



March 28, 2023

Mr. Brian Croyle, Environmental Specialist  
Montgomery County Public Schools  
Division of Sustainability and Compliance  
8301 Turkey Thicket Drive  
Gaithersburg, MD 20879

Ref: **Baseline Sampling for Asphalt Fumes and Hydrogen Sulfide Gas**  
Poolesville High School  
KCI Job No. 122302497

KCI Technologies Inc. (KCI) is submitting the following letter report detailing the findings of baseline air sampling of Asphalt Fumes (benzene soluble fraction) and Hydrogen Sulfide gas at Poolesville High School located at 17501 W. Willard Rd. Poolesville, MD 20837 (subject site). Baseline sampling was conducted by KCI's Industrial Hygienist, Ms. Brittany Maas, under the oversight of KCI's Certified Industrial Hygienist (CIH), Mr. Jonathan Coale.

Background:

At Poolesville High School, current renovations and construction has raised concerns from student parents. Students and faculty have voiced concerns related to an odor present in the school while the roofing work is occurring. The parents are concerned the students are being exposed to unsafe conditions related to the asphalt fumes being produced during the roofing installation. MCPS contacted KCI to assist them in collecting baseline data on the student's potential exposure to fumes related to the roofing work being conducted.

Description of the Work Performed:

On March 16, 2023, KCI conducted baseline air sampling for Asphalt Fumes (benzene soluble fraction) and Hydrogen Sulfide gas levels at Poolesville High School. The sampling of Asphalt Fumes (benzene soluble fraction) was done under method: Modified NIOSH 5042; Gravimetric. This method will determine the total concentration of total particulate and the soluble fraction to which an individual is exposed. ACGIH has an adopted value of 0.5 mg/m<sup>3</sup> Threshold Limit Value (TLV) -Time-Weighted Average (TWA) for asphalt fumes. ACGIH's definition of TLV-TWA is the "concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, for a working lifetime without adverse effect". KCI also utilized a gas meter to collect real time readings of hydrogen sulfide (H<sub>2</sub>S), carbon monoxide (CO), and oxygen (O<sub>2</sub>) levels in various locations throughout the building and exterior. Direct read data was performed to collect short term "grab" samples to determine if the gas was present and was not intended to collect exposure data.

During the time of the air sampling, construction was being conducted, but no work was being done with the asphalt roofing. KCI placed six (6) sampling pumps set to approximately 2 liters per minute in locations pre-determined by MCPS. It is KCI's understanding that the sample locations selected by MCPS were where complaints were made from students. After all sampling pumps were placed, KCI took

real time readings of the hydrogen sulfide levels at each of these locations every 15 minutes. A sampling location map can be found in attachment A.

KCI conducted area sampling from approximately 09:12 until 12:48. Conditions during the sampling period were clear skies and 37°- 60°F.

After sampling, the cassettes were sealed, logged, bagged, and shipped as required to Galson Laboratories in East Syracuse, NY, where they were analyzed for Asphalt Fume (benzene soluble fraction) Modified NIOSH Method 5042. Galson Laboratories is accredited by the American Industrial Hygiene Association (#100324).

Results:

**Asphalt Fumes (Benzene Soluble Fraction)**

<b>Table 1.1 – Asphalt Fumes Sampling Summary</b>			
<b>Location</b>	<b>Sample Number</b>	<b>Concentration (mg/m<sup>3</sup>)</b>	<b>Above TLV-TWA?</b>
Outside of Main Office	PHS – 01	< 0.28	No
Arts Hallway – Outside Rm. 44	PHS – 02	< 0.28	No
Outside Auditorium	PHS – 03	< 0.28	No
Science Building 1 <sup>st</sup> Floor – Outside Rm. 184	PHS – 04	< 0.28	No
Science Building 2 <sup>nd</sup> Floor – Outside Rm. 284	PHS – 05	< 0.28	No
West End of Portables - Outside	PHS – 06	0.34	No
Blank - 1	PHS – 07	N/A	N/A
Blank - 2	PHS – 08	N/A	N/A

N/A: Not Applicable

Laboratory analysis results are included as Attachment B.

