

Toxic Runoff from Maryland Industry

Inadequate Stormwater Discharge Protections Threaten
Marylanders' Health and the Environment



November 2017

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Inadequate Industrial Discharge Protections Threaten Marylanders' Health and the Environment

Executive Summary

Water is sometimes called the “universal solvent” because – for good or bad – water more effectively dissolves chemicals than any other liquid. This is a decidedly mixed blessing in our industrialized world. The same rainstorms that dissolve nutrients in the soil to fertilize crops also wash toxic metals from industrial sites into nearby communities and waterways.

In Maryland, over 900 industrial facilities conduct operations that put local communities and waterways at such a high risk from toxic runoff that they must obtain permit approval from the Maryland Department of the Environment (MDE) under the General Permit for Stormwater Discharges Associated with Industrial Activity. Some of the most problematic sites are auto salvage yards, scrap metal recycling facilities, and landfills. By their nature, these operations have many toxic materials on-site, such as leaking car batteries at auto salvage yards, deteriorating metal parts at scrap metal recyclers, and eroding trash incineration ash waste at landfills, which, for example, MDE inspectors discovered at Baltimore’s Quarantine Road Landfill.



Map 1: Statewide distribution of sites required to comply with Maryland's Industrial Stormwater Permit. [View in high resolution.](#)

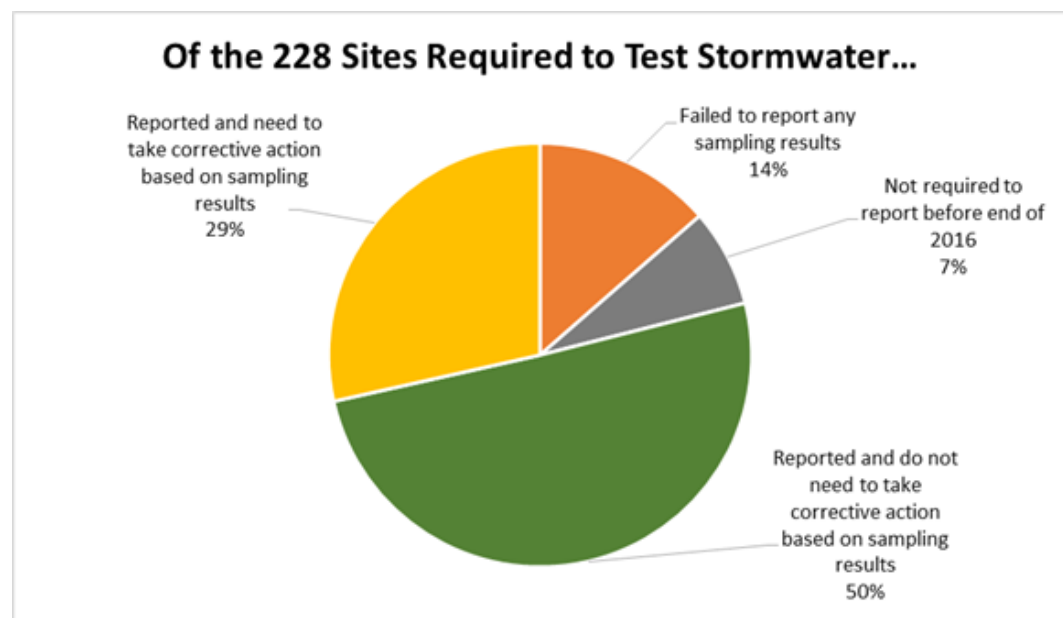
The risk of toxic runoff is anything but theoretical. Our review of recent public records from MDE uncovered multiple reports of highly toxic industrial stormwater discharges across the state of Maryland. Six types of industrial sites are required to test their stormwater runoff for levels of pollution that may harm water quality:

- Chemical and allied products facilities
- Landfills and land application sites
- Automobile salvage yards
- Scrap recycling and waste recycling facilities
- Food and kindred products facilities
- Facilities that manufacture fabricated metal products.

