



December 16, 2019

Mr. Andrew MacKnight, Trustee
Ian D MacKnight Family Trust
4089 Red Bud Circle
Doylestown, PA 18902

Re: Arbonite
3826 Old Easton Road
Doylestown, PA 19382

November 2019 Sample Results
Easton Road PFC HSCA Site

Dear Mr. MacKnight:

Between November 11, 2019 and November 15, 2019, the Department of Environmental Protection's (DEP's) contractor, Tetra Tech, performed soil, groundwater, and surface water sampling at 3826 Old Easton Road. All samples collected from the property were analyzed for Perfluorooctanesulfonate (PFOS), Perfluorooctanoic acid (PFOA), and Volatile Organic Compounds (VOCs). Enclosed please find a copy of the analytical results, a figure showing the locations of the soil, groundwater, and surface water samples, and tables summarizing the results.

Soil borings were advanced at 33 locations to refusal. PFOS was detected in 13 of the soil samples, and PFOA was detected in 16 of the soil samples. VOCs were detected in 6 of the soil samples. Sample locations SB-13 and SB-29 exceeded the Medium Specific Concentrations (MSCs) established under the Pennsylvania Land Recycling and Environmental Remediation Standards Act for Trichloroethene (TCE) and for Vinyl Chloride, respectively. These results also exceed DEP's Soil Vapor Screening Value.

Temporary wells were installed in 8 of the soil boring locations where groundwater was encountered. Samples were collected from all 8 temporary well locations as well as from 2 sump pits located behind Building 2. PFOS and PFOA were detected in all 8 of the temporary wells and both sump pit samples. The United States Environmental Protection Agency (USEPA) established a Lifetime Health Advisory Level (HAL) of 70 nanograms per liter (parts per trillion) for the combined concentration of PFOS and PFOA in drinking water. The results indicate that the combined concentrations of PFOS and PFOA in 2 of the temporary wells exceed the HAL. Sample location TW-04 exceeded the MCL for Vinyl Chloride; TW-6 exceeded the MCL for TCE, and a sample collected from the sump pit located behind Building 2 exceeded the MCL for Methyl Ethyl Ketone (MEK).

Ian D MacKnight Family
Trust

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December 16, 2019

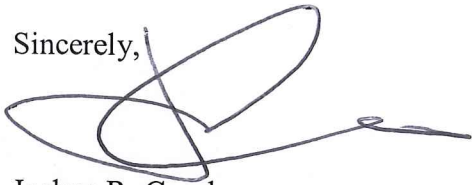
Surface water samples were collected from 9 locations. PFOS and PFOA were detected in all 9 samples collected. The results indicate that the combined concentration of PFOS and PFOA detected in 4 of the surface water samples exceeds the HAL. Surface water samples from 8 of the locations also exceed the USEPA Chapter 93 Water Quality Standards for Vinyl Chloride, Tetrachloroethene (PCE), TCE and 1,2-Dichloroethane.

DEP will provide the raw analytical data electronically in a follow up email correspondence.

DEP is in the process of evaluating the results and determining next steps.

Please feel free to contact me by e-mail at jcrooks@pa.gov or by telephone at 484.250.5784 with any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Joshua R. Crooks". The signature is stylized with large loops and a long horizontal tail.

Joshua R. Crooks
Environmental Protection Specialist
Environmental Cleanup and Brownfields

Enclosures

cc: Mr. Charles McCauley III, Esq.
Mr. Luca Valentine, Arbonite
Bucks County Health Department
Doylestown Township
Mr. Magee
Ms. McClennen
Mr. Glass, Esq.
File

