.2 | <0.2 | <0.2 | <0.2 | <0.004 | <0.0006 |
| CB - CLASS 307 | L546049-13 | 45 | <0.2 | <0.2 | <0.2 | <0.005 | <0.0007 |
| CB - STAIR 301 | L546049-14 | 41.2 | <0.2 | <0.2 | <0.2 | <0.005 | <0.0008 |
| CB - OUTDOOR | L546049-15 | 56.6 | <0.2 | <0.2 | <0.2 | <0.004 | <0.0006 |

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of Quantitation: 0.2 ug
Analytical Method : mod. NIOSH 1501; GC/PID
Collection Media : 226-01

Submitted by: ECB
Date : 15-SEP-21
Supervisor : KAG

Approved by: NKP

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East Syracuse, NY 13057
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FAX: (315) 437-0571
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LABORATORY FOOTNOTE REPORT

Client Name : Phase Separation Science, Inc.
Site : CHARLES BARNETT
Project No. : ACPS IAQ TESTING - 4920002

Date Sampled : 30-AUG-21 Account No.: 15354
Date Received: 08-SEP-21 Login No. : L546049
Date Analyzed: 11-SEP-21 - 12-SEP-21

---

L546049 (Report ID: 1264752):
Total ug corrected for a desorption efficiency of 97%.
SOPs: GC-SOP-16(26), GC-SOP-8(27), GC-SOP-12(20)

L546049 (Report ID: 1264752):
Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

| Parameter | Accuracy | Mean Recovery |
|---|---|---|
| 4-Phenylcyclohexene (4PCH low LOQ) | +/-18% | 88.2% |

1Z2313E40165585972
Date:09/08/21
Shipper:UPS
Initials:BGF

Prep:UNKNOWN

L5460049

21090303

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East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)

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91

☐ New Client? Client Account No.*:

Report To*: Phase Separation Science
6630 Baltimore National Pike
Baltimore, MD 21228

Phone No.*: 410-747-8770
Cell No.:
Email Results to: Amber Confer
Email address: reporting@phaseonline.com

Invoice To*: Phase Separation Science

Phone No.: 410-747-8770
Email: invoicing@phaseonline.com
P.O. No.: ODC 4920002-001
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
|---|---|
| ☑ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name: Charles Barrett  Project: ACPS IAQ testing - 4920002  Sampled by: Karl Ford

Comments:

List description of industry or Process/interferences present in sampling area:
Public grade school 911 NG BGF 9/8/21

State samples were collected in (e.g., NY): VA

Please indicate which OEL this data will be used for:
☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA
☐ MSHA ☐ Other (specify):

| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - Cafe | 08/30/21 | Sm Charcoal tubes / 226-01 | 58.4 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Class 102 | 08/30/21 | Sm Charcoal tubes / 226-01 | 59.4 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Hall 107 | 08/30/21 | Sm Charcoal tubes / 226-01 | 59.6 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Office | 08/30/21 | Sm Charcoal tubes / 226-01 | 59.8 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Lobby | 08/30/21 | Sm Charcoal tubes / 226-01 | 60.2 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Auditorium | 08/30/21 | Sm Charcoal tubes / 226-01 | 58.6 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Hall 212 | 08/30/21 | Sm Charcoal tubes / 226-01 | 46 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Class 216 | 08/30/21 | Sm Charcoal tubes / 226-01 | 45.8 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Library | 08/30/21 | Sm Charcoal tubes / 226-01 | 46.8 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Class 226 | 08/30/21 | Sm Charcoal tubes / 226-01 | 46.8 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Gym | 08/30/21 | Sm Charcoal tubes / 226-01 | 47.6 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |

^Galson Laboratories will subsitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by: | | 9/2/21 | 11:30 | Received by: | | 9/2/21 | 1715 |
| Relinquished by: | | | | Received by: | Brett Greuert-Fischer | 9/8/21 | 0953 |

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 1 of 2

21090303

**SGS GALSON**

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East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)

www.sgsgalson.com

☐ New Client? Client Account No.*:

Report To* : Phase Separation Science
6630 Baltimore National Pike
Baltimore, MD 21228

Phone No.* : 410-747-8770
Cell No. :
Email Results to : Amber Confer
Email address: reporting@phaseonline.com

