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STATE OF ILLINOIS
Pollution Control Board

Illinois Pollution Control Board
100 W. Randolph Suite 11-500
Chicago, Illinois 60601

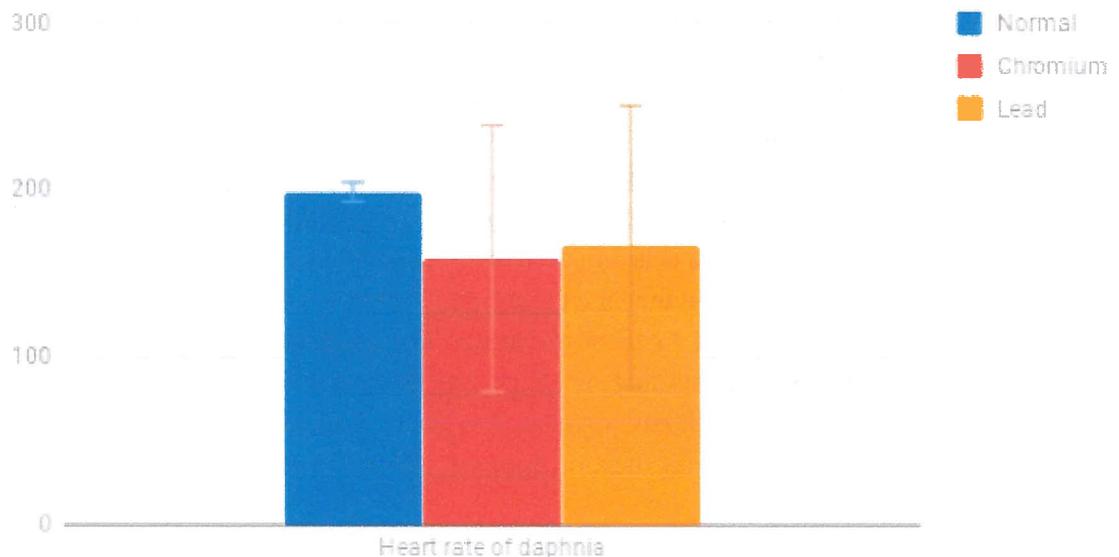
Dear Board Member Zalewski,

Since October 2017, our group and class has done research and carried out experiments that relate to contaminants' effects on environment and organisms. This was a part of our Honors biology class at Niles West High school unit titled environmental racism. Environmental racism is the placement of low-income or minority communities in the proximity of environmentally hazardous or degraded environments, such as toxic waste, pollution, and urban decay. In our experiment, we had grown plants in a hydroponic setting and monitored their growth. The plants used represent the natural environment around the contaminated area. We then added daphnia, a small planktonic crustacean, to the plant's container. These daphnia represent the living organisms such as humans or other animals, that are affected by the contaminants in the area. The daphnia used the algae provided by their environment, (the plant container), as a food source to survive. We then studied the daphnia and how their environment affected them, through the pH and temperature of the water.

After conducting the experiment, and procuring these results, it was obvious to us that long-time exposure to the contaminants in the environment creates problems and ultimately kills the organisms that are contaminated. At the very end of the experiment, we added contaminants such as lead to the plant/daphnia hydroponic ecosystems and measured the results. Our experiment also tested the livelihood of daphnia populations. After adding the levels of lead into the water, the number of daphnia living in the water underneath our plants declined dramatically and upon close examination, their heart rate had spiked up 132%. Unlike the plants, daphnia are very similar to humans in the way that they directly consume their energy and resources from the environment around them, and how they circulate these materials around their bodies. This is why when minorities are wrongfully exposed to higher contaminant levels, it has dramatic effects on them, since we as humans get our resources from the environment.

After concluding these tests, we also did research into places that are exposing people to these harmful contaminants. Through our research, we found that, "... the Associated Press reported that 80 percent of old Illinois quarries that allow the dumping of concrete and other demolition waste have higher-than-acceptable levels of toxins ..." (Sun-Times Editorial Board 2017.). Another thing that we found was that, "The Illinois Pollution Control Board, a five-member panel of politically connected gubernatorial appointees who oversee environmental regulation, sided with quarry operators and against public health in 2012," (Tribune Editorial Board 2017). The fact that these topics are not a thing that concerns major state officials like this board is a problem. Through our data and the research, we found online, it is clear that something needs to be done.

Heart rate of daphnia with contaminants and Heart rate of daphnia without contaminants



High error bars are due to varying times of recordings. Some daphnia underwent cardiac arrest, others suffered from extremely low heartbeats that resulted in death.

To conclude, we find it morally incorrect that you and the Board support the side of Illinois' quarries and are against public health. Companies that pollute the communities of minorities should be further regulated to ensure that dangerous poisonous materials are not exposed to people who are already marginalized. As shown in the experiments we have conducted, contaminants can and will have detrimental effects on living organisms, which is why we believe that it is an important human right to clean these areas up. Additionally, our group just wanted to

inform you that your actions are only harming the environment that we all live in, and no good will come unless something is changed. Thanks for your time.

Sincerely,

Trevor Bell, Christopher Villanueva, Abdur-Rahman Ibrahim

Trevor Bell

Christopher Villanueva

Abdur-Rahman Ibrahim

Article 1: Hawthorne, Michael. "Water testing finds high lead levels in communities across Illinois". ChicagoTribune.com. June 3, 2016.

<http://www.chicagotribune.com/news/watchdog/ct-lead-water-illinois-met-20160512-story.html>.

Accessed April 14, 2018.

Article 2: Sun-Times Editorial Board. "Protect drinking water near quarries before there's a crisis". ChicagoSunTimes.com. November 27, 2017.

<http://elpc.org/issues/chicago-sun-times-editorial-protect-drinking-water-near-quarries-theres-crisis/>.

Accessed April 15, 2018.

Article 3: Tribune Editorial Board. "Drinking water vs. clout: Do these quarries pollute?". ChicagoTribune.com. March 21, 2017.

<http://www.chicagotribune.com/news/opinion/editorials/ct-quarry-landfill-water-pollution-democrat-s-edit-0322-jm-20170321-story.html>.

Accessed April 15, 2018.