**Gas Meter Readings**

<b>Table 1.2 – Gas Meter Sampling Summary</b>			
<b>Time</b>	<b>Oxygen (O<sub>2</sub>)</b>	<b>Carbon Monoxide (CO)</b>	<b>Hydrogen Sulfide (H<sub>2</sub>S)</b>
10:00	20.8	0	0
10:15	20.8	0	0
10:30	20.8	0	0
10:45	20.8	0	0
11:00	20.8	0	0
11:15	20.8	0	0
11:30	20.8	0	0
11:45	20.8	0	0
12:00	20.8	0	0
12:15	20.8	0	0
12:30	20.8	0	0
12:45	20.8	0	0

Conclusion:

In conclusion, the baseline sampling data determined airborne Asphalt Fumes concentrations were below the ACGIH TLV-TWA adopted value during the period of sampling. The sample collected on the West End of Portables, which was outside, was the only sample with a detectable level of asphalt fumes. In addition, H<sub>2</sub>S and CO concentrations were not present or at concentrations below the gas meters detectable range. Oxygen levels were at the expected levels.

During sampling, asphalt roofing activities were not being performed. For student exposure purposes, the results of this sampling event can only be applied under similar conditions where no asphalt roofing activities are being performed. KCI recommends periodic exposure monitoring in these same locations while worst case asphalt roofing activities are being performed.

If you have questions or comments regarding this report, please contact me.