Invoice To* : Phase Separation Science

Phone No.: 410-747-8770
Email : invoicing@phaseonline.com
P.O. No. : ODC 4920002-001
Credit Card : ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
|---|---|
| ☑ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name : Charles Barrett  Project : ACPS IAQ testing - 4920002  Sampled by : Karl Ford

Comments :

List description of industry or Process/interferences present in sampling area : Public grade school

State samples were collected in (e.g., NY) VA

Please indicate which OEL this data will be used for : ☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - ~~Room~~ Hall 316 LJ 9/3/21 | 08/30/21 | Sm Charcoal tubes / 226-01 | 49.2 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - ~~Room~~ Class 307 | 08/30/21 | Sm Charcoal tubes / 226-01 | 45.0 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Stair 301 | 08/30/21 | Sm Charcoal tubes / 226-01 | 41.2 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Outdoor | 08/30/21 | Sm Charcoal tubes / 226-01 | 56.6 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| | | | | | | | |
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| | | | | | | | |

^Galson Laboratories will subsitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)* :

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by : | | 9/2/21 | 11:30 | Received by : | | 9/2/21 | 1715 |
| Relinquished by : | | | | Received by : | Brett Grenert-Fischer | 9/10/21 | 0953 |

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 2 of 2

# Chain of Custody Form for Subcontracted Analyses



Phase Separation Science, Inc
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

**For Questions or issues please contact: Amber Confer**

W.O. No. : **21090303**
Project Location : Charles Barrett
Project Number : 4920002
**Report To LOD :** No

**Report Due On :09/15/21 05:00**

Samples Transferred To:
SGS North America - NY
6601 Kirkville Road
East Syracuse, NY 13057
Old SGS Galson Labs. bsc
Phone : 315-432-5227

| Lab Sample ID | Field Sample ID | Date Sampled | Time Sampled | Matrix | Analyses Required | Method | Type of Container | Preservative |
|---|---|---|---|---|---|---|---|---|
| 21090303-001 | CB-Cafe | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-002 | CB-Class 102 | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-003 | CB-Hall 107 | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-004 | CB-Office | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-005 | CB-Lobby | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-006 | CB-Auditorium | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-007 | CB-Hall 212 | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-008 | CB-Class 216 | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-009 | CB-Library | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-010 | CB-Class 226 | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-011 | CB-Gym | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-012 | CB-Hall 316 | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-013 | CB-Class 307 | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-014 | CB-Stair 301 | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |
| 21090303-015 | CB-Outdoor | 08/30/21 | 00:00 | Air | 4-Phenylcyclohexene | VARIOUS | NONSC | NON |

**Data Deliverables Required: COA**

**Perform Q.C. on Sample :** _____

**Send Report Attn :** reporting@phaseonline.com

**Send InvoiceAttn :** invoicing@phaseonline.com

Airbill No.: _____ Carrier : UPS

Condition Upon Receipt : _____

Comments :

Samples Relinquished By : [signature] Date : 9/7/21 Time: _____ Samples Received By : ~~Brett Grenert-Fischer~~ Brett Grenert-Fischer 9/10/21 0953

Samples Relinquished By: _____ Date : _____ Time : _____ Samples Received By: _____

Samples Relinquished By: _____ Date: _____ Time: _____ Samples Received By: _____

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: ACPS IAQ Testing

PSS Project No.: 21090303

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

**Sample Receipt:**

All sample receipt conditions were acceptable.

21090303: Analyses associated with analyst code 4051 were performed by
SGS North America - NY, 6601 Kirkville Road, East Syracuse, NY 13057 - NY 11626

**NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.**

21090303

**SGS GALSON**

6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)

www.sgsgalson.com

☐ New Client?

