

MEMORANDUM

DATE : September 9, 2023

TO : Shane LaFave / Roers Companies, LLC

FROM : Pratap Singh, Ph.D., PE / KSingh

SUBJECT : Weekly Test Results and Remedial Action Activities for the Week Ending 09/09/2023
Community Within the Corridor - East Block

COPY TO : Que El-Amin / Scott Crawford, Inc., Robert Reineke, PE, Robert Fedorchak, PE
Project #40441B

The purpose of this memorandum is to report the test results and provide a summary of the work performed as a part of the emergency response for the referenced project for the week ending 09/09/2023. The floor plan of the East Block can be seen in Figure 1. The following tasks were performed throughout the week:

1. Taks #1 – TCE sampling from cracks in the columns
Air samples were taken from the cracks in the columns and analyzed in the portable GC. The results of the samples are reported in Tables 1 - 4. These results will be used to evaluate the requirement to seal the columns with biochar amended material. The levels suggest that in some areas, sealing the columns is essential. The columns are identified in Figure 2. A separate letter will be sent to WDNR to highlight the need for sealing the columns and seeking approval for the same.
2. Task #2 - Indoor Air Monitoring
KSingh has been conducting daily indoor air measurements in the work area to comply with the USEPA and WDNR recommended levels of Trichloroethene (TCE) under 8.8 µg/m³. The results of these samples are reported in Table 5 with no exceedances. These results have been added to the Comprehensive Data Table (Table 7).
3. Taks #3 - Vacuum Measurements for sub-slab depressurization
Vacuum Measurements were taken in all locations except – Units 1051, 1048, 1045, 1050, Outside 1050, N Mechanical Room, and SW Garage (2). All locations demonstrated sufficient vacuum similar to the previous week except Stairwell 4, Outside 1035, SW Garage (6), and SW Garage (19). All the Blowers were turned down to 50% to conserve the fan has continue to maintain sufficient vacuum. The vacuum measurements for the week are reported in Table 6.
4. Task #4 - Blower Fan Exhaust Sampling
Samples were collected from the blower exhaust of all operational blowers including the recently modified blowers 8 and 9. All bowers had a cumulative blow rate of about 2700 cfm leading to about 0.09 lbs removal of TCE in the first week of September. The individual blower exhaust rates and their

corresponding TCE concentrations with Year-To-Date exhaust quantities can be seen in Tables 8 and 9.

5. Task #5 - Construction Oversight

The soil excavation task was executed by Titan Construction. Soil was excavated from the outdoor area outside the gym near Building 1B-S. The excavated soil was transported to the dumpster and is scheduled to be taken off the site.

Attachments

KSingh has included the following figures, tables, and pictures for reference:

- Figure 1: CWC EB Floor Plan
- Figure 2: CWC EB Floor Plan with column labels
- Tables 1-5: Indoor Air Monitoring Results by Date
- Table 6: Comprehensive Vacuum Measurements (inches H₂O)
- Table 7: Comprehensive Data Table – Indoor Air
- Table 8: Blower Fan Exhaust Data Table for September
- Table 9: Blower Fan Exhaust Data Table since March