SOIL SAMPLE ANALYTICAL RESULTS

PFOS/PFOA

Arbonite

3826 Old Easton Road

Doylestown, PA

Easton Road PFC HSCA Site

Bucks County, PA

Sample ID	Date Collected	Depth (ft)	PFOS (mg/kg)	PFOA (mg/kg)	Moisture (%)
SB-01_0515	11/12/2019	0.5-1.5	0.00067 J	0.0011	15.2
SB-02_0515	11/11/2019	0.5-1.5	ND	0.00049 J	13.7
SB-03_0515	11/11/2019	0.5-1.5	0.00029 J	0.00058 J	16.4
SB-04_0515	11/11/2019	0.5-1.5	0.00098	0.0012	19.7
SB-05_0515	1/11/2019	0.5-1.5	0.00054 J	0.00097	20
SB-06_0010	11/11/2019	0-1.0	0.00034 J	0.00033 J	17.1
SB-07_0515	11/11/2019	0.5-1.5	0.00046 J	0.0012	21.8
SB-08_0010	11/11/2019	0-1.0	0.0006 J	0.0022	25.7
SB-09_0515	11/11/2019	0.5-1.5	0.00046 J	0.0012	19.8
SB-10_1525	11/11/2019	1.5-2.5	0.00038 J	0.00051 J	34.3
SB-12_0515	11/12/2019	0.5-1.5	0.0013	0.00045 J	19.2
SB-13_0515	11/12/2019	0.5-1.5	0.005	0.0013	21.2
SB-15_5565	11/12/2019	5.5-6.5	ND	0.00044 J	17.6
SS-01	11/14/2019	0-0.5	0.00053 J	0.0018	55.7
SS-02	11/14/2019	0-0.5	0.00093	0.0016	34.9
SB_DUP-111119-P	11/11/2019	0.5-1.6	ND	0.0005 J	15.2

ND - less than laboratory method detection limit

mg/kg - milligrams per kilogram

PFOS - Perfluoro-octanesulfonate

PFOA - Perfluorooctanoic Acid

J - estimated value greater than or equal to the method detection limit (MDL or DL) and less than the Limit of Quantitation (LOQ or RL)

SB - soil boring

SURFACE WATER SAMPLE ANALYTICAL RESULTS

PFOS/PFOA

Arbonite
 3826 Old Easton Road
 Doylestown, PA
 Easton Road PFC HSCA Site
 Bucks County, PA

Sample ID	Date Collected	PFOS (ng/L)	PFOA (ng/L)	Combined Concentration (ng/L)
HAL (ng/L)		70	70	70
ARB-SW-01	11/14/2019	45	33	78
ARB-SW-02	11/14/2019	38	25	63
ARB-SW-03	11/14/2019	26	23	49
ARB-SW-04	11/14/2019	140	35	175
ARB-SW-05	11/14/2019	20	21	41
ARB-SW-06	11/14/2019	71	15	86
ARB-SW-07	11/14/2019	5.5	12	17.5
ARB-SW-08	11/14/2019	7	9.9	16.9
ARB-SW-09	11/14/2019	8.4	220	228.4

ng/L - nanograms per liter
 PFOS - Perfluoro-octanesulfonate
 PFOA - Perfluorooctanoic Acid
 HAL - Health Advisory Level
70 - Exceedance of the HAL

GROUNDWATER ANALYTICAL RESULTS

PFOS/PFOA

Arbonite

3826 Old Easton Road

Doylestown, PA

Easton Road PFC HSCA Site

Bucks County, PA

Sample ID	Date Collected	PFOS (ng/L)	PFOA (ng/L)	Combined Concentration (ng/L)
HAL (ng/L)		70	70	70
TW-01	11/12/2019	2.5	27	29.5
TW-02	11/12/2019	6	14	20
TW-03	11/13/2019	9.4	14	23.4
TW-04	11/13/2019	23	87	110
TW-05	11/13/2019	4.4	26	30.4
TW-06	11/14/2019	5.3	36	41.3
TW-07	11/14/2019	6.4	190	196.4
TW-08	11/14/2019	5.3	44	49.3
Sump A	11/14/2019	23	37	60
Sump B	11/14/2019	15	50	65

ng/L - nanograms per liter
 PFOS - Perfluoro-octanesulfonate
 PFOA - Perfluorooctanoic Acid
 HAL - Health Advisory Level
70 - Exceedance of the HAL
 TW - temporary well

Soil Sample Analytical Results
 Volatile Organic Compounds

Arbonite
 3826 Old Easton Road
 Doylestown, PA 19382
 Easton Road PFC HSCA Site
 Bucks County, PA