Client Account No.*:

Report To* : Phase Separation Science
6630 Baltimore National Pike
Baltimore, MD 21228

Phone No.* : 410-747-8770
Cell No. :
Email Results to : Amber Confer
Email address: reporting@phaseonline.com

Invoice To* : Phase Separation Science

Phone No.: 410-747-8770
Email : invoicing@phaseonline.com
P.O. No. : ODC 4920002-001
Credit Card : ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
|---|---|
| ☑ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name : Charles Barrett  Project : ACPS IAQ testing - 4920002  Sampled by : Karl Ford

Comments :

List description of industry or Process/interferences present in sampling area :
Public grade school

State samples were collected in (e.g., NY)
VA

Please indicate which OEL this data will be used for :
☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA
☐ MSHA ☐ Other (specify):

| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - Cafe | 08/30/21 | Sm Charcoal tubes / 226-01 | 58.4 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Class 102 | 08/30/21 | Sm Charcoal tubes / 226-01 | 59.4 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Hall 107 | 08/30/21 | Sm Charcoal tubes / 226-01 | 59.6 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Office | 08/30/21 | Sm Charcoal tubes / 226-01 | 59.8 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Lobby | 08/30/21 | Sm Charcoal tubes / 226-01 | 60.2 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Auditorium | 08/30/21 | Sm Charcoal tubes / 226-01 | 58.6 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Hall 212 | 08/30/21 | Sm Charcoal tubes / 226-01 | 46 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Class 216 | 08/30/21 | Sm Charcoal tubes / 226-01 | 45.8 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Library | 08/30/21 | Sm Charcoal tubes / 226-01 | 46.8 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Class 226 | 08/30/21 | Sm Charcoal tubes / 226-01 | 46.8 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Gym | 08/30/21 | Sm Charcoal tubes / 226-01 | 47.6 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)* :

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by : | | 9/2/21 | 11:30 | Received by : | | 9/2/21 | 1715 |
| Relinquished by : | | | | Received by : | | | |

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

21090303

**SGS GALSON**

6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)

www.sgsgalson.com

☐ New Client?

Client Account No.*:

Report To* : Phase Separation Science
6630 Baltimore National Pike
Baltimore, MD 21228

Phone No.* : 410-747-8770
Cell No. :
Email Results to : Amber Confer
Email address: reporting@phaseonline.com

Invoice To* : Phase Separation Science

Phone No.: 410-747-8770
Email : invoicing@phaseonline.com
P.O. No. : ODC 4920002-001
Credit Card : ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
|---|---|
| ☑ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name : Charles Barrett  Project : ACPS IAQ testing - 4920002  Sampled by : Karl Ford

Comments :

List description of industry or Process/interferences present in sampling area : Public grade school

State samples were collected in (e.g., NY) VA

Please indicate which OEL this data will be used for : ☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - Room 316 Hall Glass LT 9/3/21 | 08/30/21 | Sm Charcoal tubes / 226-01 | 49.2 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Room 307 | 08/30/21 | Sm Charcoal tubes / 226-01 | 45.0 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Stair 301 | 08/30/21 | Sm Charcoal tubes / 226-01 | 41.2 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| CB - Outdoor | 08/30/21 | Sm Charcoal tubes / 226-01 | 56.6 | L | 4-Phenylcyclohexene | mod. NIOSH 1501 | |
| | | | | | | | |
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| | | | | | | | |
| | | | | | | | |

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)* :

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by : | [signature] | 9/2/21 | 11:30 | Received by : | [signature] | 9/2/21 | 1715 |
| Relinquished by : | | | | Received by : | | | |

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 2 of 2

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

# Sample Receipt Checklist

Project Name: ACPS IAQ Testing
PSS Project No.: 21090303

**Client Name** Total Environmental Concepts - Lorto
**Disposal Date** 10/07/2021

**Received By** Lynn Jackson
**Date Received** 09/02/2021 05:15:00 PM
**Delivered By** Client
**Tracking No** Not Applicable
**Logged In By** Lynn Jackson

**Shipping Container(s)**
No. of Coolers 0

Custody Seal(s) Intact? N/A
Seal(s) Signed / Dated? N/A

Ice N/A
Temp (deg C)
Temp Blank Present No

**Documentation**
COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Karl Ford
MD DW Cert. No. N/A

**Sample Container**
Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

**Holding Time**
All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 15
Total No. of Containers Received 15

**Preservation**

| | | |
|---|---|---|
| Total Metals | (pH<2) | N/A |
| Dissolved Metals, filtered within 15 minutes of collection | (pH<2) | N/A |
| Orthophosphorus, filtered within 15 minutes of collection | | N/A |
| Cyanides | (pH>12) | N/A |
| Sulfide | (pH>9) | N/A |
| TOC, DOC (field filtered), COD, Phenols | (pH<2) | N/A |
| TOX, TKN, NH3, Total Phos | (pH<2) | N/A |
| VOC, BTEX (VOA Vials Rcvd Preserved) | (pH<2) | N/A |
| Do VOA vials have zero headspace? | | N/A |
| 624 VOC (Rcvd at least one unpreserved VOA vial) | | N/A |
| 524 VOC (Rcvd with trip blanks) | (pH<2) | N/A |

