Hazardous Waste Recycling and Revisions to the Definition of Solid Waste
Early Notifications Show Substantial Disproportionate Impact to Environmental Justice Communities

While the Environmental Protection Agency ("EPA") has acknowledged that it needs to reconsider its 2008 rules deregulating hazardous waste recycling and to undertake an environmental justice analysis, the Agency has so far declined to stay the rule's effectiveness during its reconsideration. As a result, the rules are currently in effect in several states, and many facilities are now allowed to store, handle, and transport hazardous wastes without permits under the Resource Conservation and Recovery Act ("RCRA"). Already, these "early adopters" are putting low income and minority communities at disproportionate risk of environmental harm from some of the most dangerous toxins, including known carcinogens, liver and kidney irritants, and other toxins that cause lasting health and reproductive problems (see Table 4 for health hazards).

Since May 2009, a total of 23 hazardous waste management facilities in Iowa, New Jersey, and Pennsylvania have filed notifications stating that they will take advantage of the hazardous waste recycling exemptions provided by the Revisions to the Definition of Solid Waste ("DSW") Rule. Ten of these facilities are located in Iowa, five in New Jersey, and eight in Pennsylvania. More than 669,111 people live within three miles of one of these facilities.[1] Collectively, the facilities generate 46,463 tons and manage 93,246 tons of waste annually.[2]

A basic investigation of these 23 facilities yields shocking results. At least six of them are chronic violators that have been subject (or remain subject) to corrective action orders. Nineteen are located in communities where poor people and people of color are disproportionately represented. Thus, so far, the effect of the DSW rule has been to strip oversight from facilities with poor environmental records in vulnerable low income and minority communities. In other words, the facilities that are taking advantage of the new RCRA exemptions are precisely the facilities that raise the greatest public health and environmental justice concerns.

As EPA evaluates the DSW rule and the Sierra Club's pending request for a stay, it is critical to recognize the pattern established by these 23 facilities currently operating under the recycling exclusion. They are indicative of the kind of facilities that take advantage of the exclusion and the demographics of the communities where they are most likely to be located. As such, they dramatically illustrate the present and potential adverse impact of the recycling exemption, particularly on low income and minority communities. It is incumbent on EPA to account for these impacts and to take prompt action to buck an emerging trend that will only compound existing environmental injustices.

[1] Environmental Protection Agency, "Enforcement & Compliance History Online (ECHO)," http://www.epa-otis.gov/echo/index.html, Accessed Jan. 19, 2010.
[2] Environmental Protection Agency, *National Biennial RCRA Hazardous Waste Report: Based on 2007 Data*, http://www.epa.gov/waste/inforesources/data/biennialreport/index.htm.