East Building Level 1

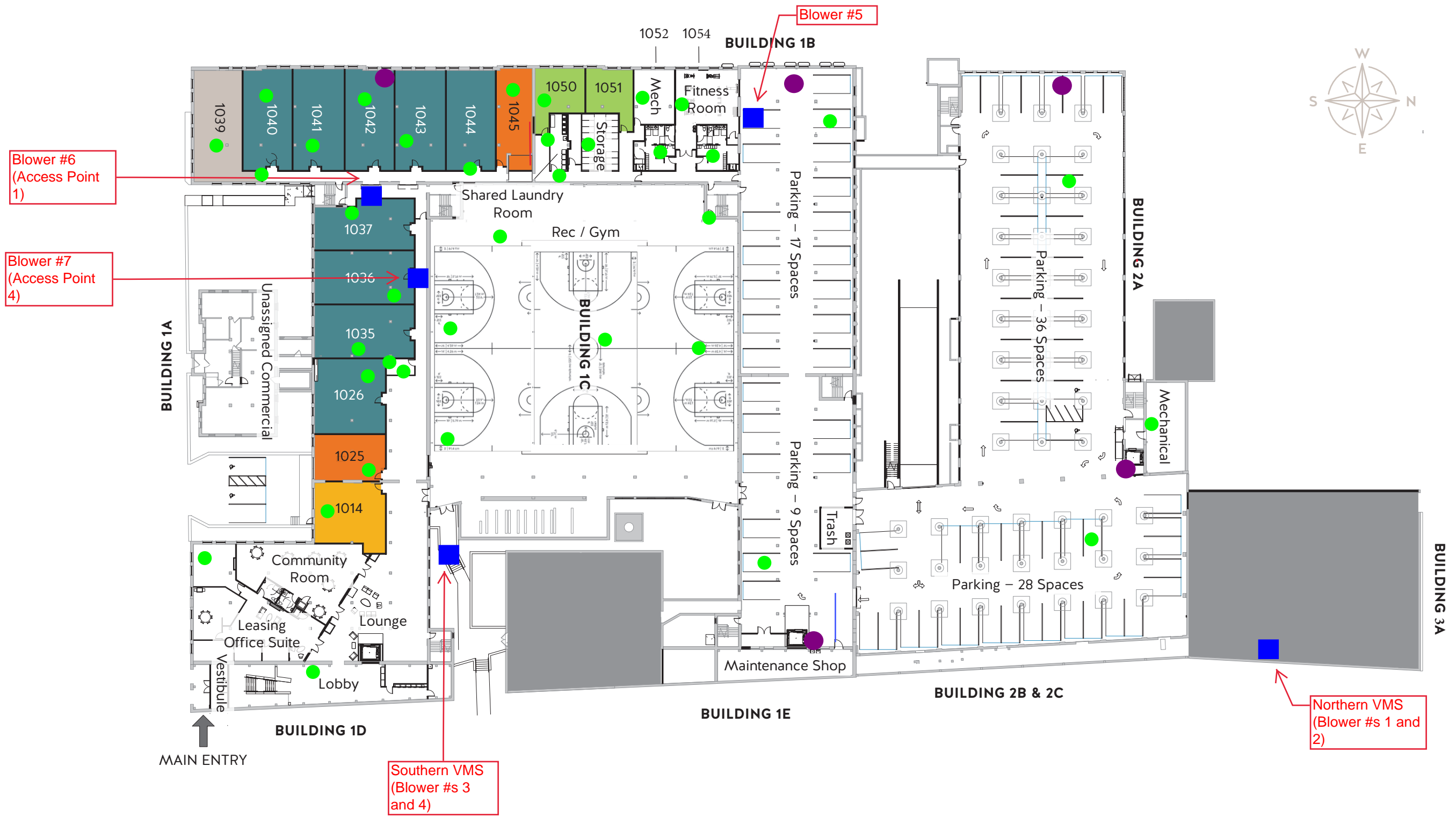


Figure 1 - CWC EB Level 1 Map with Blower, Vapor Pin and Sump Locations

East Building Level 1



Figure 2 - CWC EB Level 1 Map with Wooden Columns Locations and TCE Levels

Tables 1 - 5
Monitoring Results by Date
On-site EPA Method TO-14 Data

Instrument: SRI 8610 Gas Chromatograph with ECD
Operator: Sameer Neve, Ph.D. ENV SP and Samuel Ramirez / KSingh

