

# **CHARACTER OF WASTES IN THE TREMONT CITY BARREL FILL**

**By**

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**for**

**People for Safe Water**

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This report is intended to inform the public about the contents of barrels at the Tremont City Barrel Fill, based on data from the site's Remedial Investigation. This report provides evidence of why all local stakeholders in Clark County oppose EPA's plan to rebury an estimated 1.1 million gallons of untreated chemical wastes at the site.

## ***Character of Wastes in the Tremont City Barrel Fill***

*Peter Townsend, MS., PG.* Report to People for Safe Water, May 1, 2015

### **Executive Summary**

This report describes the contents of the barrels at the Tremont City Barrel Fill based on data from the Remedial Investigation of the site, published in 2006. Given the number and volume of chemicals identified as hazardous waste, the site's proximity to the Springfield Wellfield, and the site's location relative to the sole source aquifer for 82,000 people, the report concludes that only permanent removal of all hazardous wastes will be protective of human health and the environment.

The site has 51,500 barrels (each barrel is 55 gallons) of waste buried in unlined holes. About 90% of the barrels contain complex mixtures of chemical wastes, which include 1) pesticides so dangerous their use has been banned in the U.S.; 2) chemicals whose concentrations exceed EPA's allowable drinking water standards by hundreds and even millions of times, and 3) chemicals for which no acceptable level of concentration in drinking water has been established. About 10% of the barrels contain material classified as soap, shampoo, toothpaste, and detergent.

Current US EPA regulations prohibit burying liquid hazardous waste. Therefore these will be removed from the site for treatment at an approved facility. About 40% of the barrels (more than 1.1 million gallons) contain solid and semi-solid wastes which will, under US EPA's current site remediation plan, be reburied onsite. The wastes will be reburied in a newly constructed landfill with a double liner at the base and a geomembrane top covered by clay-rich soil.

Will this safely contain the hazardous wastes forever? US EPA itself has described lined and capped landfills as "First, even the best liner and leachate collection system will ultimately fail due to natural deterioration...." "...[T]he bottom layer of the landfill will deteriorate over time and, consequently, will not prevent leachate transport out of the unit."<sup>1</sup> In conclusion, if hazardous waste is reburied on site, the landfill will do nothing to decontaminate the waste. Eventually the landfill will fail and contaminants will leach into the area's water-rich environment.

The full report is available at [www.peopleforsafewater.org](http://www.peopleforsafewater.org).

## Introduction

Records indicate that the Tremont City Barrel Fill (TCBF) contains 51,500 55-gallon steel drums filled with waste, much of it hazardous. The barrels of waste were placed in the ground in the late 1970's, as industry understood Superfund legislation would soon be enacted. Total quantity of containerized waste is about 2.8 million gallons. Additionally over 300,000 gallons of uncontained waste were dumped directly into the ground in the 50 "waste cells" (unlined pits) in which the barrels were buried. After the "cells" were filled with barrels they were covered with soil. Total volume of waste at TCBF is estimated at over 3 million gallons.

According to US EPA, Table 1 is a summary of the general classifications of materials that were buried at the site. Table 1 shows that 90% of the barrels are filled with "paint sludge, polyol, latex (sludge), glues, resins, asbestos, and still bottoms." "Still bottoms" are the chemical stew that is left in the bottom of organic chemical distillation vats. Chemical tests of 50 barrels indicate most barrels contain complex mixtures of chemicals.

**Table 1: Categories of Containerized and Uncontainerized Waste**

Waste Description	% of Barrels Containing This Waste
"Paint Sludge"	31
"Polyol"	19
"Latex or Latex Sludge"	15
Glues, Adhesives, Rubber Cement	15
Soap, Shampoo, Detergent, Toothpaste	10
Resins	5
Still Bottoms	2
Asbestos or Asbestos Slurry	0.8

Bulk Waste Description	% of Volume
Bulk Sludge	69
Latex Glue, Asbestos & Water	20
Still Bottoms	8
Latex Glue	1
Bulk Sludge and Still Bottoms	0.7

From: US EPA Tremont City Barrel Fill Site, Clark County, Ohio RECORD OF DECISION pdf page 78.