## Comments: (Any "No" response must be detailed in the comments section below.)

**For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.**

Samples Inspected/Checklist Completed By: N L Jackson — Date: 09/03/2021
Lynn Jackson

PM Review and Approval: Amber L Confer — Date: 09/07/2021
Amber Confer

**SGS GALSON**

6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)

www.sgsgalson.com

☐ New Client?

Client Account No.*:

Report To* : Phase Separation Science
6630 Baltimore National Pike
Baltimore, MD 21228

Phone No.* : 410-747-8770
Cell No. :
Email Results to : Amber Confer
Email address: reporting@phaseonline.com

Invoice To* : Phase Separation Science

Phone No.: 410-747-8770
Email : invoicing@phaseonline.com
P.O. No. : ODC 4920002-001
Credit Card : ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
|---|---|
| ☐ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name : Charles Barrett  Project : ACPS IAQ testing - 4920002  Sampled by : Karl Ford

Comments :
Dosimeter cartrige # noted in the (Hexavelent Chromium Process) colum

List description of industry or Process/interferences present in sampling area :
Public grade school building

State samples were collected in (e.g., NY)
VA

Please indicate which OEL this data will be used for :
☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA
☐ MSHA ☐ Other (specify):

| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - Cafe | 08/30/21 | Assay N581 Aldehyde Badge | 292 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5226 |
| CB - Class 102 | 08/30/21 | Assay N581 Aldehyde Badge | 297 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5210 |
| CB - Hall 107 | 08/30/21 | Assay N581 Aldehyde Badge | 298 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5603 |
| CB - Office | 08/30/21 | Assay N581 Aldehyde Badge | 299 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5162 |
| CB - Lobby | 08/30/21 | Assay N581 Aldehyde Badge | 301 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5148 |
| CB - Auditorium | 08/30/21 | Assay N581 Aldehyde Badge | 293 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5554 |
| CB - Hall 212 | 08/30/21 | Assay N581 Aldehyde Badge | 230 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4233 |
| CB - Class 216 | 08/30/21 | Assay N581 Aldehyde Badge | 229 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4493 |
| CB - Library | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5457 |
| CB - Class 226 | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4369 |
| CB - Gym | 08/30/21 | Assay N581 Aldehyde Badge | 238 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4494 |

^Galson Laboratories will subsitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)* :

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by : | | | | Received by : | | | |
| Relinquished by : | | | | Received by : | | | |

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

**SGS GALSON**

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East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)

www.sgsgalson.com

☐ New Client?

Client Account No.*:

Report To* : Phase Separation Science
6630 Baltimore National Pike
Baltimore, MD 21228

Phone No.* : 410-747-8770
Cell No. :
Email Results to : Amber Confer
Email address: reporting@phaseonline.com

Invoice To* : Phase Separation Science

Phone No.: 410-747-8770
Email : invoicing@phaseonline.com
P.O. No. : ODC 4920002-001
Credit Card : ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

| Need Results By: | (surcharge) |
|---|---|
| ☐ Standard | 0% |
| ☐ 4 Business Days | 35% |
| ☐ 3 Business Days | 50% |
| ☐ 2 Business Days | 75% |
| ☐ Next Day by 6pm | 100% |
| ☐ Next Day by Noon | 150% |
| ☐ Same Day | 200% |

Site Name : Charles Barrett  Project : ACPS IAQ testing - 4920002  Sampled by : Karl Ford

Comments :
Dosimeter cartrige # noted in the (Hexavelent Chromium Process) colum

List description of industry or Process/interferences present in sampling area :
Public grade school building