Table 1: Monitoring Results from 09/04/2023

No readings taken on account of Labor Day Holiday

Table 2: Monitoring Results for columns from 09/05/2023

No.	Location	Time	TCE Reading ($\mu\text{g}/\text{m}^3$)
1	SWG - C13	8:50	<0.6
2	SWG - C14	8:59	<0.6
3	SWG - C15	9:10	<0.6
4	SWG - C16	9:17	<0.6
5	SEG - C1	9:27	<0.6
6	SEG - C2	9:34	<0.6
7	SEG - C3	9:42	<0.6
8	SEG - C4	9:52	<0.6
9	SEG - C5	10:04	<0.6
10	SEG - C6	10:12	<0.6
11	SEG - C7	10:20	<0.6
12	SEG - C8	10:27	<0.6
13	SEG - C9	10:35	<0.6
14	SEG - C10	10:45	<0.6
15	SEG - C11	11:04	<0.6
16	SEG - C12	11:15	<0.6
17	SEG - C13	11:30	<0.6
18	SEG - C14	11:38	<0.6
19	SEG - C15	11:46	<0.6
20	SEG - C16	11:56	<0.6
	Cal - 0.5 ppbv	7:36	0.45 ppbv

**Reporting Limit = 0.6 $\mu\text{g}/\text{m}^3$

Table 3: Monitoring Results for columns from 09/06/2023

No.	Location	Time	TCE Reading ($\mu\text{g}/\text{m}^3$)
1	1037 - C1	7:51	<0.6
2	1037 - C2	8:00	<0.6
3	1036 - C1	8:08	<0.6
4	1036 - C2	8:16	<0.6
5	1036 - C3	8:24	<0.6
6	1036 - C4	8:34	<0.6
7	1035 - C1	8:42	<0.6
8	1035 - C2	8:50	<0.6
9	1035 - C3	8:58	<0.6
10	1035 - C4	9:08	<0.6
11	SH - C1	9:18	<0.6
12	SH - C2	9:28	<0.6
13	1026 - C1	9:35	<0.6
14	1026 - C2	9:44	<0.6
15	1025 - C1	9:52	<0.6
16	1014 - C1	10:00	<0.6
17	1014 - C2	10:13	<0.6
18	CR - C1	10:24	<0.6
19	CR - C2	10:36	<0.6
20	CR - C3	10:45	<0.6
21	1044 - C2	10:53	1.81
22	1044 - C1	11:01	2.06
23	CR - C4	11:09	<0.6
24	LO - C1	11:20	<0.6
25	LO - C2	11:28	<0.6
26	LO - C3	11:36	<0.6
27	LO - C4	11:44	<0.6
28	SR - C1	11:53	<0.6
29	CNFR - C1	12:01	<0.6
30	SH - C3	12:09	<0.6
31	SH - C4	12:23	<0.6
32	SH - C5	12:30	<0.6
33	SH - C6	12:44	<0.6
34	SH - C7	12:52	<0.6
35	SH - C8	13:00	<0.6
36	SH - C9	13:09	<0.6
37	SH - C10	13:16	<0.6
38	SH - C11	13:25	<0.6

39	SH - C12	13:38	<0.6
40	2057 - C3	13:52	<0.6
41	2045 - C1	14:01	<0.6
42	2045 - C2	14:11	<0.6
43	2043 - C3	14:20	<0.6
	Calibration (0.5 ppbv)		0.48 ppbv

**Reporting Limit = 0.6 µg/m³

Table 4: Monitoring Results for columns from 09/07/2023

No.	Location	Time	TCE Reading (µg/m ³)
	Calibration (10 ppbv)	9:32 AM	6.74 ppbv
1	Unit 2014	10:35 AM	<0.6
2	Unit 2042	10:43 AM	<0.6
3	Unit 2045	10:51 AM	<0.6
4	Unit 2039	11:04 AM	<0.6
5	Unit 3014	11:11 AM	<0.6
6	Unit 3039	11:19 AM	<0.6
7	Unit 3045	11:31 AM	<0.6
8	Unit 3056	11:39 AM	<0.6