Table 1 also shows that about 10% of the materials in the barrels are soap, shampoo, detergent, and toothpaste. Those are normal household items and, if the barrels do not contain

any additional hazardous chemicals, would not be classified by EPA as hazardous waste. Additionally, 100% of the estimated 300,000 gallons of waste dumped into the cells are a similar mixture of chemicals, now intimately mixed with the soil. Under the current US EPA clean-up plan, soil surrounding the barrels will be reburied on-site.

### **Current US EPA clean-up plan, known as Plan 9a**

US EPA in Chicago has described their current clean-up plan in an elaborate document known as a RECORD OF DECISION (ROD). All clean-up costs will be covered by companies that put wastes in the Barrel Fill. Briefly, US EPA plans to remove the barrels from the ground, assuming they are intact after 35 years. Liquid wastes will be poured off and shipped to a chemical waste treatment facility for neutralization. Contents that remain in the barrels will be removed from the barrels and reburied as uncontained wastes; all barrels will be crushed and reburied; and contaminated soil will be reburied on-site in a newly constructed landfill with a double liner at the base and a geomembrane top covered by clay-rich soil.

Will this remedy contain the chemical wastes? US EPA itself has described lined and capped landfills as "...even the best liner and leachate collection system will ultimately fail due to natural deterioration, and recent improvements in MSWLF [municipal solid waste land fill] containment technologies suggest that releases may be delayed by many decades at some landfills." "Once the unit [landfill] is closed, the bottom layer of the landfill will deteriorate over time and, consequently, will not prevent leachate transport out of the unit."<sup>1</sup> Lee and others state: "landfills only postpone when groundwater pollution will occur." "...[T]hese wastes...will be a threat, effectively, forever. Obviously the liners under the landfill will not be effective in preventing leachate from passing through them for as long as the wastes are a threat."<sup>2</sup>

### **Fifty barrels sampled in 2003-2004 during Remedial Investigation**

During the site Remedial Investigation soil was removed from the tops of five cells to investigate the condition of the barrels and to obtain chemical samples. A total of fifty barrels were sampled, which is less than 1/10 of 1% of the barrels buried at the site. The small sample size means that statistically each barrel sampled serves as a proxy for over 1000 barrels.

### **Character of nine barrels in the sample**

Table 2 contains results of chemical analyses of nine barrels, representative of over 9000 barrels. Each of the barrels contains material classified as semi-solid, solid, or in one case solids+liquid. The table includes dozens of chemicals, all of which are to be reburied uncontained in the on-site landfill. Chemicals detected in the barrels are listed in the left-hand column, and concentrations that were detected are listed in the adjacent column. Some of the concentrations were estimated by the laboratory; indications of estimated values are omitted

for simplicity. Also omitted for simplicity are all metals and all chemicals with concentrations below 100 parts per billion.

The third column is labeled MCL, the Maximum Contaminant Level of a given chemical that is allowed by the US EPA in drinking water. Should these chemicals appear in the groundwater, cleanup would be dictated by comparing their concentration in the groundwater to the MCL for that chemical. Many chemicals have not received enough study by US EPA to assign a Maximum Contaminant Level. Those chemicals are indicated with an X in the right hand column. This does not mean the chemical is not dangerous. For example, most of the pesticides in barrels on-site are considered so hazardous they are illegal to use in the United States, but very few pesticides have an established MCL.

### **What stays? What goes?**

Table 3 provides insight into the liquid, semi-solid, or solid contents of the fifty barrels that were sampled. Over the past thirty-five years some mixtures of chemicals in the barrels have remained liquid, others have become solid. Contents of a number of barrels have formed chemical links that have produced a semi-solid gel-like material. Table 3 shows that, of the fifty barrels sampled, 60% (30 barrels) were classified as containing liquid (many with modifiers like viscous); 26% (13 barrels) were classified as containing semi-solid material; 10% (5 barrels) were classified as containing solid material; and 4% (2 barrels) were classified as containing solids with liquid.