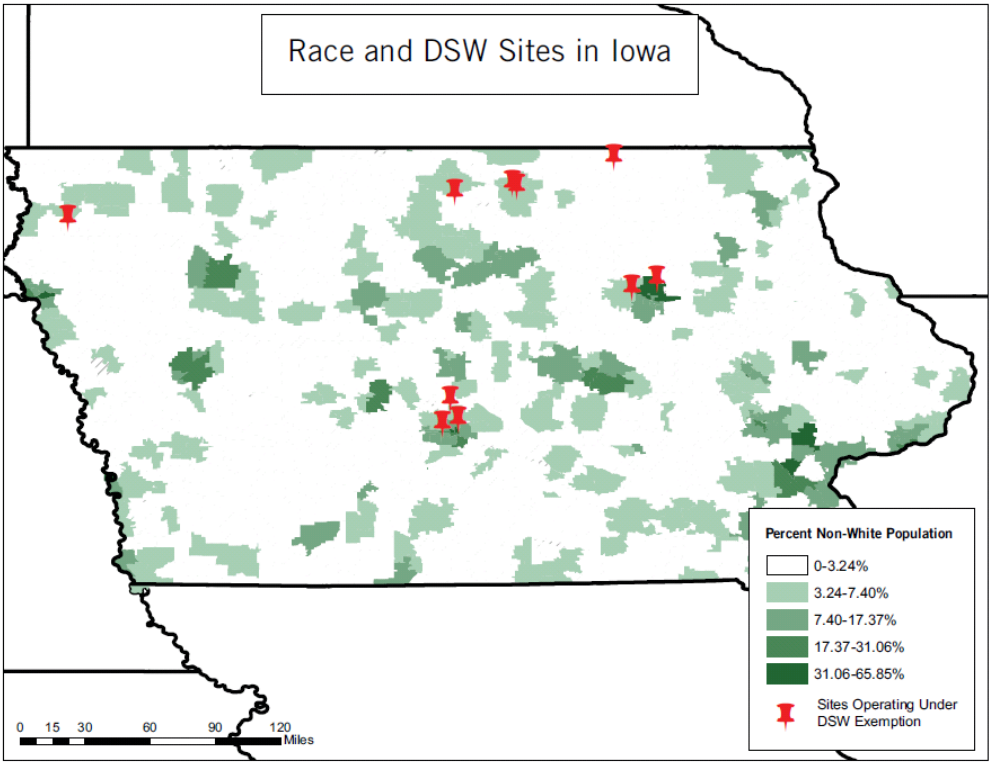
I. Most Facilities Taking Advantage of the RCRA Recycling Exemption Are Located in Environmental Justice Communities

As is the case generally with hazardous waste facilities, [3] a disproportionate share of the 23 facilities now entitled to operate under the recycling exemption are located in environmental justice communities. Nineteen of the 23 facilities (82.6%) are sited in low-income communities and/or communities of color—with several facilities located in the very poorest communities and most minority-dominated communities in their respective states. Table 1, attached, summarizes the demographic characteristics associated with a given facility's ZIP code as compared with the demographic characteristics associated with ZIP codes statewide.

1. Iowa

The facilities in Iowa are almost exclusively located in environmental justice communities. For example, two facilities owned by Curries Division of AADG, Inc. are located in a community that is in the 90th percentile for non-white population and the 65th percentile for low-income families in the state. The neighborhood surrounding the John Deere Waterloo Works facility, also in Iowa, is in the 100th percentile for non-white population and the 92nd percentile for low-income. Eight of ten – 80% - of sites in Iowa are in areas where the population exceeds the state's median for percent non-white population, while four are in areas where the state's median family low-income rate is exceeded. Figure 1, below, overlays the location of facilities using the recycling exemption in Iowa with a display of Census data of the percent non-white population by ZIP code. ZIP codes with an above-average percent non-white population are shown in green.

Figure 1



[3] Earthjustice, "Mapping a Tragedy: Hazardous Waste Recycling & Environmental Justice," http://www.earthjustice.org/library/features/toxic-waste-speak-out.html.

