



# Environmental Remediation in the Greater Philadelphia Area



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## Introduction

For the month of January 2020, I interned at Synergy Environmental Inc., an environmental consulting and remediation company located in Royersford, Pennsylvania. I worked both in the field and office alongside hydrogeologists and engineers.

## Site Information:

Synergy Environmental Inc.

155 Railroad Plaza 1st floor, Royersford, PA 19468

Supervisor: Ryan Stauffer

Mission and Goals: Synergy Environmental Inc. provides clients with environmental engineering and consulting service when they experience contamination on their properties. They expertise in creating remediation systems for sites with contamination, providing soil/groundwater investigation, and helping with litigation.

## Why Get Synergy Involved:

The issues confronting sites Synergy works with include old deteriorated areas with oil/gasoline tanks on their property, as well as dealing with active oil/gasoline leaks.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	270		ug/l	10	--	10
Benzene	1900		ug/l	5.0	--	10
Toluene	71		ug/l	7.5	--	10
Ethylbenzene	1000		ug/l	5.0	--	10
p/m-Xylene	2700		ug/l	10	--	10
o-Xylene	79		ug/l	10	--	10
Xylenes, Total	2800		ug/l	10	--	10
Isopropylbenzene	78		ug/l	5.0	--	10
1,3,5-Trimethylbenzene	580		ug/l	25	--	10
1,2,4-Trimethylbenzene	2200	E	ug/l	25	--	10
Naphthalene	180		ug/l	25	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	83		70-130
Dibromofluoromethane	90		70-130

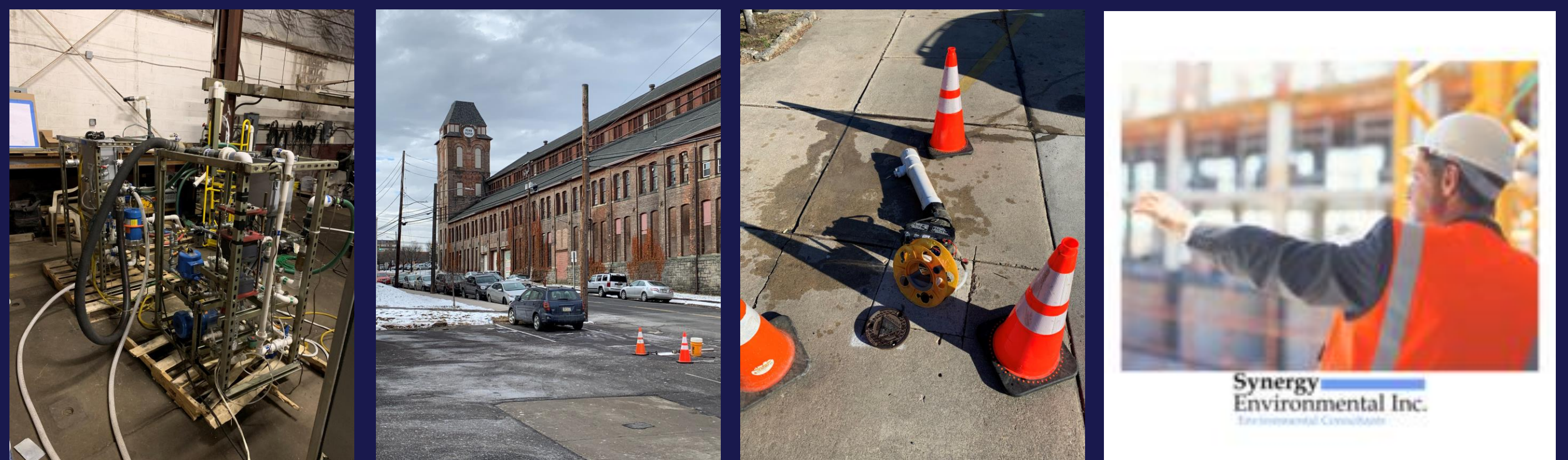
This image is of a lab report received from Alpha Analytics. It shows the amount of certain volatile organic compounds from water samples I took with hydrogeologists at a site.

## Job Functions:

While in the field, I was responsible for assisting hydrogeologists in ground water sampling. This involved testing containment wells, taking water samples, and pumping the groundwater through granulated carbon to remove organic compounds harmful to the environment. In the office, I was responsible for updating lab analytics in Microsoft Excel and creating graphical representations of the organic volatiles in the soil. I also organized PADEP records and visited the PADEP office

## Impact Of My Work:

The remediation done by Synergy allows for the cleaning of volatile compounds from soil and groundwater environments. This has a widespread impact as groundwater is connected to local watersheds. Their work reduces environmental impact from old buildings, gas stations, factories, and other businesses who may experience an oil/gasoline leak on their property. Their work and evaluation of properties, as well as their association with the DEP, decides if properties can be bought or sold, and if building can occur on these properties. Their remediation systems can keep businesses functioning despite having contamination on their premises. Their goal is to limit environmental destruction through anthropogenic change such as oil/gasoline leaks.



Pictured (left to right): Remediation system used on a Carnival Cruise ship, groundwater sampling sight in Scranton,PA (Dunder Mifflin), groundwater filtration through granulated carbon sinks.

## My Takeaways:

Going into this experience, I was unsure of what to expect. As a bioengineering major, I thought that I would not find interest working for an environmental firm. However, I was pleasantly surprised by this opportunity, and I learned a lot about an area of the environmental fight that I did not have previous knowledge in. Seeing the entire process of what Synergy does showed me how the best teams have a lot of moving parts. I saw how this company communicates with their clients, how they associate with governmental agencies, and how the engineers collaborate with the geologists and lab that analyzes their samples. I also learned a lot about how remediation systems work, as well as the impact they can have on areas with contamination.

## Future Work:

As a bioengineer, my future holds a different field of work, and I do not see myself returning to the environmental industry. However, I will take sustainability and environmental awareness with me wherever I go due to this experience and SGC. For future interns, I would recommend Synergy for their great employees and work.



## Acknowledgments:

I would like to personally thank my supervisor, Ryan Stauffer, for this eye-opening and unique internship experience. I would also like to thank my Professors Dr. Holtz and Dr. Merck for their continual dedication to Science and Global Change and for creating an environment conducive of learning.

