September 24, 2020

The Honorable Ken McQueen
Regional Administrator – R6
1201 Elm St.
Dallas, TX 75270
[HYPERLINK "mailto:McQueen.ken@Epa.gov"]

RE: Urgent Request Related to Removal of Chloroprene Community Air Monitors in Reserve, LA

Dear Administrator McQueen,

The purpose of this letter is to request your reconsideration of the decision to replace the six existing chloroprene Community Air Monitors (existing monitors) installed around the Denka Performance Elastomer Plant (DPE) in Reserve, LA in 2016 with the recently installed SPod "Continuous Air Monitoring" sensors (SPod sensors) at the end of September.

We make this request based or 1) preliminary analytic results of the recently released SPod sensor data which suggests the system failed to meet all EPA stated objectives, 2) the unique characteristics and needs of the residents of St. John the Baptist Parish, and 3) because of the potential unintended negative impacts on a number of current and planned high priority investigations and epidemiologic studies.

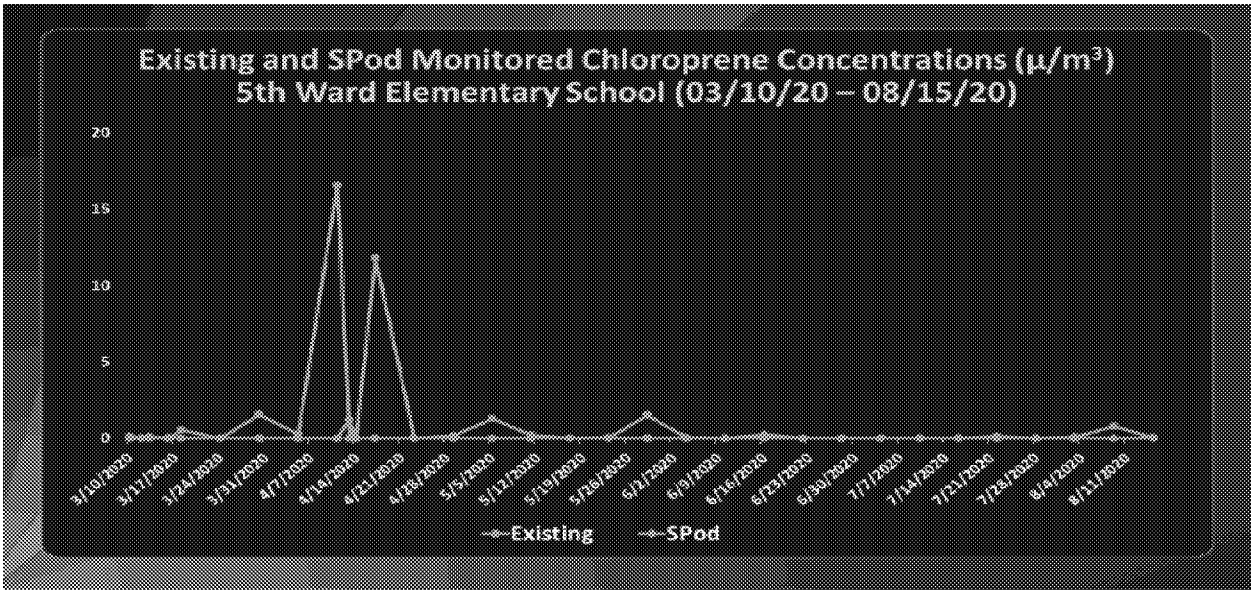
Continuous Air Monitoring System Objectives

In your January 15, 2020 letter to Congressional Representative Cedric Richmond, you stated your belief the new monitoring system will "...provide a better understanding of the frequency and magnitude of chloroprene spikes" and "this air monitoring effort could help us identify measures that Denka may be able to take to decrease the likelihood of future spikes and further reduce ambient concentrations of chloroprene in the community." During the February 10, 2020 public meeting at Tchoupitoulas Chapel, Deputy Regional Administrator David Gray said he expected the new system to take chloroprene readings more frequently and in response to multiple questions an expressed concerns from participants stated, "It sounds kind of smart to me. It sounds like it will provide more information."[1]

Because the summary of SPod sensor data was not available until Sept. 16th, we have not completed the full analysis or conducted a thorough examination to identify and correct potential data entry or other minor errors. However, given the imminent planned date for the existing monitor removal, we felt it was important to share our preliminary findings and associated concerns.