Under the current US EPA cleanup plan, each barrel will be opened and tipped up to see if any material pours out. Material that pours out of each barrel will then be tested to determine if it is a liquid or a solid. That determination will be made using the US EPA approved paint filter test. The paint filter test uses a paint filter identical to one available at any good paint store. The filter is a screen with 60 openings per inch (a 60 mesh screen). Figure 1 is an image of 60 mesh paint filter screen, with a human hand for scale. Figure 2 is an image of 60 mesh paint filter screen magnified with a penny for scale. Find a penny with a “D” (for the Denver mint) to see the approximate size of the openings. Note that the mesh openings are only about ½ the size of the penny’s “D”. Material from each barrel will be placed in a 60 mesh paint filter. If the contents pass through the filter, it will be declared a liquid and will be removed from the site. If the material does not pass through the filter it will be declared a “solid” and will be reburied on-site.



Figure 1. Paint filter screen behind and in front of a hand. The screen has 60 openings/inch.

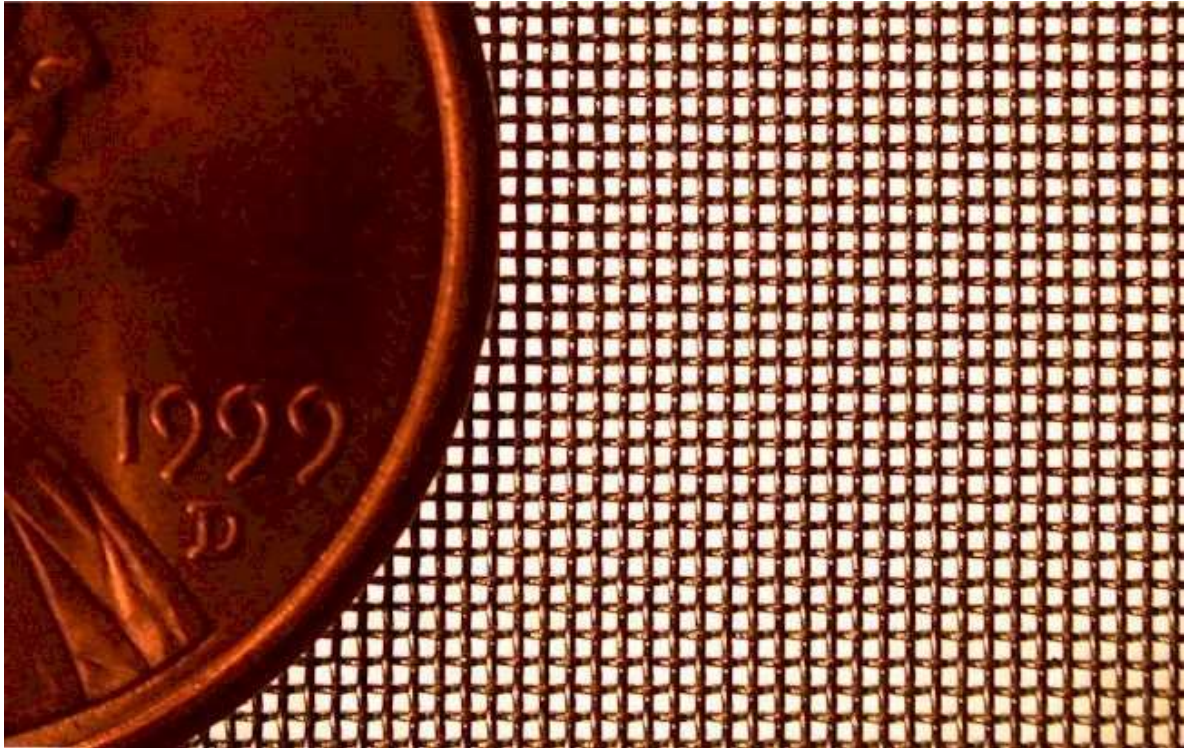


Figure 2. 60 mesh paint filter screen magnified with a penny for scale.

Current US EPA regulations prohibit burying liquid hazardous waste. Therefore all liquid wastes will be removed from the site for treatment at an approved facility. However, current plans call for reburial of all non-liquid hazardous wastes on-site. That means about 40% of the barrels (those with solid and semi-solid wastes) will, under the current site remediation plan favored by US EPA, be reburied onsite. Approximately 1.13 million gallons of waste will be removed from the barrels and reburied on-site. Some barrel contents shown as viscous or thick liquid may be determined to be “solid” by the paint filter test and reburied on-site. US EPA also plans to rebury all of the empty barrels and the soil contaminated by the 300,000 gallons of bulk waste dumped around the barrels.