**Reporting Limit = 0.6 µg/m³

Table 5: Monitoring Results for indoor air from 09/08/2023

No.	Location	Time	TCE Reading (µg/m ³)
	Calibration (10 ppbv)		7.57 ppbv
1	Unit 2014	13:13	<0.6
2	Unit 2019	15:10	<0.6
3	Unit 2039	13:21	<0.6
4	Unit 2058	13:29	<0.6
5	Unit 2063	13:38	<0.6
6	Unit 2065	13:45	<0.6
7	Unit 2079	13:54	<0.6
8	Unit 2082	14:09	<0.6
9	Unit 2116	14:25	<0.6
10	Unit 3088	14:17	<0.6
11	Unit 3094	14:38	<0.6
12	Unit 3014	14:46	<0.6
13	Unit 3093	14:53	<0.6
14	Unit 2023	15:18	<0.6
15	Unit 2041	15:26	<0.6
16	Unit 3039	15:34	<0.6
17	Unit 3057	15:42	<0.6

**Reporting Limit = 0.6 µg/m³

Table 6: Comprehensive Vacuum Measurements (inches H₂O)

Date	5-Sep	6-Sep	7-Sep	8-Sep	
Time	9:45	8:30	16:10	16:05	
Location					Average
1055	-0.208	-0.211	-0.21	-0.206	-0.209
1054	-0.459	-0.464	---	-0.451	-0.458
1053	-0.222	-0.231	---	-0.225	-0.226
Oppo. 1054	-0.119	-0.112	-0.022	-0.114	-0.092
Stairwell 4	0	0	0	0	0.000
1052	-0.411	-0.416	---	-0.396	-0.408
1049	-0.01	-0.011	0	0	-0.005
Out 1044	-0.059	-0.061	-0.045	-0.05	-0.054
1043	-0.033	-0.038	-0.019	-0.017	-0.027
1042	-0.026	-0.02	-0.01	0	-0.014
1041	-0.033	-0.037	-0.037	-0.023	-0.033
1040	-0.06	-0.058	-0.055	-0.038	-0.053
Out 1040	-0.084	-0.078	-0.073	-0.065	-0.075
1039	-0.01	-0.012	-0.009	-0.004	-0.009
1037	-0.015	-0.013	-0.011	-0.008	-0.012
1036	-0.011	-0.012	-0.014	-0.015	-0.013
1035	-0.016	-0.014	-0.015	-0.022	-0.017
Out 1035	0	0	0	0	0.000
1058 E	-0.022	-0.024	-0.018	-0.014	-0.020
1058 W	-0.026	-0.029	-0.023	-0.011	-0.022
1026	-0.066	-0.062	-0.061	-0.04	-0.057
1025	-0.09	-0.088	-0.084	-0.087	-0.087
1014	-0.433	-0.43	-0.425	-0.412	-0.425
1011	-0.116	-0.11	---	-0.088	-0.105
SE Lobby	-1.134	-1.128	-1.104	-1.111	-1.119
BB 3	-0.049	-0.053	-0.049	-0.051	-0.051
BB 4	-0.014	-0.011	0	0	-0.006
BB 5	-0.033	-0.029	-0.012	-0.006	-0.020
SW Garage (26)	-0.161	-0.165	-0.137	-0.138	-0.150
SW Garage (6)	0	0	0	0	0.000
SW Garage (19)	0	0	0	0	0.000
SE Garage (11)	-0.019	-0.016	0	0	-0.009
SE Garage (14)	-0.032	-0.035	-0.015	-0.015	-0.024
NW Garage (80)	-0.04	-0.038	-0.01	-0.011	-0.025
NE Garage (36)	-1.716	-1.739	-1.696	-1.695	-1.712