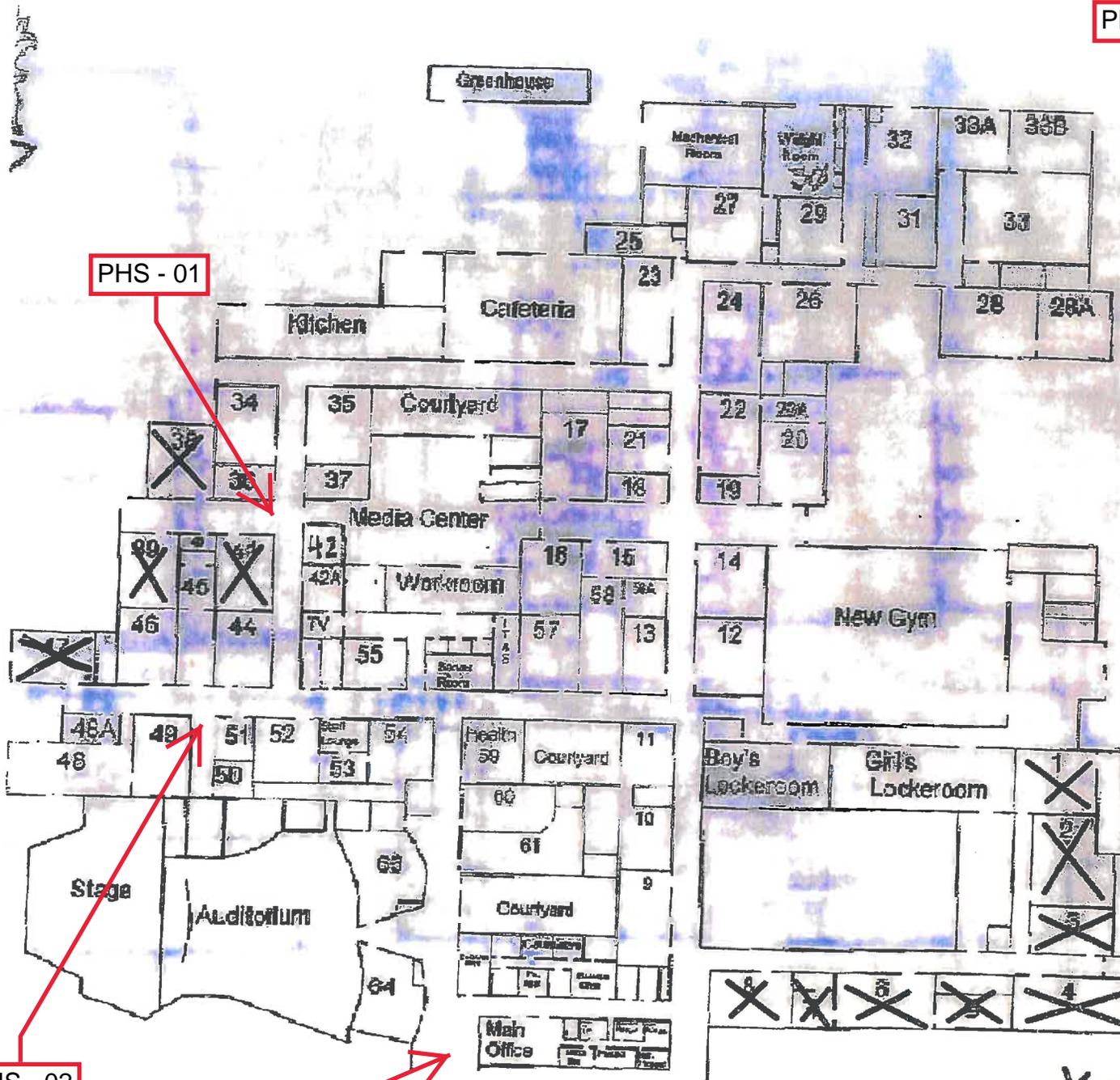
Sincerely,  
KCI Technologies, Inc



Jonathan S. Coale, CIH, CIEC  
Certified Industrial Hygienist  
KCI Technologies, Inc.

Attachment A: Sample Locations  
Attachment B: Laboratory Certificate of Analysis Report for Air Samples