What will happen to the barrels labeled “semi-solid” whose contents will not pass through the paint filter? Semi-solids will be declared “solid” and reburied on-site, yet they are hardly “solid” in the way most people think. Anyone standing on semi-solid waste would likely sink to the bottom of the barrel, comparable to standing on a barrel full of Jello. Approximately 13,390 barrels are projected to contain Jello-like semi-solid waste that is currently planned to be reburied at the Barrel Fill site.

#### **List of all chemicals identified in fifty barrels**

For a complete list of contents of the fifty barrels that were chemically analyzed, see Table 4, available at People for Safe Water’s web site: [www.peopleforsafewater.org](http://www.peopleforsafewater.org) . EPA and many other government agencies (e.g. OSHA, FDA, DOA, ATSDR) have detailed classifications of many of these chemicals.

#### **Conclusion**

In my professional opinion chemicals identified as hazardous are likely to eventually impact the Springfield Wellfield, the Sole Source Aquifer, and private wells in the vicinity of the site. I strongly recommend removal of all hazardous wastes from the site.

#### **References**

1. US EPA “Solid Waste Disposal Facility Criteria; Proposed Rule,” Federal Register 53(168):33314-33422, 40 CFR Parts 257 and 258, US EPA, Washington, DC, August 30 (1988).
2. Lee, G. F., and Jones-Lee, A., “Superfund Site Remediation by On-site RCRA Landfills: Inadequacies in Providing Groundwater Quality Protection.” Proceedings of the Environmental Industry Association’s Superfund/Hazwaste Management West Conference, Las Vegas, NV, pp. 311-329, May (1996).

## Table 2

**All Table 2 data is from Appendix H, Tremont City Barrel Fill Remedial Investigation Report, 2006.**

**Contents of Barrel HDR007 (elastic solid)** from pdf pages 1839-1841

**Contents of Barrel HDR015 (semi-solid)** from pdf pages 1836-1838

**Contents of Barrel HDR019 (semi-solid)** from pdf pages 1836-1838

**Contents of Barrel HDR024 (solids, liquid)** from pdf pages 1842-1844

**Contents of Barrel HDR033 (semi-solid)** from pdf pages 1836-1838

**Contents of Barrel HDR037 (semi-solid)** from pdf pages 1836-1838

**Contents of Barrel HDR040 (semi-solid)** from pdf pages 1836-1838

**Contents of Barrel HDR041 (semi-solid)** from pdf pages 1836-1838

**Contents of Barrel HDR044 (semi-solid)** from pdf pages 1836-1838



**Table 2 - Barrel HDR007 (contents listed as elastic solid) Cell C-3**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
4,4-DDT	1,300		X
Aldrin	990		X
Alpha-chloridane	680	2	
Hexachlorocyclohexane (aka delta-BHC)	220		X
Endosulfan I	1,900		X
Endrin	660	2	
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
2-methylnaphthalene	38,000		X
Bis(2-ethylhexyl)phthalate (aka di(2-ethylhexyl)phe...)	41,000	6	
Butyl benzylphthalate	22,000		X
Isophorone (aka 3,5,5-Trimethyl-2-cyclohexene-1)	82,000		X
Naphthalene (aka Bicyclo[4.4.0]deca-1,3,5,7,9-pentene)	60,000		X
N-nitrosodiphenylamine	350,000		X
Phenanthrene	2,300		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
1,1,1 trichloroethane	320,000	200	
1,1 dichloroethane	34,000	in California 5	X
1,3 dichlorobenzene	28,000		X
1,4 dichlorobenzene (aka p-dichlorobenzene)	10,000	75	
2-butanone (aka methyl ethyl ketone)	220,000		X
4-methyl-2-pentanone	130,000		x
Benzene	9,100	5	
Ethylbenzene	630,000	700	
Isopropylbenzene	20,000		X
Methylene chloride	710,000	5	
Toluene	1,800,000	1000	
Trichloroethene (aka trichloroethylene, aka tricky)	39,000	5	
Trichlorofluoromethane (aka CFC-11)	44,000		X
Xylene	730,000	10,000	