Between January 2014 and March 2017, 228 sites from these sectors were required to test their stormwater discharge and report the results quarterly. Only 180 of these facilities provided MDE with the required quarterly sampling reports. Further, 65 out of these 180 sites (36 percent) exceeded acceptable pollution levels in four consecutive quarters, on average, during our review period.

More than one-third of the facilities reporting discharges exceeded pollution limits in four consecutive quarters.

These sites discharged stormwater that exceeded permissible levels for copper, aluminum, zinc, and lead, among other pollutants. For example, stormwater discharge sampled from Salisbury Scrap Metal, Inc. located in Salisbury exceeded the 0.014 mg/L permissible level of copper by an average of 1,564 percent. Meanwhile, on average, Cambridge Iron and Metal Company in East Baltimore discharged stormwater that exceeded the 0.082 mg/L permissible level of lead by 717 percent, and the Southern States agricultural supply facility in Cumberland, Maryland, discharged stormwater that exceeded the 0.12 mg/L permissible level of zinc by 1,378 percent. Fourteen percent (31 of 228) of the facilities that were required to submit such reports by the last quarter of 2016 failed to do so. All told, 42 percent (96 of 228) of the Maryland sites required to test their stormwater for acceptable pollution levels either discharged above acceptable levels of pollution or failed to perform this permit requirement at all.



Unfortunately, this number barely scratches the surface of the problem. An additional 40 percent (72 of 180) only submitted partial data and failed to

submit reports for at least one required pollutant. Facilities that fail to abide by the basic recordkeeping and reporting requirements of the permit can hardly be counted on to meet the same permit's pollution control obligations, such as keeping chemicals safely sealed in containers, immediately cleaning up chemical spills, and covering industrial materials to prevent exposure to stormwater. Following such requirements would be enough for many sites to reduce contamination to acceptable levels. Some facilities may also need to take additional measures, such as constructing stormwater retention ponds or other stormwater treatments to control levels of contaminated stormwater.

The failure of permit holders to implement such straightforward best management practices – whether they file discharge monitoring reports or not – poses a significant threat to the environment and public health. Once industrial pollutants are released from a site and carried by rainwater over paved surfaces – or by the wind as dust – they can spread quickly throughout urban areas, exposing local communities to public health hazards. These toxic substances also eventually make their way into groundwater or streams where they can contaminate drinking water or the food chain. Studies show that industrial pollution can even contaminate homes, both near and far, as residents and workers bring in dust on their clothes.

Widespread violations of the industrial stormwater general permit – and the human and environmental risks they cause – can be traced to shortcomings in the permit itself, but more importantly, to a failure of political leadership to achieve vigorous enforcement. Through both Democratic and Republican administrations, MDE's political leadership has failed to consistently prioritize deterrence-based enforcement for polluters who put people and the environment in harm's way. Yet the stakes for public health raised by this habitual neglect of the agency's role as "cop on the beat" have never been higher. The historical legacy of toxic sites in heavily populated and dangerously polluted areas, including Baltimore, takes a grim toll on people forced by high housing costs elsewhere to live near industrial facilities. Without vigorous enforcement, the owners and operators of these facilities have little incentive to clean them up. Governors who turn a blind eye to this problem can no longer claim to represent all the people of the state if they ignore the disproportionate burden shouldered by residents of its cities.

In an era of yawning gaps between the mandates environmental agencies must implement and their operating budgets, emphasizing so-called "compliance counseling" in lieu of deterrence-based enforcement is not only ineffective, it encourages noncompliance. For many business owners, it is the cheaper gamble to pollute than to clean up, and they will be tempted to do so if they see direct competitors getting away with foregoing pollution controls. MDE cannot possibly jawbone scofflaw companies into compliance, especially considering that the agency's inspectors do not even manage to inspect facilities that have a track record of violations. A handful

Widespread violations of the industrial stormwater general permit can be traced to shortcomings in the permit itself and to a failure of political leadership to achieve vigorous enforcement.