Sample ID Date Collected Depth (ft)	Act 2 MSC (ug/kg)	DEP Soil Vapor Screening Value (ug/kg)	SB-13_0515 11/12/2019 0.5-1.5	SB-14_4555 11/12/2019 4.5-5.5	SB-17_2535 11/12/2019 2.5-3.5	SB-19_3040 11/12/2019 3.0-4.0	SB-24_3040 11/13/2019 3.0-4.0	SB-29_2030 11/13/2019 2.0-3.0
VINYL CHLORIDE	200	27	146 ug/kg	31.5* ug/kg				1910* ug/kg
TOLUENE	100000	44000						66.2 ug/kg
NAPHTHALENE	10000	25000	90.2 ug/kg				101 ug/kg	
BENZENE	500	130						
n-Butylbenzene								
cis-1,2-Dichloroethene	7000		82.5 ug/kg	89.5 ug/kg	778 ug/kg	58.4 ug/kg	60.8 ug/kg	6970 ug/kg
Ethylbenzene	70000	46000	61.9 ug/kg					
TRANS-1,2-DICHLOROETHENE	500	2300			65.1 ug/kg			
TRICHLOROETHENE	500	170	2990*			213* ug/kg	603* ug/kg	

MSC - Medium Specific Concentrations

ug/kg - microgram per kilogram

2990 - Exceedance of Act 2 MSC

* - Exceedance of DEP Soil Vapor Screening Value

**Groundwater Sample Analytical Results
Volatile Organic Compounds**

Arbonite
3826 Old Easton Road
Doylestown, PA 19382
Easton Road PFC HSCA Site
Bucks County, PA

Sample ID Date Collected	MCL (ug/L)	TW-02 11/12/2019	TW-03 11/13/2019	TW-04 11/13/2019	TW-05 11/13/2019	TW-06 11/14/2019	TW-07 11/14/2019	Sump B 11/14/2019	Sump A 11/14/2019
VINYL CHLORIDE	2			4.4 ug/L					1.8 ug/L
CARBON DISULFIDE	1500			1.1 ug/L	1 ug/L		2 ug/L		
CHLOROBENZENE	100								
1,1-DICHLOROETHENE	7		1.6 ug/L						
cis-1,2-Dichloroethene	70			26.3 ug/L	1.2 ug/L		1.7 ug/L		
Acetone	38000								
TETRACHLOROETHENE	5								
1,1,1-Trichloroethane	200		1.4 ug/L						
2-Butanone (MEK)	4000		1.5 ug/L						
TRICHLOROETHENE	5		0.52 ug/L	4.4 ug/L	6.4 ug/L	2.5 ug/L	3 ug/L	13.8 ug/L	12100 ug/L

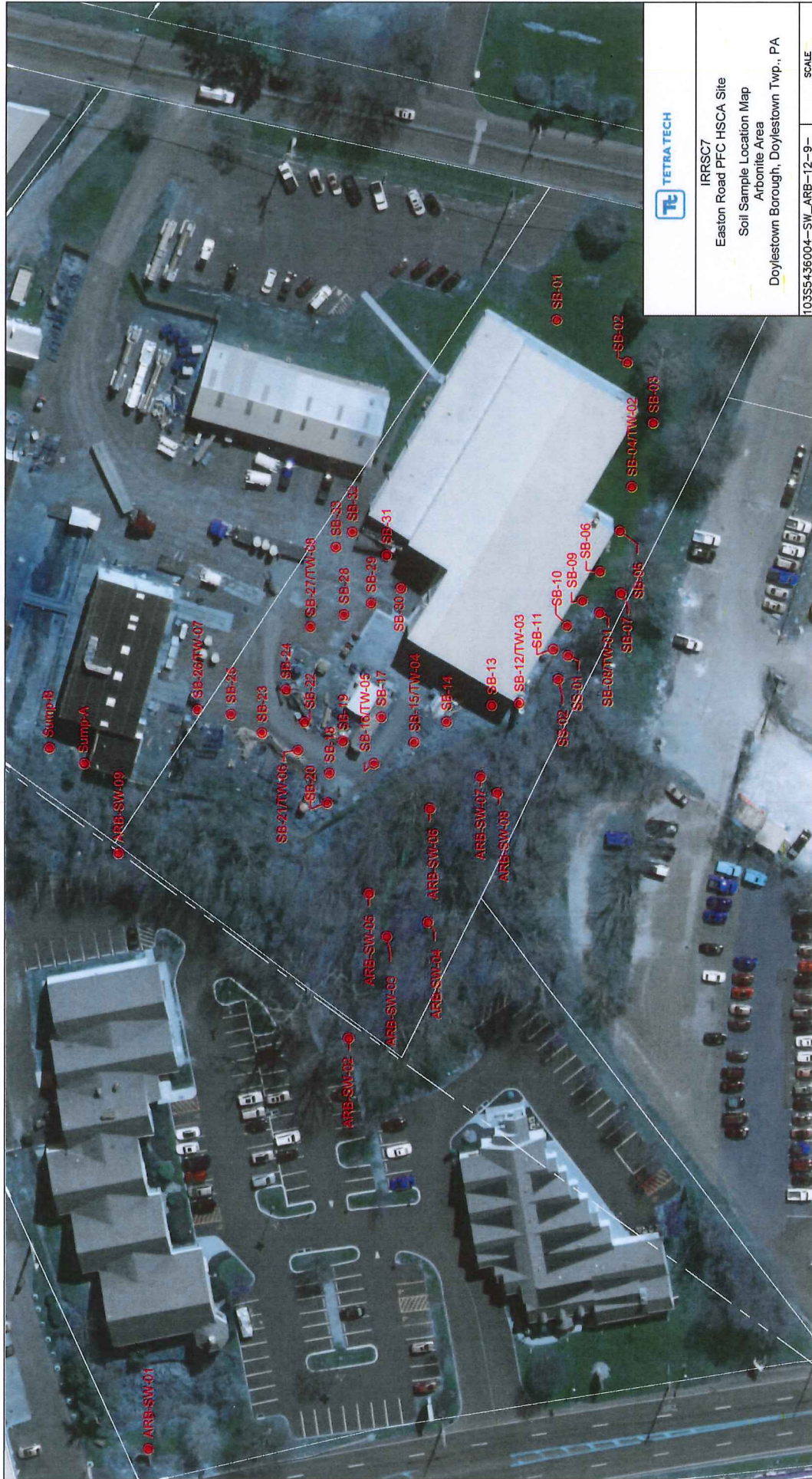
ug/L - microgram per liter
TW - temporary well
MCL - Maximum Contaminant Level
6.4 - Exceedance of MCL