State samples were collected in (e.g., NY)
VA

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☐ MSHA ☐ Other (specify):

| Sample Identification* (Maxmium of 20 Characters) | Date Sampled | Collection Medium | Sample Volume Sample Time Sample Area* | Sample Units*: L, ml,min,in2,cm2,ft2 | Analysis Requested* | Method Reference^ | Hexavalent Chromium Process (e.g., welding plating, painting, etc.)* |
|---|---|---|---|---|---|---|---|
| CB - Cafe | 08/30/21 | Assay N581 Aldehyde Badge | 292 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5226 |
| CB - Class 102 | 08/30/21 | Assay N581 Aldehyde Badge | 297 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5210 |
| CB - Hall 107 | 08/30/21 | Assay N581 Aldehyde Badge | 298 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5603 |
| CB - Office | 08/30/21 | Assay N581 Aldehyde Badge | 299 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5162 |
| CB - Lobby | 08/30/21 | Assay N581 Aldehyde Badge | 301 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5148 |
| CB - Auditorium | 08/30/21 | Assay N581 Aldehyde Badge | 293 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5554 |
| CB - Hall 212 | 08/30/21 | Assay N581 Aldehyde Badge | 230 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4233 |
| CB - Class 216 | 08/30/21 | Assay N581 Aldehyde Badge | 229 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4493 |
| CB - Library | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD5457 |
| CB - Class 226 | 08/30/21 | Assay N581 Aldehyde Badge | 234 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4369 |
| CB - Gym | 08/30/21 | Assay N581 Aldehyde Badge | 238 | Min | Formaldehyde | mod. OSHA 1007: TPLC/UV | PD4494 |

^Galson Laboratories will subsitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☑ Use method(s) listed on COC

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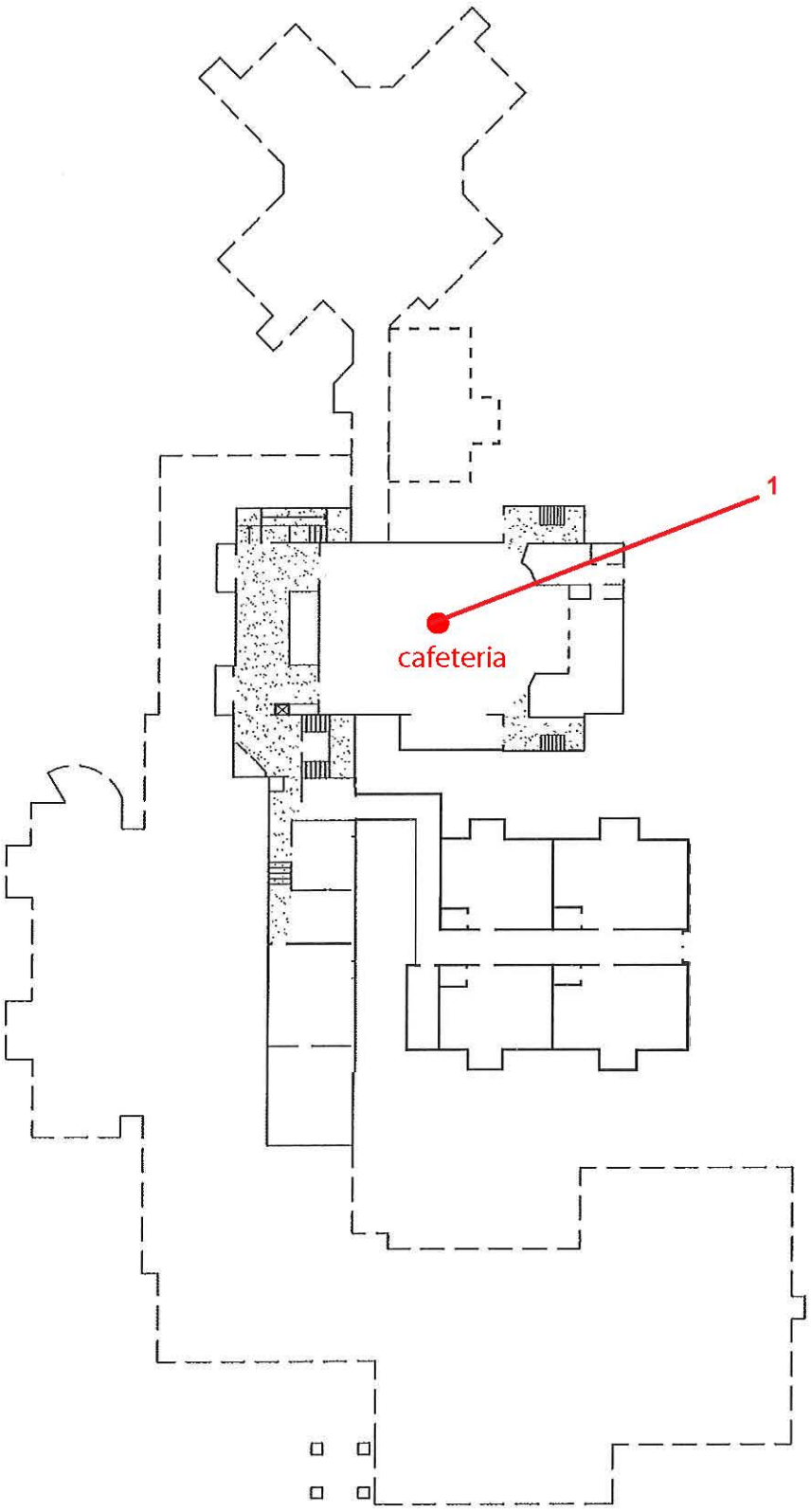
For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)* :