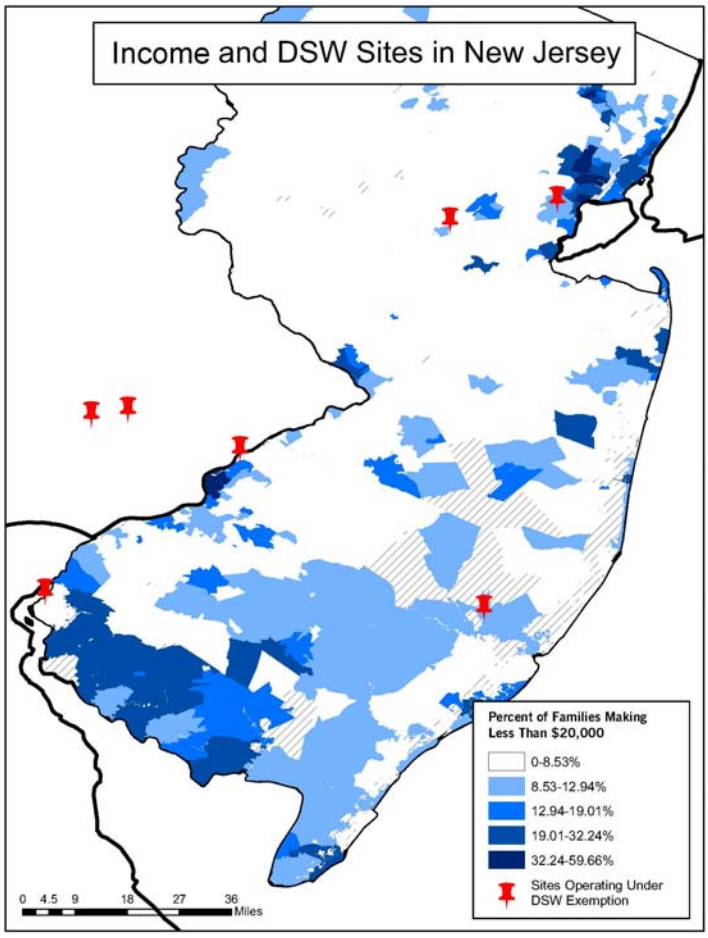
2. Pennsylvania

In Pennsylvania as well, six of the eight facilities (75%) operating under the recycling exemption are in areas where minorities and/or families living on less than $20,000 a year are disproportionately represented. This includes the Carpenter Technology Corporation facility in Reading, which is located in a community where the minority and low-income population rates both exceed the 97th percentile for the commonwealth. A total of four facilities in Pennsylvania are in areas where the non-white population exceeds the 80th percentile.

3. New Jersey

Similarly, in New Jersey, four of the five facilities (80%) are in low-income communities and/or communities of color, including the Safety-Kleen Systems, Inc. facility in Linden and the Aluminum Shapes, LLC facility in Delair. Both of these facilities are located in neighborhoods where the family low-income rate and the percent non-white population are well above the state median. Below, Figure 2 overlays the location of the sites operating under the exemption in New Jersey with poverty data from the United States Census. In the image, low-income information, defined by the percent of families earning less than $20,000 annually, is displayed by ZIP code. Any ZIP code with an above-average low-income rate is shown in blue.

Figure 2



Nationwide, hazardous waste recycling facilities of all kinds are disproportionately located in environmental justice communities. The EPA should take steps to ensure that the recycling exemption does not amplify this pattern of environmental injustice, particularly as additional states adopt the rule and as many as 5,600 facilities take advantage of the hazardous waste recycling exemptions.

II. Facilities with Poor Environmental Records Are Taking Advantage of the Recycling Exclusion to Self-Regulate

The location of exempted "recycling" facilities in minority and low-income communities is especially troubling given that many of the facilities have caused substantial damage to groundwater and soil in the past — damage that in many cases remains unremediated.

The 23 facilities that are now taking advantage of the recycling exemption have collectively been the subject of at least 21 informal and 21 formal enforcement actions in the past five years alone.[4] Six of the facilities (26%) previously have been identified for Corrective Action under RCRA,[5] and ten of these facility sites (43%) have been designated as Superfund sites under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). All told, 16 of the 23 facilities (70%) have caused some type of known contamination in the past, including 13 of the 19 facilities (68%) located in environmental justice communities.

More than 220,251 people live within three miles of the six RCRA Corrective Action sites. They face exposure to known carcinogens, liver and kidney irritants, and other toxins that cause lasting health and reproductive problems. Tables 2, 3, and 4, attached, provide summaries of past damage caused by these facilities and associated health threats.

1. Pennsylvania

Three of the facilities in Pennsylvania are responsible for long-term groundwater contamination: Cherokee Pharmaceuticals, LLC; Carpenter Technology Corporation; and BAE Systems, Land & Armaments. The Carpenter Technology and BAE facilities are located in environmental justice communities.