Red highlighted cells indicate values below the desired level on -0.01 inH₂O

Community Within the Corridor - East Block

Table 7 - Discrete Sampling Test Results

Sample Location	1-May	2-May	3-May	4-May	5-May	8-May	9-May	10-May	11-May	12-May	15-May	16-May	17-May	18-May	19-May	22-May	23-May	24-May	25-May	26-May	30-May	31-May	
1045 Entry Floor Hole																							
1045 North Wall																							
1045 Wood Column																							
1050 South Wall Hole																							
1st Floor Hallway Center		14	9	3.5	2.3		3.49							21.2	3.48	5.39				2.38	3.6		
1st Floor Hallway North																							
1st Floor Hallway South									0.947	1.92	1.96		0										
2081 Hallway																							
2nd Floor Corridor North																							
2nd Floor Corridor South																							
2nd Floor Hallway Center								4.69			4.2										2.74		
2nd Floor Hallway North																							
2nd Floor Hallway South																							
Stairwell 2								4.15															
2nd Floor Stairwell 4						7.19																	
2nd Floor Stairwell 8																							
3rd Floor Corridor																							
3rd Floor Hallway Center											1.7										1.71		
3rd Floor Hallway South																							
3rd Floor Stairwell 2				2.35																			
Stairwell 3								3.9															
3rd Floor Stairwell 4																							
Basket Ball Court														1.84			8.96						
Basket Ball Court 2		2.2		3	2.3	0.624			1.02					1.53		0							
Basket Ball Court 3														1.56			0.536						
Basket Ball Court 4														0.816			0.734						
Elevator																							
Fitness Center								29				33.8	21	21	24.5	16.6		42.5	15.1		24.2		
Front Lobby																							
NW Garage													14			0.62							
N Garage										1.78			0.607		0	0.63		0.776					
SE Garage																6.6		0.6					
Hallway Outside 3021																							
Hallway Outside 3035																							
Hallway Outside 3065																							
N Mechanical Room	13.7	11.5			10.1	10.9	11.8		6.89		10.7						0.737						
Men's Locker Room	58	31.6						53.3			52.3	7.62								21.7			
Women's Locker Room					45															25.8			
Powerhouse																							
Unit 1002 - Postboxes																						0	
Unit 1006	2.97							2.4			1.7						0.737					0	
SSD Vent Pipe #1 - S - 7.5 HP	26.1	27.9			25.7		26.2		21.9					27.01		26.7				7.04			19.6
SSD Vent Pipe #2 - S - 10 HP	1.2				20		15.7		18.7					18.2		19.3				11.1			33.8

Community Within the Corridor - East Block

Table 7 - Discrete Sampling Test Results

Sample Location	1-Jun	5-Jun	7-Jun	8-Jun	9-Jun	12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	23-Jun	26-Jun	3-Jul	10-Jul	11-Jul	12-Jul	14-Jul	19-Jul	21-Jul	
1045 Entry Floor Hole																				
1045 North Wall																				
1045 Wood Column																				
1050 South Wall Hole																				
1st Floor Hallway Center							0.24							0.1						
1st Floor Hallway North																				
1st Floor Hallway South					0.4												0.39	0	0	
2081 Hallway																				
2nd Floor Corridor North																				
2nd Floor Corridor South																				
2nd Floor Hallway Center					0.42									0.1						
2nd Floor Hallway North																				
2nd Floor Hallway South																				
Stairwell 2																				
2nd Floor Stairwell 4																				
2nd Floor Stairwell 8																				
3rd Floor Corridor																				
3rd Floor Hallway Center						0.47								0.1						
3rd Floor Hallway South																				
3rd Floor Stairwell 2																				
Stairwell 3					0.1		0.23										0.42	0	0	
3rd Floor Stairwell 4																				
Basket Ball Court					2.65								0.2							
Basket Ball Court 2																	0.48	0.34	0.19	
Basket Ball Court 3							0.24													
Basket Ball Court 4																				
Elevator																				
Fitness Center	16.1	4.2		0.4			0.29	0.55					0.49	0.69						
Front Lobby																	0.56	0.21	0.23	

NW Garage					0.85	0												
N Garage						0.27												
SE Garage						0.23												
Hallway Outside 3021																		
Hallway Outside 3035																		
Hallway Outside 3065																		
N Mechanical Room	1.5				7.7	3.4				2.2	2.86							
Men's Locker Room				0.5			0.2			0.56	0.47	0.6						
Women's Locker Room				0.4			0.5											
Powerhouse																		
Unit 1002 - Postboxes																		
Unit 1006							0.21											
SSD Vent Pipe #1 - S - 7.5 HP						21.7												
SSD Vent Pipe #2 - S - 10 HP						18.4												
SSD Vent Pipe #3 - N - 7.5 HP																		
SSD Vent Pipe #4 - N - 10 HP																		
SW Garage							0.3			0.33								
Stairwell 4		3		0.34		0.24				0.33	0.2							
Stairwell 6																		
Stairwell 7																		
Unit 1011																		
Unit 1014				0.21						0			0.1					
Unit 1025				0.31														
Unit 1026													0.1					
Unit 1035				0.22						0.28	0.1		0.1					
Unit 1036			6.9	0.26						0.3								
Unit 1037				0.46						0.35	0.1		0.1					
Unit 1039				0.7	0.3					0.27	0.19		0.1					
Unit 1040				0.6							0.24							