Weak enforcement and inadequate permit protections ultimately burden Maryland communities that lack social, economic, and political clout.

of vigorously prosecuted enforcement actions and the collection of significant penalties could do more to clean up the environment than hundreds of compliance counseling sessions.

Our research found that MDE inspectors visited only 54 percent of the 65 facilities that reported discharges exceeding acceptable pollution levels between January 2014 and March 2017, and they inspected fewer than half of the facilities (42 percent, or 13 of 31) that violate the law by simply not reporting. Given that inspections can lag behind MDE discovering noncompliance through records review, our analysis of inspection data covered the period January 2014 through early September 2017. Strong, deterrence-based enforcement strategies that involve prosecuting noncompliant facilities and collecting significant monetary penalties enable underfunded agencies like MDE to send clear signals to polluters that they cannot ignore public health protections without consequence.

Weak enforcement and inadequate permit protections ultimately burden Maryland communities that lack social, economic, and political clout. Our analysis uncovered that many of the industrial facilities covered under the permit are clustered in and around low-income neighborhoods in areas such as eastern and south Baltimore, northern Anne Arundel County, Prince George's County bordering the District of Columbia, and Salisbury on the Eastern Shore. These same communities are also plagued by some of the highest concentrations of all types of air and water pollution and hazardous waste sites, according to U.S. Environmental Protection Agency (EPA) data.

In the coming months, Maryland's political leaders and agency staff have clear opportunities to address the widespread violations of Maryland's industrial stormwater permit and improve the state's public health and environment. MDE staff can make changes to the industrial stormwater permit when it comes up for renewal in 2018. And Maryland's governor and General Assembly can pave the way with their budget and appropriations. To those ends, we recommend the following:

- The governor and General Assembly should devote more funding and resources to MDE to hire and train site inspectors and compliance officers.
- MDE should pursue an enforcement strategy for industrial stormwater pollution that considers a broader vision of social justice and public health. The strategy needs unequivocal support from political leaders to engage in strong, deterrence-based enforcement when violations threaten disadvantaged communities.
- MDE should revise its industrial stormwater permit to incorporate deadlines for polluters to take corrective action when current practices fail to protect local communities and waterways.

- The next iteration of Maryland's industrial stormwater permit should adopt more realistic and more detailed monitoring requirements.
- Maryland should create a publicly available reporting database and require permittees to electronically submit updated pollution plans and compliance reports once per quarter. MDE should also publicly disclose its inspection and enforcement activities in a timely fashion on its website.

By adopting these recommendations, Maryland would take a significant step toward protecting its residents and preventing further degradation of the Chesapeake Bay and local waterways from toxic pollution.

Introduction

Across Maryland, industrial sites ranging in size from major landfills to mid-block auto recyclers are putting neighboring communities and local waterways at risk by failing to take simple steps toward preventing contaminated stormwater runoff. The federal Clean Water Act requires these pollution prevention strategies, known as best management practices, and gives state agencies like the Maryland Department of the Environment (MDE) the authority to set standards and penalize polluters who fail to meet them.

Politicians in Maryland have systematically underfunded environmental enforcement programs, resulting in fewer inspectors with greater workloads to try to track compliance with MDE's industrial stormwater permit. Based on the limited number of inspections conducted and high rates of noncompliance, it is clear that Maryland's communities and environment are suffering from excessive levels of pollution.

This report examines the health risks of stormwater contamination and other industrial pollution experienced by communities living in highly industrialized areas. Next, the report presents findings based on a review of Maryland's enforcement program and a review of the permitting program to inform ways to improve the state's industrial stormwater permit.