Carpenter Technology Corporation, which has at least 15,962 neighbors living within one mile, has been attempting to remediate heavy metals and volatile organic compound pollution in groundwater since 1998. The facility updates the EPA on its pump and treat system/wastewater treatment plant's performance on a semi-annual basis, and has yet to stabilize the groundwater contamination to EPA's satisfaction. Contaminants include 1-dichloroethane, 1-trichloroethane, and tetrachloroethene.[6] These contaminants have been shown to cause nervous system disorders, liver damage, and cancer, among other serious adverse health effects.[7]

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[4] Environmental Protection Agency, "Enforcement & Compliance History Online (ECHO)," http://www.epa-otis.gov/echo/index.html, Accessed Jan. 19, 2010. Data not available for the INMETCO and Cherokee Pharmaceuticals, LLC facilities.

[5] Environmental Protection Agency, "Cleaning Up Our Land, Water & Air," http://www.epa.gov/cleanup/index.html, Accessed Jan. 12, 2010; Corrective Action sites are designated as in need of cleanup following "Accidents at facilities that house hazardous wastes release pollutants into soil, groundwater, surface water, and air," according to EPA at http://www.epa.gov/waste/hazard/correctiveaction/index.htm.

[6] Environmental Protection Agency Region III, "Carpenter Technology Corporation," http://www.epa.gov/reg3wcmd/ca/pa/pdf/pad002344315.pdf.

[7] Agency for Toxic Substances & Disease Register, Toxicological Profiles, http://www.atsdr.cdc.gov/toxpro2.html.

BAE Systems, Land & Armaments in York, Pennsylvania has had spotty results with a groundwater cleanup system first implemented in 2005. The groundwater at the site remains unsuitable for use as drinking water due to the presence of the carcinogen tetrachloroethene. In addition to tetrachloroethene, the groundwater is also contaminated with trichloroethene.[8] These contaminants, which can cause reproductive disorders, cancer, and immunosuppression problems, threaten the health of the 10,211 residents living within three miles of the facility.

Finally, the Cherokee Pharmaceuticals, LLC site in Riverside, Pennsylvania completed a Final Remedy for groundwater contamination in 2008, but the company continues to monitor groundwater following decades of contamination that began in 1983. The initial contamination released "various organic compounds" that "migrated offsite and impacted some nearby residential wells," forcing impacted residents to connect to the municipal water system.[9] Continued observation is essential to prevent further exposure of the community to contaminants including chloroform, benzene, and methylene chloride, which can cause cancer, neurological effects, and immunosuppression.

2. New Jersey

In New Jersey, two of the notifying facilities have been identified for RCRA Corrective Action. One of these sites, Veolia ES Technical Solutions in Middlesex, has been undergoing regular remediation and monitoring by the New Jersey Department of Environmental Protection ("NJDEP") and the EPA since 1986, following releases into the soil of "organic constituents, such as benzene, toluene, methylene chloride, tetrachloroethene and chlorobenzene."[10] Even after years of soil cleanup, Veolia is still under investigation.

Similarly, the Safety-Kleen Systems, Inc. facility in Linden, New Jersey, an environmental justice community, has long been engaged in a groundwater cleanup following a corrective action designation in 1986. According to EPA, "Past activities, spills, and the operation of unlined impoundments resulted in releases of contaminants to the soil and groundwater. The primary threat is groundwater contamination by volatile organics, including benzene, toluene, methylene chloride, tetrachloroethene, trichloroethene and chlorobenzene." Residual contamination of soil and groundwater has necessitated continued monitoring of a groundwater extraction system. The EPA, which has taken the lead on regulating remediation of this site, has developed a long-term plan to institute a site-wide groundwater treatment and monitoring program.[11]

The range of contaminants found at the two New Jersey Corrective Action sites have been known to cause cancer, central nervous system damage, headaches, nerve damage, liver damage, and more. A total of 184,670 people live within three miles of these two sites, and are potentially at risk from exposure to contamination.