Unit 1041					0.51											0.19	1.66	0.24	0.22
Unit 1042		4	19.2	0.8								0.24	0.1			0.1	0.82	0.21	0
Unit 1043					0.53			0.32			0.47		1.19						
Unit 1044		65.2	11.7	1.7				1.85			3.2	1.67	1.79			1.76	2.1	1.4	0.92
Unit 1045	23.3		14.4	2.4	5.26	3.84	3.33	2.99	2.88	2.57									
Unit 1048	121	19.8	13.5	0.33				0.43			0.72	0.1	0.55						
Unit 1049	21.8	23.6		1.2				0.58			2.5	1.03							
Unit 1050	60.4	27.3	10.3	3.4	3.05	2.28	1.95	2.12	2.17	1.62									
Unit 1051	16.9				0.76			0.38								0.26	1.35	0.27	0.24
Unit 1052	14.5			0.23				0.36				0.35	0.1						
Unit 1056	14.6																		
Unit 1057																			
Unit 1058							0.21				0.34								
Unit 1079																			
Unit 2014						0.35										0.1	0.54	0	0
Unit 2015																			
Unit 2016														0.1					
Unit 2017														0.1					
Unit 2022																			
Unit 2025														0.1					
Unit 2036																			
Unit 2037																			
Unit 2039																			
Unit 2040														0.1					
Unit 2042														0.1					
Unit 2043																			
Unit 2044																			
Unit 2045					0.52														
Unit 2049																			
Unit 2056					1											0.1	1.23	0.41	0.5
Unit 2057																0.1	0.49	1.09	0
Unit 2058																0.1	1.05	0.97	0
Unit 2059																0.1	0.21	0.77	0

Table 8: Blower Fan Exhaust Data Table for August

GC TCE Measurements of Blower Effluent and Estimated Removal Rates						
Date: September 7, 2023						
Blower No.	Pipe Diameter	Exhaust Velocity	Flow Rate	TCE Concentration	TCE Removal Rate	TCE Removal Rate
	inches	fpm	cfm	ug/m3	lbs/day	lbs/yr
1	4	3642	318	3.41	0.000097	0.035561
2	4	4449	388	17.04	0.000595	0.217077
2A	4	4351	380	25.1	0.000857	0.312712
3 and 4	6	4016	789	15.3	0.001085	0.395867
5	4	2857	249	265.9	0.005960	2.175255
6	4	2067	180	71.4	0.001158	0.422591
9	4	1161	101	1.45	0.000013	0.004820
8	4	3032	265	11.45	0.000272	0.099407
			2670		Total	3.56

Table 9: Blower Fan Exhaust Data Table since March

TCE Measurements of Blower Effluent and Estimated Removal						
TCE Removal (lbs in Month)						
Blower No.	May	June	July	August	September	Total
1	0.0172	0.0175	0.0250	0.0039	0.0009	0.0644
2	0.0313	0.0206	0.0190	0.0149	0.0054	0.0911
2A				0.0277	0.0077	0.0354
3+4	0.0241	0.0154	0.0387	0.0471	0.0098	0.1350
5		0.4196	0.2556	0.3277	0.0536	1.0565
6		0.0229	0.0085	0.0886	0.0104	0.1305
7		0.0093	0.0210	0.0179	0.0000	0.0482
8		0.0015		0.0052	0.0025	0.0091
9				0.0001	0.0001	0.0002
					Total	1.5701