| Chain of Custody | Print Name/Signature | Date | Time | | Print Name/Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| Relinquished by : | | | | Received by : | | | |
| Relinquished by : | | | | Received by : | | | |

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

**Appendix F:** Sampling Locations




LEGEND

- Sample Location Analyzed For:
  - Mold
  - Radon
  - VOC's (TO+15)
  - 4-polycyclohexene
  - Formaldehyde

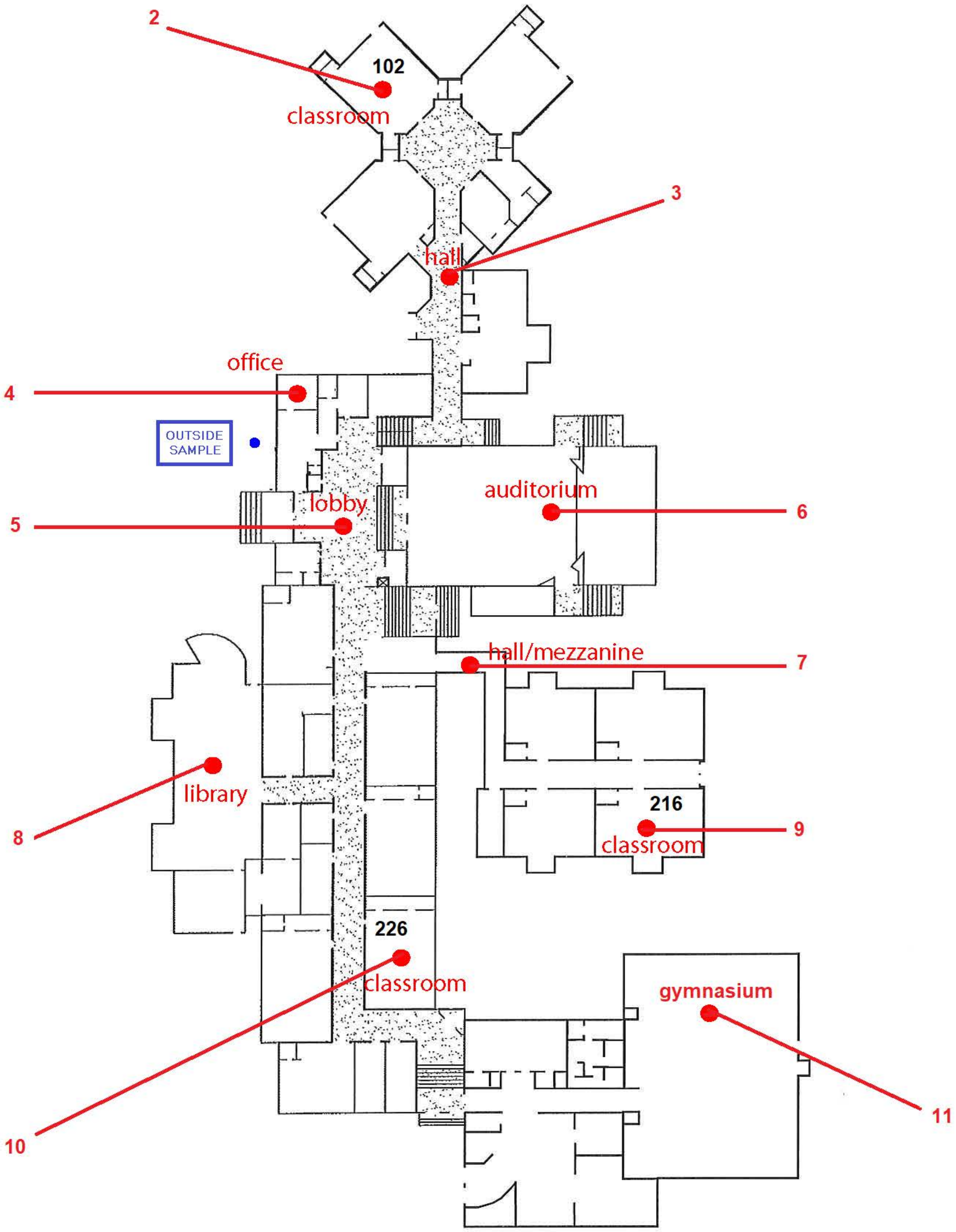
**CHARLES BARRETT ELEMENTARY SCHOOL**

**1115 Martha Custis Drive**
**Alexandria, Va 22302**

**BASEMENT PLAN**

Total Environmental Concepts, Inc.
8382 Terminal Road, Suite B
Lorton, VA 22079
Phone: 703-567-4346
Fax: 703-567-3487

Figure 1




LEGEND

● Sample Location Analyzed For:

Mold
Radon
VOC's (TO+15)
4-polycyclohexene
Formaldehyde

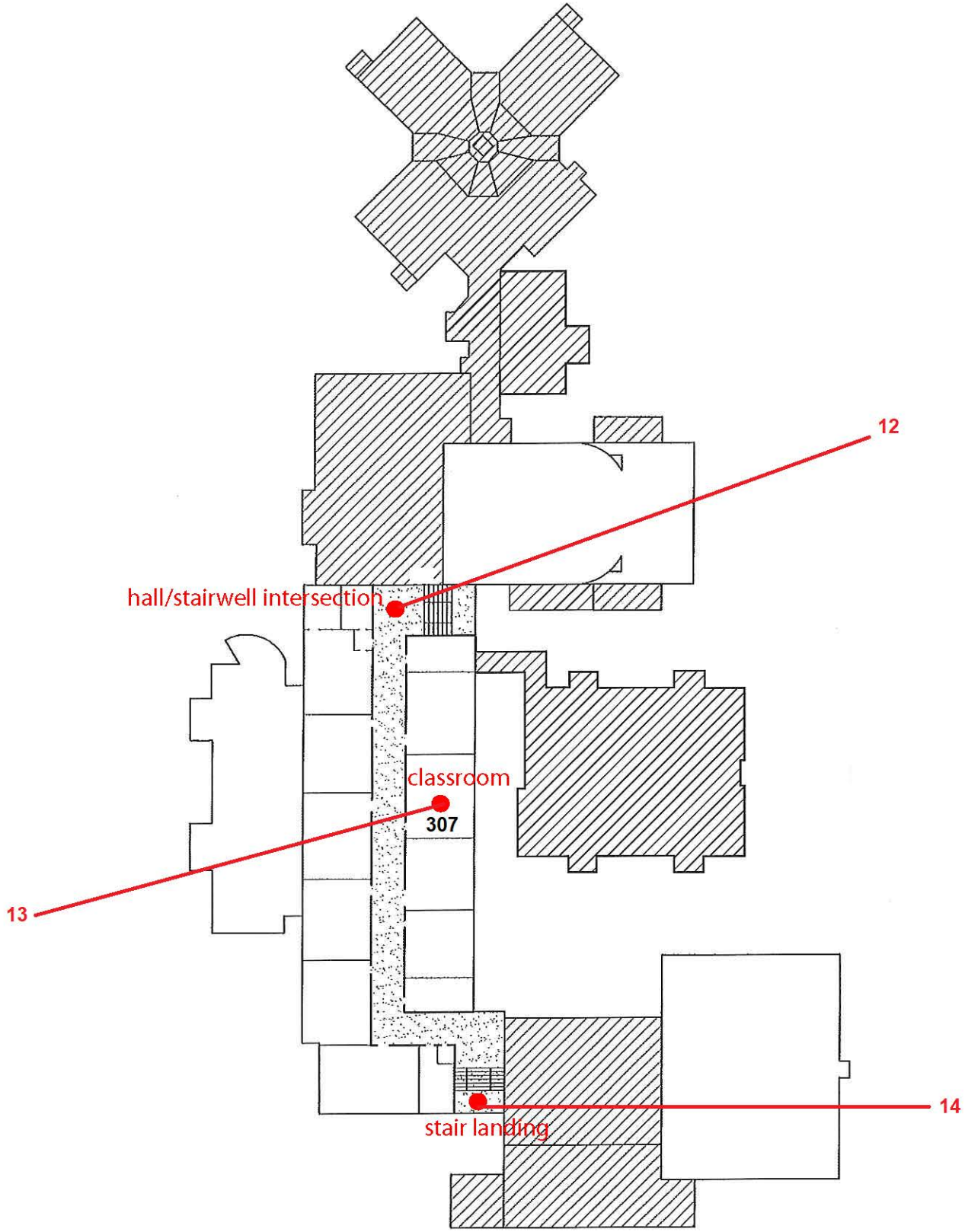
**CHARLES BARRETT ELEMENTARY SCHOOL**

**1115 Martha Custis Drive**
**Alexandria, Va 22302**

1ST FLOOR PLAN

Total Environmental Concepts, Inc.
8382 Terminal Road, Suite B
Lorton, VA 22079
Phone: 703-567-4346
Fax: 703-567-3487

Figure 2




LEGEND

● Sample Location Analyzed For:

Mold
Radon
VOC's (TO+15)
4-polycyclohexene
Formaldehyde

**CHARLES BARRETT ELEMENTARY SCHOOL**
**1115 Martha Custis Drive**
**Alexandria, Va 22302**

2nd FLOOR PLAN