Discharges of Industrial Stormwater Pollute Communities and the Environment

Industrial pollution affects the health of Maryland waterways and the health of individuals in our communities. This section first discusses how stormwater runoff carries industrial pollution into local rivers and streams. Next, we discuss how the operations of the types of industrial facilities regulated under the State's General Permit for Discharges of Stormwater Associated With Industrial Activity ("industrial stormwater permit") create health risks for community members living near and working at these sites.¹ Finally, we discuss how Maryland's most vulnerable communities are found in highly industrialized areas where these operations are located.

Stormwater Pollutes Maryland's Waterways and the Chesapeake Bay

Pollution knows no boundaries, which is particularly true for industrial stormwater runoff. Rainfall or snowmelt carries heavy metals and chemical-laden sediment from industrial sites. Runoff courses over sidewalks and streets and washes through storm sewers directly into the nearest river or stream. In Baltimore, home to a significant percentage of the state's industrial stormwater sites (102 facilities), the Patapsco River is one of only two waterways identified by the Chesapeake Bay Program as impaired by metals, polychlorinated biphenyls (PCBs), and toxic organic compounds (the other waterway is the Anacostia River in Maryland and Washington, DC).

In Maryland, stormwater is the fastest-growing source of pollution to local streams and rivers and jeopardizes progress to restore the Chesapeake Bay. Stormwater is responsible for conveying nitrogen and phosphorus pollution – the source of algae blooms and dead zones – and the sediment that smothers aquatic animals and sea grasses. Stormwater, especially when it originates on industrial sites, conveys chemical pollutants that are toxic to aquatic life, disrupting growth and reproduction and killing fish and other creatures.

Stormwater pollution also endangers human health as a major source of fecal bacteria contamination and other waterborne illnesses. Additionally, uncontrolled industrial stormwater pollution contaminates drinking water sources, exposing large populations to harmful pollutants. A 2008 study of drinking water at a federal facility found detectable levels of some industrial contaminants (including manufacturing additives, industrial solvents, petroleum byproducts, and pavement- and combustion-derived compounds, among others) in both water supplies from the Potomac River and in samples of the facility's treated drinking water.²

Industrial Dust Puts Nearby Communities and Workers at Risk for Illness

Even before being carried off-site in stormwater, industrial pollution often exists as contaminated dust. This fact encourages a broader public health view of industrial stormwater pollution sources and MDE's role in regulating

Uncontrolled industrial stormwater pollution contaminates drinking water sources, exposing large populations to harmful pollutants.

“Operators must minimize generation of dust and off-site tracking of raw, final or waste materials. Dust control practices can reduce the activities and air movement that cause dust to be generated. Airborne particles pose a dual threat to the environment and human health. Dust carried off-site increases the likelihood of water pollution.”

Maryland Department of Environment, Fact Sheet for General Permit for Stormwater Discharges Associated with Industrial Activity

them. The agency recognizes this “dual threat” and requires sites to limit dust dispersion through the industrial stormwater permit. Dust can be picked up by the wind or kicked up by traffic and scattered around. The public at large, and especially vulnerable individuals – such as children, the sick, and the elderly – who live in proximity to industrial facilities can suffer illnesses caused by hazardous substances that spread off-site. Further, workers can bring contaminated dust into their homes on their clothing, in turn exposing children, pregnant women, and other sensitive people to lead and other dangerous substances.³

Children are particularly vulnerable to lead dust, which is a potent neurotoxin that can cause permanent cognitive disability at even small levels of exposure. Lead dust is commonly produced in industrial processes such as metal recycling, an industrial sector with an exceptionally poor stormwater pollution compliance record in Maryland (see the following section). Wind-blown lead dust can significantly threaten public health in some communities because airborne lead is more readily absorbed in the body than lead ingested from paint chips and other sources.⁴ For example, researchers have found higher levels of lead in blood samples from children and in soil samples from residential communities near landfills.⁵