Surface Water Sample Analytical Results
 Volatile Organic Compounds

Arbonite
 3826 Old Easton Road
 Doylestown, PA 19382
 Easton Road PFC HSCA Site
 Bucks County, PA

Sample ID	Date Collected	Human Health Criteria (ug/L)	ARB-SW-09	ARB-SW-08	ARB-SW-07	ARB-SW-06	ARB-SW-05	ARB-SW-04	ARB-SW-03	ARB-SW-02	ARB-SW-01
VINYL CHLORIDE		0.025						3.8 ug/L			
1,1,2-TRICHLOROETHANE		0.59						2.8 ug/L			
CHLOROBENZENE		130							2.6 ug/L		
1,1-DICHLOROETHENE		0.38		5.1 ug/L	4.2 ug/L	3.5 ug/L	4.9 ug/L	36.2 ug/L	6.2 ug/L	4.1 ug/L	1.6 ug/L
cis-1,2-Dichloroethene		12		0.6 ug/L	0.52 ug/L	1.1 ug/L	1.4 ug/L	8.4 ug/L	1.1 ug/L	0.81 ug/L	
TETRACHLOROETHENE		0.69		8 ug/L	4.5 ug/L	3.2 ug/L	4.9 ug/L	29.8 ug/L	6.4 ug/L	5.1 ug/L	2.1 ug/L
1,1,1-Trichloroethane				5.3 ug/L	3.2 ug/L	1.9 ug/L	2.7 ug/L	9.7 ug/L	2.8 ug/L	1.8 ug/L	0.81 ug/L
1,1-Dichloroethane							0.56 ug/L	5.4 ug/L			
TRICHLOROETHENE		2.5			2.4 ug/L	5 ug/L	3.4 ug/L	8.4 ug/L	2.6 ug/L	1.7 ug/L	0.77 ug/L
1,2-Dichloroethane		0.38						0.66 ug/L			

ug/L - microgram per liter
 5.1 - Exceedance of Chapter 93 Water Quality Standards for Human Health Criteria



TETRA TECH	
IRRSC7 Easton Road PPC HSCA Site Soil Sample Location Map Arbonite Area Doylestown Borough, Doylestown Twp., PA	
10355436004-SW_ARB-12-9- 2019.dwg FIGURE NUMBER	1 REV B DATE 12/9/19
SCALE AS NOTED	

MAP SOURCES:
 PASDA, AND BUCKS COUNTY GIS