**Attachment A**  
**Field Notes**



PHS - 01

PHS - 06

PHS - 02

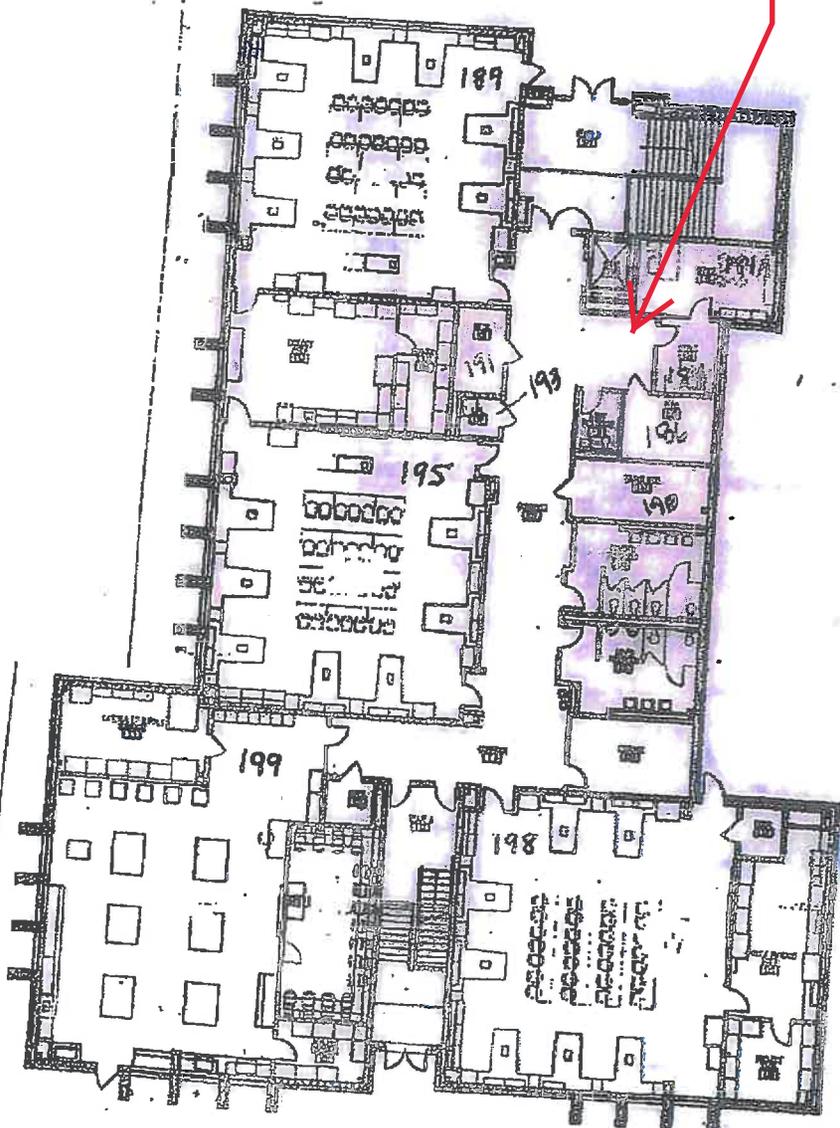
PHS - 03

P1	P6
P2	P7
P3	P8
P4	P9
P5	P10
Portables	

X = Room not being used

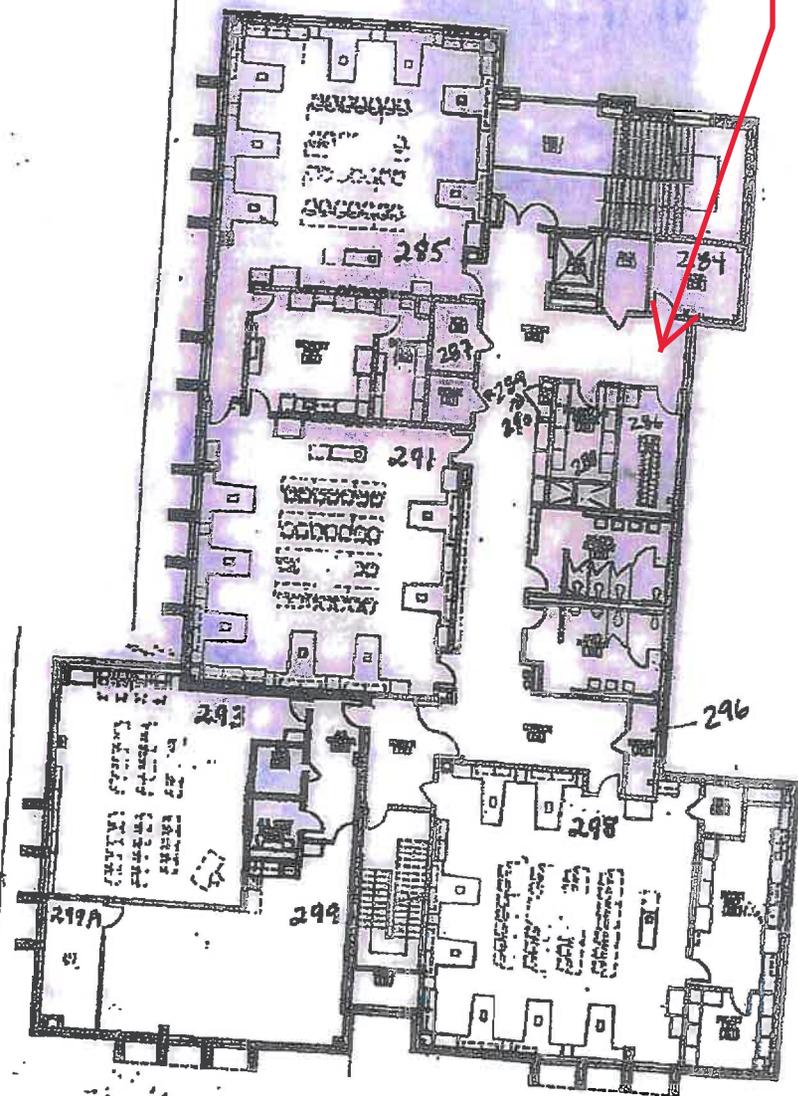
PHS - 04

PHS - 05



POOLESVILLE HIGH SCHOOL  
Science/Technology Addition

FIRST FLOOR



POOLESVILLE HIGH SCHOOL  
Science/Technology Addition

SECOND FLOOR

**Attachment B**  
**Laboratory Certificate of Analysis Report for Air Samples**



**GALSON**

**Jon Coale  
KCI Technologies  
936 Ridgebrook Road  
Sparks Glencoe, MD 21152**

**March 24, 2023**

**Account# 17844**

**Login# L588886**

**Dear Jon Coale:**

**Enclosed are the analytical results for the samples received by our laboratory on March 17, 2023. 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.
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**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](http://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
Louisiana (LDEQ)	LELAP	Lab ID: 04083	Air Analysis, Solid Chemical Materials