Preliminary Results Comparing the Summary Data from Collocated Chloroprene SPod Sensors and Existing Monitors Located at 3 Sites Around the DPE Facility

The following time series graphs compares the collection frequency and magnitude of detected chloroprene concentrations in samples analyzed between March 10 and August 16 from the collocated existing community monitor and SPod sensors from 3 of the 6 sites.


Existing and SPod Monitored Chloroprene Concentrations (µ/m³)
5th Ward Elementary School (03/10/20 – 08/15/20)
20
15
10
5
0
3/10/2020
3/17/2020
3/24/2020
3/31/2020
4/7/2020
4/14/2020
4/21/2020
4/28/2020
5/5/2020
5/12/2020
5/19/2020
5/26/2020
6/2/2020
6/9/2020
6/16/2020
6/23/2020
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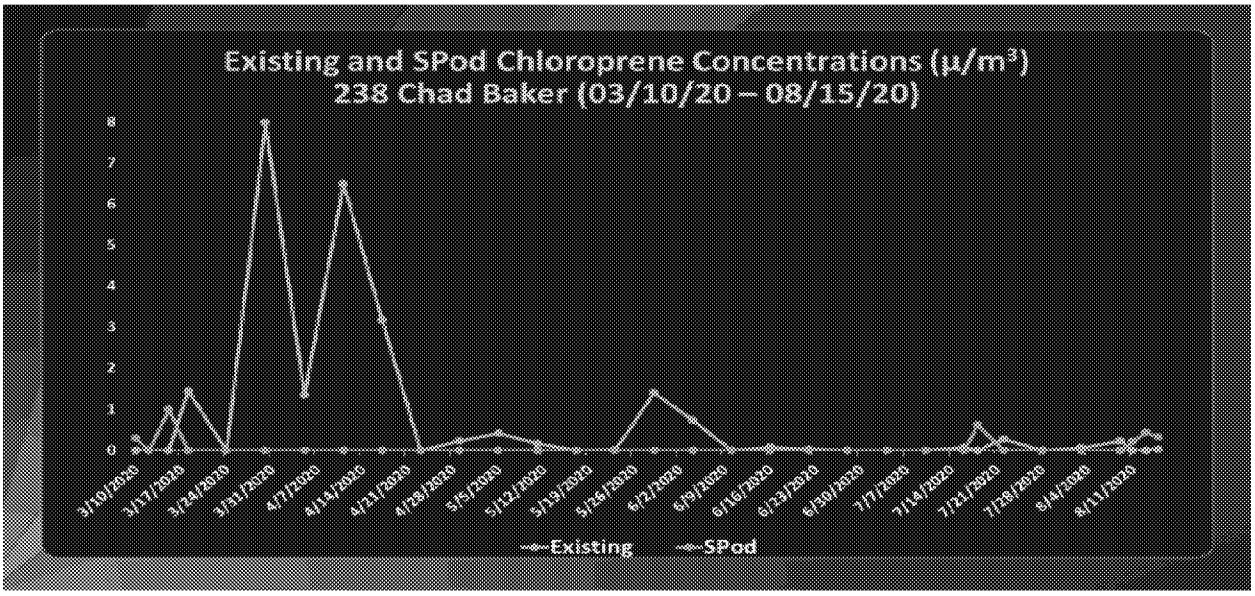
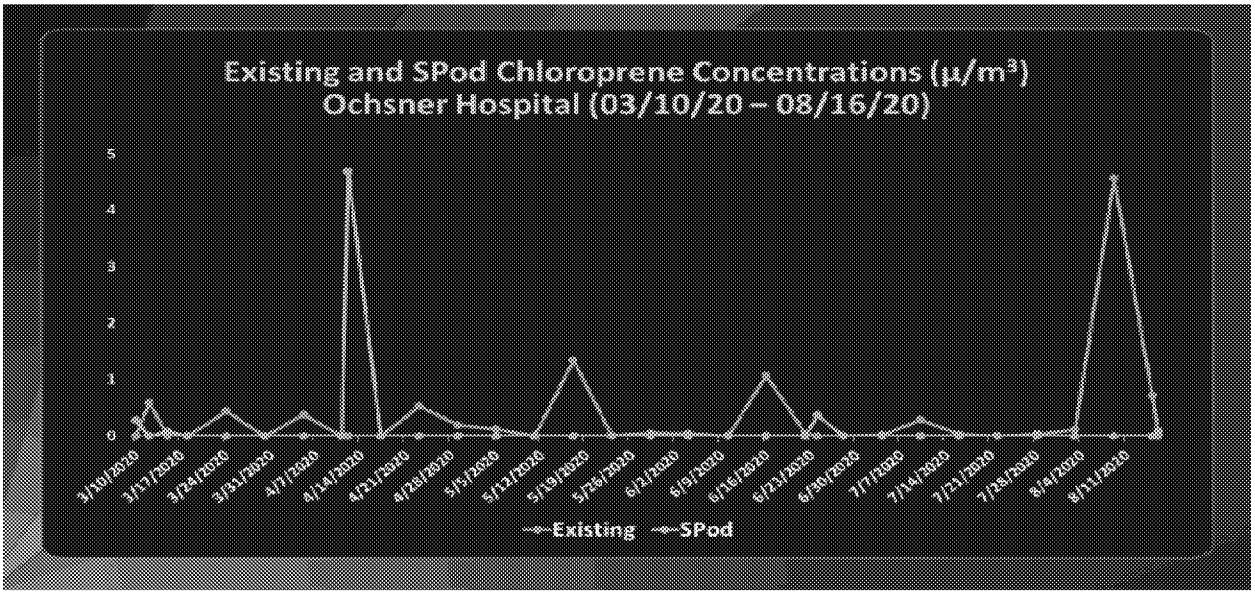
7/21/2020
7/28/2020
8/4/2020
8/11/2020
Existing
SPod