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[8] Environmental Protection Agency Region III, "BAE Systems (United Defense)," http://www.epa.gov/reg3wcmd/ca/pa/pdf/pad003025418.pdf.
[9] Environmental Protection Agency Region III, "Cherokee Pharmaceuticals, LLC," http://www.epa.gov/reg3wcmd/ca/pa/pdf/pad003043353.pdf.
[10] Environmental Protection Agency Region II, "NJ RCRA Cleanup Fact Sheets: Veolia ES Technical Solutions," http://www.epa.gov/region02/waste/fsmarisol.htm, Accessed Jan. 10, 2010.
[11] Environmental Protection Agency Region II, "NJ RCRA Cleanup Fact Sheets: Safety-Kleen Corporation - Linden RC," http://www.epa.gov/region02/waste/fssafeli.htm, Accessed Jan. 10, 2010.

Even under the stringent regulatory requirements of RCRA, the 23 now-exempt facilities have often been responsible for contamination that required years of carefully managed cleanup.[12] Of these sites, at least five have ongoing remediation plans for contaminated groundwater.

When these facilities were subject to full RCRA regulation, state and/or federal RCRA inspections identified numerous releases at the facilities, and the facilities were required to develop cleanup plans under the RCRA corrective action program. As these facilities are now able to escape active oversight pursuant to the new recycling exemption, releases of the sort that historically have caused enduring contamination can be expected to become more frequent and to go undetected longer.

Conclusion

The disproportionate siting of hazardous waste facilities in low income communities of color, and the compounding fact that many of these facilities have a troubling environmental track record, should alert EPA that the recycling exemption raises unacceptable environmental justice concerns in violation of Executive Order 12,898. Therefore, it's necessary to conduct a full environmental justice analysis for the DSW and to stay this destructive rule while the analysis is completed. Ultimately, should the analysis demonstrate devastating health risks similar to the first 23 sites, a reversal of this Bush era regulation will be necessary to protect US citizens, especially those historically most impacted and continually at risk.

[12] One site in Iowa, John Deere Des Moines Works, has also been designated for Corrective Action, though details of the contamination at this site have not yet been ascertained. Based on a personal communication with Patricia Murrow at EPA Region 7, it appears that the site has been under various investigations for over ten years, and there have been releases at the site. Earthjustice is seeking further documentation of the damage history through the FOIA process.