Other airborne pollutants from metal recyclers and other industrial sites can also make their way into the bloodstreams of people that live near and work at these sites. For example, in a study of one community, researchers found elevated levels of polybrominated diphenyl ethers (PBDEs) – a neurotoxin, thyroid disruptor, and potential carcinogen – in soil and dust samples and in blood samples from individuals within 100 meters of an auto and metal recycling facility.⁶

Putting a public health lens on industrial stormwater sheds light on an often-overlooked aspect of environmental pollution – occupational health. The dust, particulate, and liquid chemical contaminants associated with industrial pollution significantly threaten the health of workers. Exposure to persistent, bioaccumulative, and toxic chemicals is a workplace hazard that is preventable with strong, effective workplace health and safety regulations that are stringently enforced. Unfortunately, site managers often fail to follow these rules and best practices, and more than 50,000 workers die each year due to occupational illness, mostly related to toxic exposures.⁷

Workers at auto salvage and metal recycling facilities are regularly exposed to elevated levels of toxic metals such as arsenic, beryllium, hexavalent chromium, and cadmium.⁸ Workers at metal recycling facilities are also regularly exposed to elevated levels of lead dust and fumes.⁹ Chronic occupational exposure to these toxins are linked to increased rates of heart and lung disease, lung cancer, kidney damage, brain dysfunction, and suppression of the immune system.

In one study of scrap metal recyclers, researchers tested samples of workers’ blood and the air within these sites.¹⁰ The researchers found that both the

blood and air samples contained elevated levels of manganese, a toxic metal that can cause neurological illness. Meanwhile, workers at landfills face an increased risk of various degenerative diseases, infections, and other illnesses through regular exposure to toxic, dust-based metals, particulates, bacteria, and fungi.¹¹

FINDING: Industrial Pollution, including Stormwater, is Concentrated in Some of Maryland's Most Vulnerable Communities

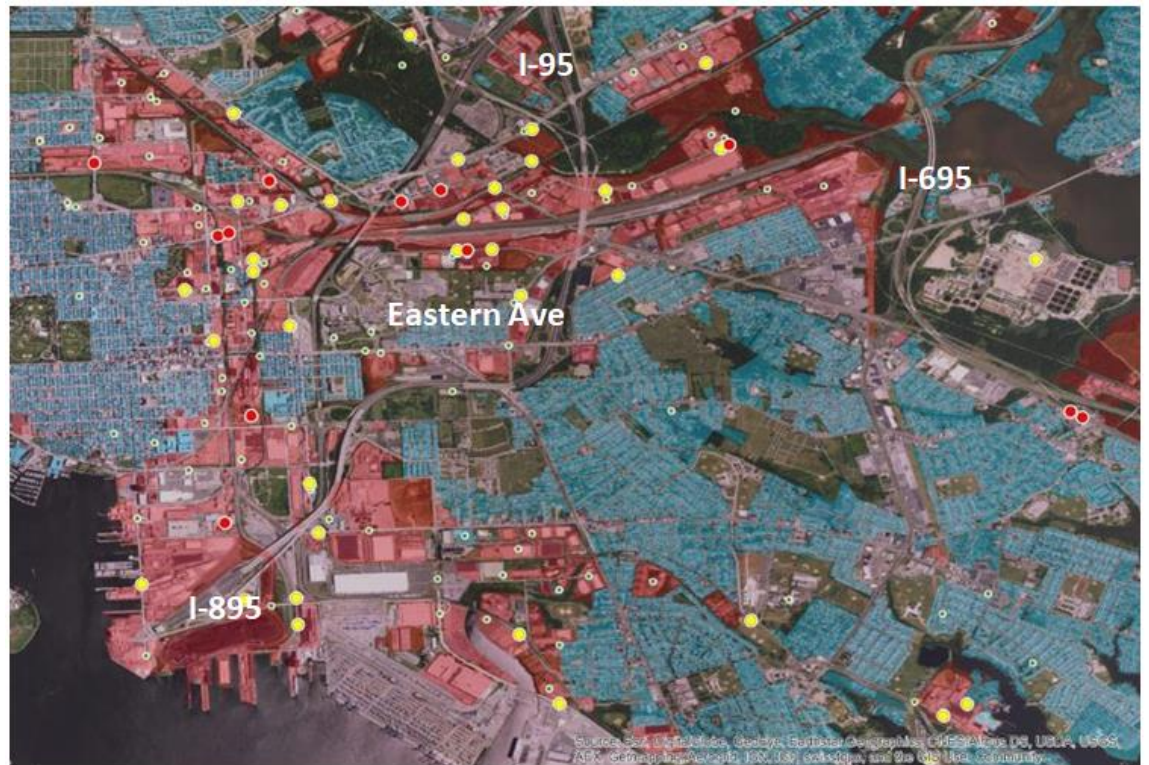
The densest concentrations of industrial sites regulated by the Industrial Stormwater Permit are located in vulnerable communities already heavily burdened by pollution. According to our analysis, one percent of census tracts in Maryland contain 16 percent of all permitted industrial stormwater sites while a significant majority of tracts contain none at all.