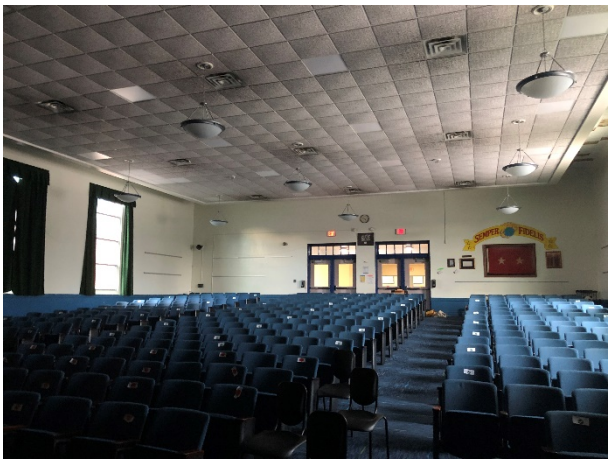
Total Environmental Concepts, Inc.
8382 Terminal Road, Suite B
Lorton, VA 22079
Phone: 703-567-4346
Fax: 703-567-3487

Figure 3

**Appendix G:** Photographs

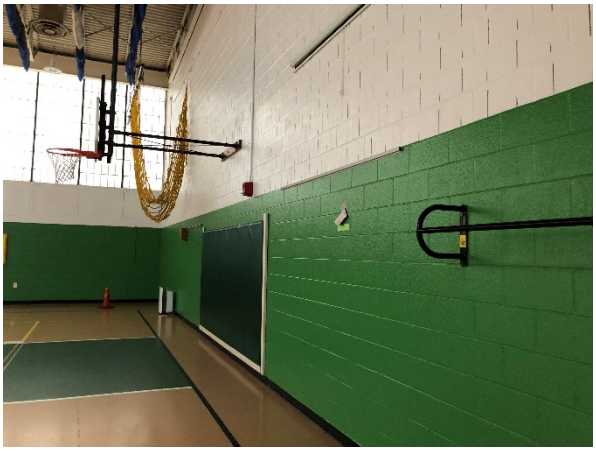

Charles Barrett, Media Center


Charles Barrett, Cafeteria



Charles Barrett, Auditorium


Charles Barrett, Classroom



Charles Barrett, Gym

Charles Barrett, Rotunda

Charles Barrett, Room 226

Charles Barrett, Alternative View Room 226