Existing and SPod Chloroprene Concentrations (µ/m³)
238 Chad Baker (03/10/20 – 08/15/20)
8
7
6
5
4
3
2
1
0
3/10/2020
3/17/2020
3/24/2020
3/31/2020
4/7/2020
4/14/2020
4/21/2020
4/28/2020
5/5/2020
5/12/2020
5/19/2020
5/26/2020
6/2/2020
6/9/2020
6/16/2020
6/23/2020
6/30/2020
7/7/2020
7/14/2020
7/21/2020
7/28/2020
8/4/2020
8/11/2020
Existing
SPod


Existing and SPod Chloroprene Concentrations (µ/m³)
Ochsner Hospital (03/10/20 – 08/16/20)
5
4
3
2
1
0
3/10/2020
3/17/2020
3/24/2020
3/31/2020
4/7/2020
4/14/2020
4/21/2020
4/28/2020
5/5/2020
5/12/2020
5/19/2020
5/26/2020
6/2/2020
6/9/2020
6/16/2020
6/23/2020
6/30/2020
7/7/2020
7/14/2020
7/21/2020
7/28/2020
8/4/2020
8/11/2020
Existing
SPod

Tables 1 – 3. The following tables depicts the dates and values of detected concentrations in samples collected by the Existing Monitor and SPod sensor between March 10 and August 16 from 3 of the 6 sites.

5th Ward Elementary Existing and SPod Detected Chloroprene Concentrations (µg/m³) 03/10 - 08/15		
Date	Existing	SPod
03/10/2020	--	0.1520
03/12/2020	ND	--
03/13/2020	--	0.1130
03/16/2020	--	0.0600
03/18/2020	0.566	--
03/30/2020	1.590	--
04/05/2020	0.302	--
04/11/2020	16.600	--
04/13/2020	--	1.294
04/14/2020	--	0.038
04/17/2020	11.800	--
04/29/2020	0.176	--
05/05/2020	1.330	--
05/11/2020	0.220	--
05/23/2020	0.050	--
05/29/2020	1.560	--
06/04/2020	0.082	--
06/16/2020	0.272	--
06/22/2020	0.015	--
07/22/2020	0.145	--
08/03/2020	0.088	--
08/09/2020	0.834	--
08/15/2020	0.057	--
Total Number	17	5
Maximum	16.6	1.294