The same communities disproportionately affected by toxic runoff from industrial sites also contain some of the greatest concentrations of all types of polluters and hazardous waste sites identified by the U.S. Environmental Protection Agency (EPA).

Tens of thousands of Marylanders live in these communities, and many suffer cumulative health impacts by living in close proximity to so many toxic and hazardous substances. These impacts can include higher rates of respiratory disease, cancer, and other degenerative and developmental illnesses. Such environmental health impacts and outcomes are exacerbated in communities already struggling with the multiple challenges of low incomes, poor housing and transportation resources, disabilities, and other structural and socioeconomic barriers.

Low-income neighborhoods in eastern and south Baltimore, northern Anne Arundel County, Prince George's County along the border with the District of Columbia, and Salisbury on the Eastern Shore, among others, are surrounded by the densest concentration of industrial stormwater sites. The maps on the following pages show in vivid detail the proximity of such sites to low-income neighborhoods and local waterways.

Eastern Baltimore City



Map 2: Yellow dots represent permitted industrial stormwater facilities and red dots are facilities that need to take corrective action to address toxic pollution. Small green dots are other facilities regulated by EPA. Red shaded areas are parcels identified as industrial by the Maryland Department of Assessments and Taxation, and blue shaded areas are identified as one of several classes of residential property. [View in high resolution](#).

Southwest Baltimore City and Northern Anne Arundel County



Map 3: Yellow dots represent permitted industrial stormwater facilities and red dots are facilities that need to take corrective action to address toxic pollution. Small green dots are other facilities regulated by EPA. Red shaded areas are parcels identified as industrial by the Maryland Department of Assessments and Taxation, and blue shaded areas are identified as one of several classes of residential property. [View in high resolution](#).

Prince George's County Along Border with District of Columbia



Map 4: Yellow dots represent permitted industrial stormwater facilities and red dots are facilities that need to take corrective action to address toxic pollution. Small green dots are other facilities regulated by EPA. Red shaded areas are parcels identified as industrial by the Maryland Department of Assessments and Taxation, and blue shaded areas are identified as one of several classes of residential property. [View in high resolution](#).

Salisbury, Maryland



Map 5: Yellow dots represent permitted industrial stormwater facilities and red dots are facilities that need to take corrective action to address toxic pollution. Small green dots are other facilities regulated by EPA. Red shaded areas are parcels identified as industrial by the Maryland Department of Assessments and Taxation, and blue shaded areas are identified as one of several classes of residential property. [View in high resolution](#).

Spotlight on East Baltimore

East Baltimore is a hotspot for industrial pollution. We examined eight census tracts in the area that include portions of diverse neighborhoods such as Canton, Highlandtown, Hopkins Bayview, Elwood Park, Orangeville, Berea, Baltimore Highlands, Madison Eastend, and Claremont.