Table 1: Environmental Justice Indicators

Facility/Company Name	EPA ID	City/Town	ZIP Code	% Non-White Population	Percentile for Non-White Population in State	% Families Living on <$20,000/year	Percentile for Low-Income in State
Iowa							
Curries 12th Street NW Facility	IA0000362905	Mason City	50401	6.37	**89.50**	15.01	**65.44**
Curries 9th Street SE Facility	IAD043490150	Mason City	50401	6.37	**89.50**	15.01	**65.44**
Siegwerk USA Co.	IAR000007377	Des Moines	50321	10.52	**94.75**	3.50	4.47
Siegwerk USA Co.	IAD078096732	Des Moines	50317	8.87	**93.18**	12.13	44.63
Iowa Mold Tooling Company, Inc.	IAD005286539	Garner	50438	1.24	38.88	9.38	24.83
Iowa Contract Fabricators, Inc.	IA0000990762	Riceville	50466	0.11	11.73	16.97	**75.84**
Vogel Paint & Wax Co., Inc.	IAD007276728	Orange City	51041	2.24	**61.23**	7.88	17.11
John Deere--Engine Works	IAD000678094	Waterloo	50701	8.05	**92.07**	8.94	22.71
John Deere Waterloo Works	IAD000805168	Waterloo	50703	39.81	**99.66**	23.07	**92.06**
John Deere Des Moines Works**	IAD069624500	Ankeny	50023	3.06	**71.73**	2.50	3.47
New Jersey							
Veolia ES Technical Solutions, LLC	NJD002454544	Middlesex	08846	17.94	**57.06**	3.70	24.08
Siegfried (USA), Inc.	NJD064344575	Pennsville	08070	4.16	9.72	7.45	**60.85**
Safety-Kleen Systems, Inc.	NJD002182897	Linden	07036	40.52	**81.28**	9.34	**71.32**
Aluminum Shapes, LLC	NJD002338267	Delair	08110	62.14	**88.99**	13.5	**83.27**
Viking Yacht Co.	NJD002482545	New Gretna	08224	0.20	0.92	3.80	25.18
Pennsylvania							
Johnson Matthey Emissions Control Tech.	PAD980829287	Wayne	19087	9.64	**83.34**	2.98	2.66
INMETCO	PAD087561015	Ellwood City	16117	1.77	37.65	15.17	**53.05**
Cherokee Pharmaceuticals, LLC	PAD003043353	Riverside	17868	1.16	23.30	12.10	37.00
Carpenter Technology Corporation	PAD002344315	Reading	19601	62.10	**97.83**	34.26	**97.27**
BAE Systems, Land & Armaments	PAD003025418	York	17404	16.62	**90.13**	13.11	41.56
Johnson Matthey, Inc.	PAR000519322	Smithfield	15478	1.67	35.27	27.41	**93.34**
Triangle Circuits	PAD981037377	Oakmont	15139	2.17	44.86	9.19	24.46
Lonza, Inc.	PAD980550412	Conshohocken	19428	12.42	**86.49**	8.35	20.88

* Census 2000 demographic data given by 5-digit Zip Code Tabulation Ares (ZCTA).

**No demographic data was available for ZIP code 50023, so the demographic information given is for all of Ankeny (pop 27,117)

Table 2: Contamination History

Facility/Company Name	EPA ID	City/Town	Population Within 1 Mile	Population Within 3 Miles	Days Since Last Inspection	Quarters in Non-Compliance	Informal Enforcement Actions 5 Years	Formal Enforcement Actions 5 Years	Penalties 5 Years	Identified for RCRA Corrective Action	Superfund Site
Iowa											
Curries 12th Street NW Facility	IA0000362905	Mason City	1,411	21,210	5,294						
Curries 9th Street SE Facility	IAD043490150	Mason City	8,175	Unknown	4,480						
Siegwerk USA Co.	IAR000007377	Des Moines	2,280	35,678	1,638		1	2	$36,385		
Siegwerk USA Co.	IAD078096732	Des Moines	7,180	74,094	191	1	2	2	$36,385		
Iowa Mold Tooling Company, Inc.	IAD005286539	Garner	1,262	3,223	503	2	1				
Iowa Contract Fabricators, Inc.	IA0000990762	Riceville	56	395	505	1	1				
Vogel Paint & Wax Co., Inc.	IAD007276728	Orange City	51	6,831	623						X
John Deere--Engine Works	IAD000678094	Waterloo	712	16,521	50						
John Deere Waterloo Works	IAD000805168	Waterloo	65	4,668	1,857		1				
John Deere Des Moines Works***	IAD069624500	Ankeny	3,020	25,370	910	4	1			X	X
New Jersey											
Veolia ES Technical Solutions, LLC	NJD002454544	Middlesex	12,237	57,162	55	3	4	9	$30,000	X	X
Siegfried (USA), Inc.	NJD064344575	Pennsville	2,696	12,765	812			2	$20,799		X
Safety-Kleen Systems, Inc.	NJD002182897	Linden	8,697	127,508	92	12	4	4	$9,250	X	X
Aluminum Shapes, LLC	NJD002338267	Delair	63	122,393	943		1				X
Viking Yacht Co.	NJD002482545	New Gretna	2,782	1,259	603	12	2	2	$4,500		X
Pennsylvania											
Johnson Matthey Emissions Control Tech.	PAD980829287	Wayne	4,852	51,350	112						
INMETCO*	PAD087561015	Ellwood City	Unknown	Unknown							X
Cherokee Pharmaceuticals, LLC*	PAD003043353	Riverside	Unknown	Unknown						X	X
Carpenter Technology Corporation	PAD002344315	Reading	15,962	Unknown	436	1	1			X	X
BAE Systems, Land & Armaments	PAD003025418	York	834	10,211	247					X	
Johnson Matthey, Inc.	PAR000519322	Smithfield	Unknown	Unknown	Never						
Triangle Circuits	PAD981037377	Oakmont	6,251	37,302	5,626						
Lonza, Inc.	PAD980550412	Conshohocken	3,553	61,171	292	11	2				
TOTAL			82,139	669,111			21	21	$137,319		