-- Sample not collected
ND Concentration not detected

238 Chad Bakeer Existing and SPod Detected Chloroprene Concentrations (µg/m³) 03/10 - 08/15		
Date	Existing	SPod
03/10/2020	--	0.292
03/12/2020	ND	--
03/15/2020	--	1.009
03/18/2020	1.460	--
03/30/2020	7.980	--
04/05/2020	1.350	--
04/11/2020	6.490	--
04/17/2020	3.160	--
04/29/2020	0.230	--
05/05/2020	0.424	--
05/11/2020	0.170	--
05/23/2020	0.017	--
05/29/2020	1.400	--
06/04/2020	0.740	--
06/16/2020	0.068	--
06/22/2020	0.024	--
07/16/2020	0.077	--
07/18/2020	--	0.631
07/22/2020	0.288	--
08/03/2020	0.065	--
08/09/2020	0.226	--
08/11/2020	--	0.211
08/13/2020	--	0.441
08/15/2020	0.029	0.321
08/16/2020	--	0.136
Total Number	18	7
Maximum	7.980	1.009

-- Sample not collected
ND Concentration not detected

Ochsner Hospital Existing and SPod Detected Chloroprene Concentrations (µg/m³) 03/10 - 08/15		
Date	Existing	SPod
03/10/2020	--	0.281
03/12/2020	0.589	Invalid
03/15/2020	--	0.079
03/24/2020	0.443	--
04/05/2020	0.384	--
04/12/2020	--	4.684
04/23/2020	0.530	--
04/29/2020	0.195	--
05/05/2020	0.134	--
05/17/2020	1.340	--
05/23/2020	0.0134	--
05/29/2020	0.0555	--
06/04/2020	0.0508	--
06/10/2020	0.008	--
06/16/2020	1.080	0.006
06/22/2020	0.0472	--
06/24/2020	--	0.370
07/04/2020	0.0294	--
07/10/2020	0.291	--
07/16/2020	0.0392	--
08/03/2020	0.0384	--
08/09/2020	0.116	--
08/15/2020	4.570	--
08/16/2020	0.715	0.091
Total Number	20	6
Maximum	4.570	4.684

-- Sample not collected
ND Concentration not detected

Provisional Findings

Based on the above preliminary results:

- There is ***no visually observable correlation*** between concentrations detected in samples collected on the 1-in-6-day schedule by the existing monitors and concentrations detected by the continuous SPod monitors.
- At all 3 sites, ***the existing monitors provided more than twice the number of detected chloroprene concentrations*** compared to the number provided by the SPod sensor. The number of detected concentrations provided by the existing monitor at 5th Ward, Chad Baker, and Ochsner Hospital was 3.4, 2.6, and 3.3 times respectively, greater than the number provided by the collocated SPod sensors.
- ***The SPod sensors collected same-day detected concentrations on only 3 of the 55 (5.4%) total number of dates*** when samples with detected concentrations were collected by the existing monitors samples.
- The maximum chloroprene concentration in samples collected by ***the existing monitors at the 5th Ward and Chad Baker sites was 21. 5 and 7.9 times greater respectively*** than the maximum collected by the collocated SPod sensors. The maximum concentration in samples collected by the SPod sensor at the Ochsner Hospital site was slightly (1.02) higher than the maximum collected by the existing monitor, however, the difference was not statistically significant.

Implications of Findings Based on Preliminary Results

As you are aware, community air monitoring systems can improve collective knowledge of the sources and health risks of toxic air pollution within a community, improve the quality and dissemination of epidemiologic research, and catalyze targeted actions and policies to reduce exposures and improve health.[2,3]

Removing the existing EPA chloroprene monitors now will have a deleterious impact on data-driven actions to protect the health and safety of the over 500 students attending 5th Ward Elementary students and other parish residents.