There are 39 industrial sites in East Baltimore that are covered under the industrial stormwater permit. Our compliance assessment identified six facilities either in violation of the permit's requirement to monitor and report stormwater discharges, or have reported that the facility exceeded benchmarks for pollutants such as lead that require corrective action. Industrial stormwater pollution is only a piece of the picture, though.

Industrial activity in East Baltimore is regulated under a variety of state and federal pollution laws. In addition to the facilities regulated under Maryland's industrial stormwater permit, these neighborhoods bear the burden of living among about 200 industrial facilities, which are regulated under more than 300 different pollution control permits. Among these facilities are numerous sources of toxic and hazardous pollution, such as Superfund sites and major emitters of air pollution.

East Baltimore neighborhoods bear the burden of living among about 200 industrial facilities, which are regulated under more than 300 different pollution control permits.



Map 6: Distribution of industrial facilities in the Baltimore region that are required to comply with Maryland's Industrial Stormwater Permit, with East Baltimore census tracts highlighted in blue. View in high resolution. [View in high resolution.](#)

In a review of EPA data, we found eight Superfund-designated sites, which include the former Colgate Dump, Eastern Plating plant, and Ainsworth Paint and Chemical plant.¹² East Baltimore is also home to a whopping 27 federal pollution permits that allow significant discharges of air pollution from facilities such as Complementary Coatings Corporation, National Gypsum, and ExxonMobil's Baltimore Terminal. There are also eight industrial facilities, such as TechAlloy Company and Lebanon Chemical

Corp., that use extremely hazardous substances that require federal Risk Management Plans. And there are 32 facilities that have reported toxic releases to EPA, including 14,900 pounds of toxic ammonia gas from the National Gypsum plant in 2015.

The quantity of polluting facilities in proximity to the approximately 25,000 residents of East Baltimore adds up to disproportionate levels of exposure. Census tracts that include the Hopkins Bayview, Elwood Park, Baltimore Highlands, and Claremont neighborhoods are all within the 98th percentile nationally for proximity to contaminated Superfund sites.¹³ Several other tracts within East Baltimore rank in the 95th percentile or higher. At the state level, neighborhoods in East Baltimore rank in the 95th percentile for proximity to hazardous waste, facilities with extremely hazardous substances, and wastewater discharges. Portions of the small neighborhoods of Kresson and Baltimore Highlands fall within one of the state's most polluted census tracts, ranking in the 90th or higher percentile statewide for numerous environmental health indicators, including air toxics cancer risk, ozone, particulates, and lead-based paint, among several others. At the national level, Baltimore's residents endure the highest mortality rates from exposure to combustion-based emissions, and its children suffer almost three times the national rate of lead poisoning.¹⁴

Social vulnerability in East Baltimore neighborhoods exacerbates the risk pollution poses. Children, the elderly, and the disabled have physiological conditions or characteristics that enhance the risk of disease from industrial pollution, and low-income populations and some communities of color face greater barriers to accessing health resources for prevention or treatment of disease exacerbated by environmental conditions. The Centers for Disease Control and Prevention's Social Vulnerability Index measures a community's relative vulnerability to disaster, such as spills of hazardous chemicals, based upon 15 factors for socioeconomic status, age and disability, minority status, and housing and transportation access. According to the index, six of the eight census tracts that comprise East Baltimore fall within the most vulnerable communities nationwide.¹⁵

At the state level, neighborhoods in East Baltimore rank in the 95th percentile for proximity to hazardous waste, facilities with extremely hazardous substances, and wastewater discharges.