**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



# GALSON

## LABORATORY ANALYSIS REPORT

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

Client : KCI Technologies  
 Site : POOLESVILLE HIGH SCHOOL  
 Project No. : POOLESVILLE HS  
 Date Sampled : 16-MAR-23  
 Date Received : 17-MAR-23

Account No.: 17844  
 Login No. : L588886  
 Date Analyzed : 24-MAR-23  
 Report ID : 1349202

### Asphalt Fumes (Benzene-Soluble Fraction)

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>mg</u>	<u>Conc</u> <u>mg/m3</u>
PHS-01	L588886-1	360	<0.10	<0.28
PHS-02	L588886-2	360	<0.10	<0.28
PHS-03	L588886-3	360	<0.10	<0.28
PHS-04	L588886-4	360	<0.10	<0.28
PHS-05	L588886-5	360	<0.10	<0.28
PHS-06	L588886-6	360	0.12	0.34
PHS-07	L588886-7	NA	<0.10	NA
PHS-08	L588886-8	NA	<0.10	NA

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

Level of Quantitation: 0.10 mg  
 Analytical Method : mod. NIOSH 5042; Gravimetric  
 Collection Media : PTFE PW 1u 37mm

Submitted by: KGB  
 Date : 24-MAR-23  
 Supervisor : JGC

Approved by: JGC



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## LABORATORY FOOTNOTE REPORT

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

Client Name : KCI Technologies  
Site : POOLESVILLE HIGH SCHOOL  
Project No. : POOLESVILLE HS

Date Sampled : 16-MAR-23  
Date Received: 17-MAR-23  
Date Analyzed: 24-MAR-23

Account No.: 17844  
Login No. : L588886

L588886 (Report ID: 1349202):

SOPs: ic-asphalt(26)  
BSF = Benzene Soluble Fraction

L588886 (Report ID: 1349202):

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.

<u>Parameter</u>	<u>Accuracy</u>	<u>Mean Recovery</u>
Asphalt Fumes (Benzene-Soluble Fraction)	+/-16.8%	90.3%





GALSON

CHAIN OF CUSTODY

Comments :

Sample ID * (Maximum of 20 Characters)	Date Sampled *	Collection Medium	Sample Volume Sample Time Sample Area *	Liters Minutes in <sup>2</sup> , cm <sup>2</sup> , ft <sup>2</sup> *	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
PHS-03	3/16/23	37mm 1um PW PTFE, 2pc (black band)	360 Liters 9:24-12:24	180 min	Asphalt Fume (Benzene Soluble Fraction)	mod. NIOSH 5042; Gravimetric	
PHS-04	3/16/23	37mm 1um PW PTFE, 2pc (black band)	360 Liters 9:30-12:31	180 min	Asphalt Fume (Benzene Soluble Fraction)	mod. NIOSH 5042; Gravimetric	
PHS-05	3/16/23	37mm 1um PW PTFE, 2pc (black band)	360 Liters 9:36-12:36	180 min	Asphalt Fume (Benzene Soluble Fraction)	mod. NIOSH 5042; Gravimetric	
PHS-06	3/16/23	37mm 1um PW PTFE, 2pc (black band)	360 Liters 9:48-12:48	180 min	Asphalt Fume (Benzene Soluble Fraction)	mod. NIOSH 5042; Gravimetric	
PHS-07	3/16/23	37mm 1um PW PTFE, 2pc (black band)	—	—	Asphalt Fume (Benzene Soluble Fraction)	mod. NIOSH 5042; Gravimetric	
PHS-08	3/16/23	37mm 1um PW PTFE, 2pc (black band)	—	—	Asphalt Fume (Benzene Soluble Fraction)	mod. NIOSH 5042; Gravimetric	

^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature		Date	Time		Print Name / Signature		Date	Time
Relinquished By:	Brittany Maas		3/16/23	13:15	Received By:	Yasmine B. Rivers		3/17/23	2:19
Relinquished By:					Received By:				

\* You must fill in these columns for any samples which you are submitting.  
Samples received after 3pm will be considered as next day's business.

Online COC No. : 267465  
Prep No. : PSY689301  
Account No. : 17844  
Draft : 3/13/2023 5:31:55 PM

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