**Table 2 - Barrel HDR015 (contents listed as semi-solid) Cell B-7**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
Dieldrin	200		X
Endosulfan II	180		X
Endrin ketone	300		X
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
2-methylnaphthalene	190,000		X
Acetophenone	250,000		X
Bis(2-ethylhexyl)phthalate (aka di(2-ethylhexyl)ph...)	57,000	6	
Butyl benzylphthalate	3,900,000		X
Dimethyl phthalate	1,700,000		X
Isophorone (aka 3,5,5-Trimethyl-2-cyclohexene-1)	190,000		X
Naphthalene (aka Bicyclo[4.4.0]deca-1,3,5,7,9-pentene)	1,600,000		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
1,1,1 trichloroethane	18,000	200	
1,1 dichloroethene (aka 1,1-dichloroethylene)	9,000	7	
1,2,4 trichlorobenzene	140,000	70	
1,2 dichlorobenzene (aka o-dichlorobenzene)	8,000	600	
1,3 dichlorobenzene	10,000		X
1,4 dichlorobenzene (aka p-dichlorobenzene)	10,000	75	
2-butanone (aka methyl ethyl ketone)	3,700,000		X
4-methyl-2-pentanone	2,500,000		X
Acetone	210,000		X
Benzene	7,400	5	
Carbon tetrachloride	7,000	5	
Chlorobenzene	7,100	100	
Cyclohexane	73,000		X
Ethylbenzene	8,900,000	700	
Isopropylbenzene	260,000		X
Methyl acetate	62,000		X
Methyl cyclohexane	66,000		X
Methylene chloride	45,000	5	
Styrene	3,800,000	100	
Toluene	2,200,000	1000	
Trichloroethene (aka trichloroethylene, aka tricky)	9,200	5	
Trichlorofluoromethane (aka CFC-11)	26,000		X
Trifluorotrichloroethane (aka Freon R 113)	12,000		X
Xylene	28,000,000	10,000	

**Table 2 - Barrel HDR019 (contents listed as semi-solid) Cell B-7**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
2-methylnaphthalene	130,000		X
Biphenyl (aka PCB)	94,000	0.5	
Bis(2-ethylhexyl)phthalate (aka di(2-ethylhexyl)phe...)	20,000	6	
Dibenzofuran	41,000		X
Fluorine	100,000		X
Naphthalene (aka Bicyclo[4.4.0]deca-1,3,5,7,9-pentene)	5,200		X
Phenanthrene	81,000		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
1,1,1 trichloroethane	1,200	200	
1,1 dichloroethane	1,400	in California 5	X
1,2,4 trichlorobenzene	1,400	70	
1,2 dichloropropane	5,600	5	X
2-butanone (aka methyl ethyl ketone)	9,400		X
4-methyl-2-pentanone	9,200		X
Benzene	1,100	5	
Cyclohexane	1,500		X
Dichlorodifluoromethane (aka CFC-12)	24,000		X
Ethylbenzene	160,000	700	
Isopropylbenzene	2,900		X
Methyl cyclohexane	4,200		X
Methylene chloride	130,000	5	
Styrene	52,000	100	
Toluene	120,000	1000	
Trichlorofluoromethane (aka CFC-11)	40,000		X
Xylene	400,000	10,000	

**Table 2 - Barrel HDR024 (contents listed as solids, liquid) Cell D-7**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
(micrograms/kilogram aka parts/billion)			
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
(micrograms/kilogram aka parts/billion)			
Phenol	58,000		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
(micrograms/kilogram aka parts/billion)			
1,1 dichloroethane	16,000	in California 5	X
2-butanone (aka methyl ethyl ketone)	21,000		X
Ethylbenzene	380,000	700	
Methyl cyclohexane	14,000		X
Methylene chloride	98,000	5	
Toluene	970,000	1000	
Trichlorofluoromethane (aka CFC-11)	14,000		X
Xylene	960,000	10,000	