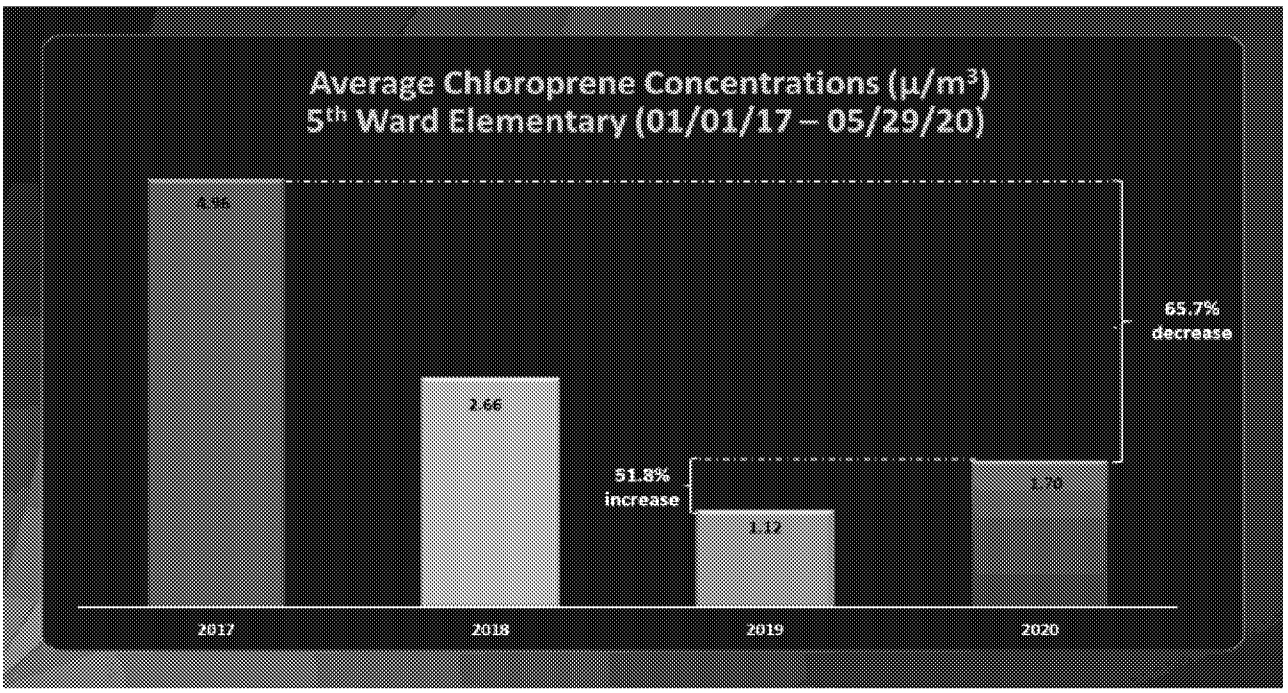
Further, the loss of on-going chloroprene monitoring data will impact the ability to accurately characterize neighborhood-level exposures, which will negatively affect the scientific rigor, quality, and findings of on-going and future urgently needed epidemiologic investigations and research in St. John and other river parishes.