* Data for INMETCO and Cherokee Pharmaceuticals, LLC was not available at Enforcement and Compliance History Online.

** Superfund sites include archived and active sites.

*** The Lonza, Inc. facility is identified as a corrective action site on its "RCRA Corrective Action Site Progress Profile," but is not marked as such here because, according to the EPA Region III contact, this designation is incorrect.

Table 3: Contamination Details at RCRA Corrective Action Sites

Facility/Company Name	EPA ID	City/Town	Population Within 1 Mile	Population Within 3 Miles	Groundwater/ Soil Contaminants
Iowa					
John Deere Des Moines Works	IAD069624500	Ankeny	3,020	25,370	Unknown
New Jersey					
Veolia ES Technical Solutions, LLC	NJD002454544	Middlesex	12,237	57,162	Benzene, toluene, methylene chloride, tetrachloroethene, trichloroethene, chlorobenzene
Safety-Kleen Systems, Inc.	NJD002182897	Linden	8,697	127,508	Benzene, toluene, methylene chloride, tetrachloroethene, trichloroethene, chlorobenzene
Pennsylvania					
Cherokee Pharmaceuticals, LLC	PAD003043353	Riverside	Unknown	Unknown	Chloroform, benzene, methylene chloride, tetrahydrofuran, chlorobenzene, 1,2-dichloroethane
Carpenter Technology Corporation	PAD002344315	Reading	15,962	Unknown	1, 1-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethane, trichloroethene, tetrachloroethene
BAE Systems, Land & Armaments	PAD003025418	York	834	10,211	tetrachloroethene, trichloroethene
TOTAL			40,750	220,251	

Table 4: Health Hazards

Contaminant	Health Effects of Low-Level Exposure
Benzene	Vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, coma, and death. Long-term exposure can cause immunosuppression, reproductive ailments, and leukemia. Benzene is a known carcinogen.
Toluene	Headaches, sleepiness, impaired ability to think clearly, memory loss, nausea, possible liver, kidney, and lung damage.
Methylene chloride	Probable human carcinogen.
Tetrachloroethene	Reproductive ailments, possible liver and kidney damage. Probable human carcinogen.
Trichloroethene	Headaches, lung irritation, dizziness, poor coordination, difficulty concentrating; nerve, kidney, and liver damage. Immunosuppression and impaired fetal development. Probable human carcinogen.
Chlorobenzene	Liver, kidney, and central nervous system damage.
Chloroform	Liver and kidney damage, possible reproductive effects. Probable human carcinogen.
Tetrahydrofuran	Neurological and gastrointestinal damage, respiratory irritation.
1,2-dichloroethane	Nervous system disorders, liver and kidney disease. Probable human carcinogen.
1,1,1-trichloroethane	Possible nervous system and liver damage.
cis-1,2-dichloroethane	Decreased number of red blood cells, liver damage.

* Sources: Agency for Toxic Substances & Disease Register, Toxicological Profiles, http://www.atsdr.cdc.gov/toxpro2.html and scorecard.org.