**Table 2 - Barrel HDR033 (contents listed as semi-solid) Cell A-8**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
(micrograms/kilogram aka parts/billion)			
4,4 DDT	510		X
Aldrin	180		X
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
(micrograms/kilogram aka parts/billion)			
2-methylnaphthalene	33,000		X
Biphenol	24,000		X
Bis(2-ethylhexyl)phthalate (aka di(2-ethylhexyl)phe...)	320,000	6	
Chrysene (aka benzo(a)phenanthrene)	24,000		X
di-n-octyl phthalate	30,000		X
Fluorine	34,000		X
Naphthalene (aka Bicyclo[4.4.0]deca-1,3,5,7,9-pentene)	28,000		X
Phenanthrene	75,000		X
Phenol	99,000		X
Pyrene	50,000		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
(micrograms/kilogram aka parts/billion)			
1,1,1 trichloroethane	240,000	200	
1,1 dichloroethane	8100	in California 5	X
Benzene	2,800	5	
Chloroform (aka trichloromethane)	6,300		X
Ethylbenzene	160,000	700	
Chlorobenzene	7,100	100	
Isopropylbenzene	5,100		X
Methyl cyclohexane	4,000		X
Methylene chloride	36,000	5	
Tetrachloroethene (aka tetrachloroethylene)	320,000	5	
Toluene	450,000	1000	
Trichloroethene (aka trichloroethylene, aka tricky)	7,800	5	
Trichlorofluoromethane (aka CFC-11)	6,000		X
Xylene	370,000	10,000	

**Table 2 - Barrel HDR037 (contents listed as semi-solid) Cell A-8**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
Lindane	51,000	0.2	
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
2-methylnaphthalene	33,000		X
Actophenone	82,000		X
Butyl benzylphthalate	49,000		X
Hexachloroethane	65,000		X
Naphthalene (aka Bicyclo[4.4.0]deca-1,3,5,7,9-pentene)	140000		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
1,1,1 trichloroethane	11,000,000	200	
1,1,2 trichloroethane	130,000	5	
1,1 dichloroethane	30,000	in California 5	X
1,1 dichloroethene (aka 1,1 dichloroethylene)	19,000	7	X
2-butanone (aka methyl ethyl ketone)	2,200,000		X
Carbon tetrachloride	670,000	5	
Ethylbenzene	1,700,000	700	
Isopropylbenzene	28,000		X
Methylene chloride	34,000	5	
Tetrachloroethene (aka tetrachloroethylene)	92,000,000	5	
Toluene	15,000,000	1000	
Trichloroethene (aka trichloroethylene, aka tricky)	740,000	5	
Xylene	8,600,000	10,000	

**Table 2 - Barrel HDR040 (contents listed as semi-solid) Cell A-8**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
Beta-BHC (aka beta-hexachlorocyclohexane)	440	NY state 0.04	X
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
Anthracene	24,000		X
Benzo(a)anthracene	63,000		X
Benzo(a)pyrene	54,000		X
Benzo(b)fluoranthene	45,000		X
Benzo(g,h,i)perylene	23,000		X
Benzo(k)fluoranthene	47,000		X
Bis(2-ethylhexyl) phthalate (aka di92-ethylhexyl) phe..	22,000	6	
Chrysene (aka Benzo(a)phenanthrene)	70,000		X
Fluoranthene	130,000		X
Indeno(1,2,3-cd)pyrene	30,000		X
Naphthalene (aka Bicyclo[4.4.0]deca-1,3,5,7,9-pentene)	32,000		X
Phenanthrene	90,000		X
Pyrene	100,000		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
4-methyl-2-pentanone	1,700		X
Ethylbenzene	32,000	700	
Isopropylbenzene	1,600		X
Methyl cyclohexane	1,100		X
Methylene chloride	1,500	5	
Trichloroethene (aka trichloroethylene, aka tricky)	800	5	
Xylene	120,000	10,000	

**Table 2 - Barrel HDR041 (contents listed as semi-solid) Cell A-11**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
Bis(2-ethylhexyl)phthalate (aka di(2-ethylhexyl)phe...)	8,100,000	6	
Dimethyl phthalate	3,300,000		X
Naphthalene (aka Bicyclo[4.4.0]deca-1,3,5,7,9-pentene)	1,000,000		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
2-butanone (aka methyl ethyl ketone)	11,000,000		X
4-methyl-2-pentanone	68,000,000		x
Acetone	85,000,000		X
Ethylbenzene	19,000,000	700	
Isopropylbenzene	250,000		X
Methyl acetate	530,000		
Methylene chloride	710,000	5	
Styrene	18,000,000	100	
Toluene	49,000,000	1000	
Trichloroethene (aka trichloroethylene, aka tricky)	740,000	5	
Xylene	56,000,000	10,000	