Implications for the Health of 5th Ward Elementary School Students

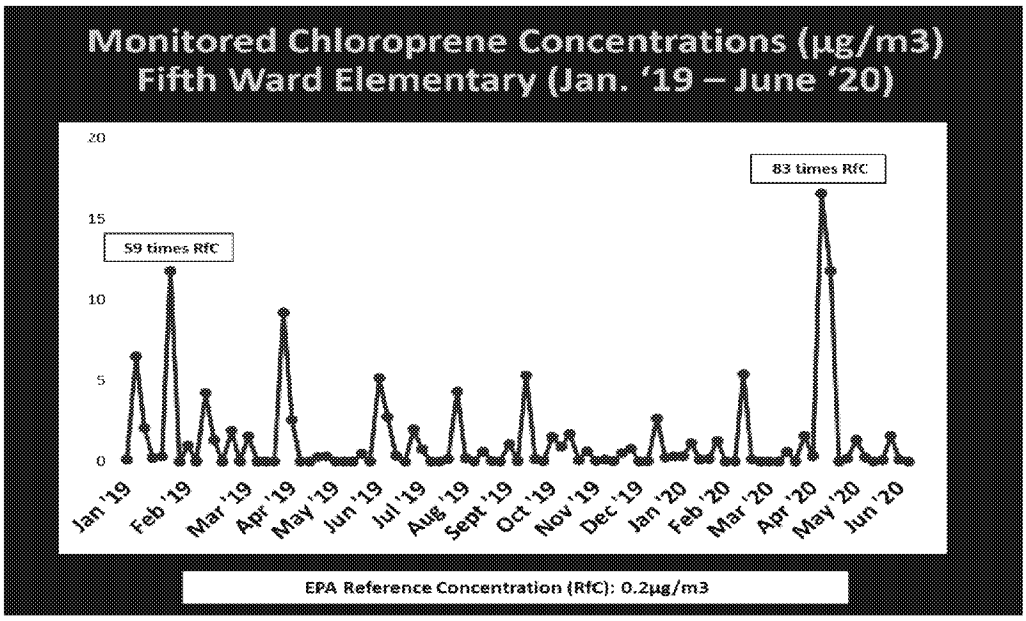
Despite the 85% reduction in Denka's reported chloroprene emissions, average concentrations measured at all six monitoring sites combined declined by only 73.5% and reductions levels at each of the individual monitoring sites varied significantly (See Attachment 1 for complete results).

Most alarmingly, the analysis results suggest the 500 students attending 5th Ward Elementary are likely being exposed to significantly higher concentrations in 2020 compared to 2019 levels.

As shown in the following graph, between January 1, 2017 and April 29th average concentrations at 5th Ward Elementary School only declined overall by 60.3% from the 2017 level. Between January 1st and May 11th, 2020, <u>average concentrations actually increased 66.1%</u> to an average of 1.86 µg/m³, which is approximately 10 times higher than the 0.2 µg/m³EPA RfC.[iv]



Levels of the April 2020 chloroprene spike measured at 5th Ward was also significantly higher than spikes recorded in 2019.



Note: Summary monitoring data is currently available through August 15, 2020 for the 5th Ward site. However, based on Denka's monthly monitoring reports, the June 2020 chloroprene production levels declined to 0.0 (100%) and neoprene declined by 91%. Because the unusual June declines, the measured concentrations are not considered appropriate for inclusion.

Chloroprene Unit Production Levels (lbs) Denka Performance Elastomer Plant			
Month	2019	2020	Percent Change
Jan.	5698000	5017000	-11.95%
Feb.	5898000	4693000	-20.43%
Mar.	6332000	3751000	-40.76%
Apr.	Missing	4432000	NA
May	3831000	2737000	-28.56%
June	**6786000**	**0**	**-100.00%**
Jul.	5056000	1754000	-65.31%
Aug.	5535000	4600000	-16.89%

Neoprene Unit Production Levels (lbs) Denka Performance Elastomer Plant			
Month	2019	2020	Percent Change
Jan.	6286789	5020449	-20.14%
Feb.	6175970	5249222	-15.01%
Mar.	6790924	33974709	400.30%
Apr.	Missing	4795791	NA
May	4055679	3664546	-9.64%
June	**6682135**	**605168**	**-90.94%**
Jul.	5583509	952682	-82.94%
Aug.	5830316	4865883	-16.54%

For more than four years, parents and residents have petitioned the 5th Ward School Board and other local officials to relocate the 500 5th Ward Elementary students to a safer location. Prior to the start of in-person classes on September 8th, a School District representative reported they were carefully considering the chloroprene monitoring results and that they have been "in contact with both the Concerned Citizens of St. John and Denka regarding this matter and will continue to monitor the situation along with these groups."[v]

Without continued data from the existing monitors, there will be no way to assess whether the 2020 documented increased in spikes and average concentration levels at 5th Ward was an anomaly or an indicator of a disturbing new trend of increasing chloroprene concentrations.