**Table 2 - Barrel HDR044 (contents listed as semi-solid) Cell A-11**

Chemical Name	Concentration (parts/billion)	MCL (parts/billion)	MCL not established
<b>PESTICIDES</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
Beta-BHC (aka beta-hexachlorocyclohexane)	740	NY Stare 0.04	X
Dieldrin	220		X
Endosulfan II	100		X
Lindane	230	0.2	
Heptachlor epoxide	150		X
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
Bis(2-ethylhexyl)phthalate (aka di(2-ethylhexyl)phe...)	2,300,000	6	
Phenol	440,000		X
<b>VOLATILE ORGANIC COMPOUNDS</b>			
<b>(micrograms/kilogram aka parts/billion)</b>			
1,1,1 trichloroethane	20,000,000	200	
1,1,2 trichloroethane	43,000	5	
1,1 dichloroethene (aka 1,1 dichloroethylene)	610,000	7	
Chloroform (aka trichloromethane)	30,000	80	
Methylene chloride	47,000	5	
Toluene	120,000	1000	
Trichloroethene (aka trichloroethylene, aka tricky)	14,000	5	
Trichlorofluoromethane (aka CFC-11)	590,000		X

**TABLE 3**

<b>Sample #</b>	<b>Description</b>	<b>Cell #</b>
HDR-001	Liquid	C-3
HDR-002	Liquid	C-3
HDR-003	Liquid	C-3
HDR-004	Liquid	C-3
HDR-005	Solid	C-3
HDR-006	Solid	C-3
HDR-007	Elastic Solid	C-3
HDR-008	Liquid	C-3
HDR-009	Liquid	C-3
HDR-010	Viscous Liquid	C-3
HDR-011	Semi-solid	B-7
HDR-012	Liquid	B-7
HDR-013	Semi-solid	B-7
HDR-014	Semi-solid	B-7
HDR-015	Semi-solid	B-7
HDR-016	Viscous Liquid	B-7
HDR-017	Viscous Liquid	B-7
HDR-018	Thick Liquid	B-7
HDR-019	Semi-solid	B-7
HDR-020	Liquid	B-7
HDR-021	Semi-solid	D-7
HDR-022	Liquid	D-7
HDR-023	Liquid	D-7
HDR-024	Solid, liquid	D-7
HDR-025	Solid, liquid	D-7
HDR-026	Liquid	D-7
HDR-027	Liquid	D-7
HDR-028	Viscous liquid	D-7
HDR-029	Viscous liquid	D-7
HDR-030	Viscous liquid	D-7
HDR-031	Thick	A-8
HDR-032	Solid	A-8
HDR-033	Semi-solid	A-8
HDR-034	Semi-solid	A-8
HDR-035	Liquid	A-8
HDR-036	Viscous liquid	A-8
HDR-037	Rubbery	A-8
HDR-038	Thick liquid	A-8
HDR-039	Liquid, solids	A-8
HDR-040	Semi-solid	A-8
HDR-041	Semi-solid	A-11
HDR-042	Viscous liquid	A-11
HDR-043	Liquid	A-11
HDR-044	Semi-solid	A-11
HDR-045	Semi-solid	A-11
HDR-046	Liquid	A-11
HDR-047	Liquid	A-11
HDR-048	Viscous liquid	A-11
HDR-049	Semi-solid	A-11
HDR-050	Viscous liquid	A-11

From Appendix H, Tremont City Barrel Fill Remedial Investigation Report  
Pdf pages: 1772, 1783, 1794, 1804, 1813.

**For more detailed information on the chemical analysis  
of the barrels at the Tremont City Barrel Fill,  
please see Table 4 found at  
[http://www.PeopleForSafeWater.org/wp-  
content/uploads/2015/05/semi-solids-in-the-barrel-fill-  
table-4.pdf](http://www.PeopleForSafeWater.org/wp-content/uploads/2015/05/semi-solids-in-the-barrel-fill-table-4.pdf)**