Implications for Current and Future Epidemiologic Investigations and Studies

As a reminder, for more than 3 weeks beginning in late March***, St. John had the highest COVID-19 death rates per capita in nation and our parish residents continues to the 2nd highest rate in Louisiana.***[6,7] A 2015 study conducted by Metropolitan Hospital Council of New Orleans using hospitalization data ***found asthma rates among St. John children including 5th Ward Elementary students are more than two-and-a-half times higher than Louisiana and US rates.***[8]

Despite the documented pollution levels and disparities in child asthma rates and excess COVID-19 deaths, no public health investigations or well-designed epidemiological studies have investigated the full range of likely health effects among St. John residents resulting from exposures to individual air pollutants or cumulative exposures to multiple pollutants including the three priority risk drivers (PM2.5, chloroprene, and ethylene oxide). However, after years of outcry by residents and environmental organizations and repeated local and national press coverage, the Louisiana Department of Health (LADOH) and the LSU Health Sciences Center is currently conducting a first-ever scientific inquiry into cancer cases around the Denka facility.[9]

While a rapidly growing body of research including over 30 published peer-reviewed studies have linked exposures to PM2.5 to increased cases and deaths from COVID-19, there is a dearth of urgently needed studies investigating the contribution of individual and multiple air toxics exposures to excess COVID-19 hospitalizations and deaths, particularly among disparately impacted Black and low-income communities.[10,11]

Removing the only reliable source of data characterizing the frequency and magnitude of exposures to elevated levels of chloroprene concentrations seems especially counterproductive given the in-progress intensive effort to identify cancer victims around the Denka facility and when research is urgently needed to identify and address air pollution exposures and other key environmental, economic, and social factors driving the ever increasing U.S. COVID-19 deaths and disparities.

In summary, the documented failure of the SPod sensors to achieve EPA's stated objectives. Therefore, removing the existing monitors now will most likely:

- Strip the ability of elected officials including members of the 5th Ward School Board, local public health and healthcare providers, and residents to make data-driven decisions and take targeted actions designed to protect the health and safety of individuals and families living in St. John Parish.

- Impede the ability of public health scientists and epidemiologists to identify and address air pollution exposures driving the high rates of asthma, COVID-19 deaths, and other health outcomes.

- Remove the only independent and objective source of information on actual chloroprene concentrations that residents can use to understand and make informed decision about the health risks to themselves and their families and to hold Denka accountable.

In light of the SPod sensor evaluation results and described implications for the health of St. John residents, we respectfully request the continued the operation of all 6 of the existing monitors especially the monitor 5th Ward Elementary School.

Sincerely,

Robert Taylor, Director
Concerned Citizens of St John the Baptist Parish

Vickie Boothe, MPH
Scientific Advisor

[1] Reimann N. *'I'm watching my neighborhood die': St. John residents decry changes to Denka Plant air monitoring*. The *New* Orleans Advocate and The Times Picayune. Published online Feb. 11, 2020.
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[3] Seto E, Carvlin G, Austin E, et al. Next-Generation Community Air Quality Sensors for Identifying Air Pollution Episodes. Int J Environ Res Public Health. 2019;16(18):3268. Published 2019 Sep 5. doi:10.3390/ijerph16183268
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[v] Hammer D. Eyewitness Investigator. *New concerns about chloroprene emissions as EPA monitoring ends in Reserve*. Updated September 4, 2020. [HYPERLINK "http://www.wwltv.com/article/news/investigations/new-concerns-about-chloroprene-emissions-as-epa-monitoring-ends-in-reserve/289-5b9f9215-c4a1-4a69-9b3f-732b224d6447"]
[6] New York Times. Coronavirus in the U.S.: Latest Map and Case Count. Hot spots in the United States. Accessed April 10, 2020.
[7] Louisiana Department of Health. [HYPERLINK "http://ldh.la.gov/Coronavirus/"].
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[9] Russell G. *Denka-area cancer study to start soon; Louisiana health officials lay out blueprint*. The New Orleans Advocate and The Times Picayune. Published online November 24, 2019
[10] Exposure to air pollution and COVID-19 mortality in the United States. Xiao Wu, Rachel C. Nethery, Benjamin M. Sabath, Danielle Braun, Francesca Dominici. medRxiv 2020.04.05.20054502; doi: [HYPERLINK "https://doi.org/10.1101/2020.04.05.20054502"]
[11] Harvard University Bibliography of Related Work. [HYPERLINK "https://projects.iq.harvard.edu/covid-pm/home"] Accessed July 28, 2020.