Managing Industrial Stormwater Risks: Findings from a Review of Maryland's Permitting and Enforcement

The Maryland Department of the Environment (MDE) regulates industrial stormwater pollution at nearly 1,000 sites throughout the state through its industrial stormwater permit.¹⁶ The permit is an example of a “general permit,” which allows the agency to establish a set of generic requirements for preventing stormwater pollution, and polluters in applicable industrial sectors may file a “notice of intent to comply” rather than apply for a permit specific to their individual operation. The general permit was adopted to regulate industrial stormwater in part to ease the administrative burden of designing individualized stormwater permits for the thousands of industrial sites nationwide.

Maryland's industrial stormwater permit requires industrial sites to:

- Apply for coverage under the permit or certify that stormwater is not discharged
- Submit facility information and develop a site-specific plan for controlling stormwater discharges
- Conduct quarterly inspections and annual evaluations on efforts to control stormwater pollution
- Adopt certain practices to prevent and minimize polluted stormwater discharges
- Conduct quarterly sampling of stormwater discharge for certain pollutants and report results to the MDE (limited to specific sectors)
- Treat 20 percent of impervious cover through engineered practices such as removing asphalt or installing retrofits to capture and treat stormwater (limited to sites larger than five acres)

The industrial stormwater permit requires all sites to minimize exposure of raw, final, or waste materials to stormwater discharge by implementing certain practices:

- Storing industrial materials and performing industrial activities inside or under storm-resistant coverings
- Housekeeping practices, such as proper chemical storage and prompt cleanup of spilled material, to keep exposed areas clean and free of potential contamination
- Regular inspection and maintenance of equipment to prevent spills and leaks
- Measures and planning to minimize potential leaks and spills
- Stabilization of exposed areas to prevent erosion, sediment pollution, or discharge of contaminated stormwater
- Diversion or containment of stormwater to prevent or reduce discharge of contaminated stormwater
- Cover salt piles

- Minimize generation of dust and off-site tracking of raw, final, or waste materials
- Removal of waste, garbage, and floatable debris from exposed areas
- Train all employees involved in activities that are exposed to stormwater or are necessary to control stormwater
- Any additional stipulated requirements based upon a site's sector classification
- Eliminate all non-stormwater discharges not covered by permit

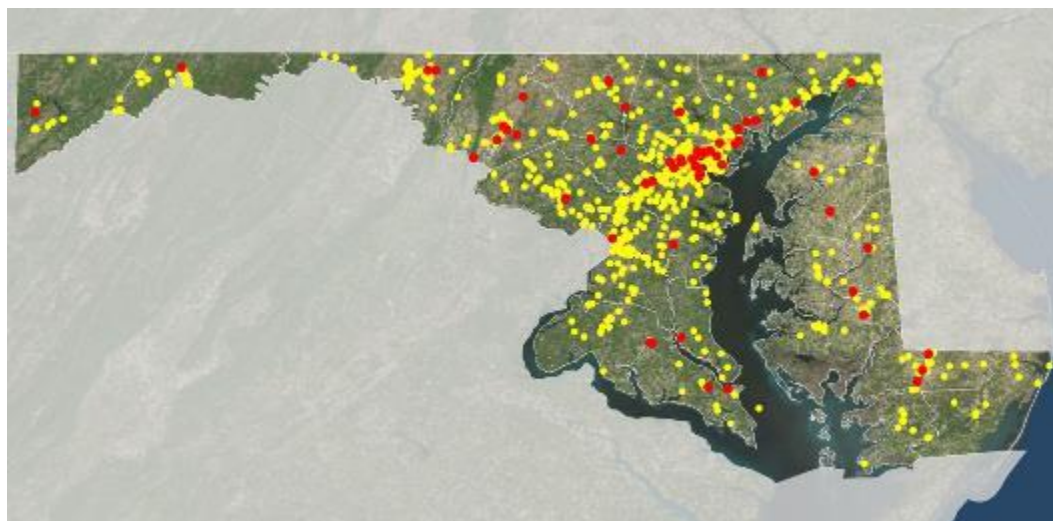
This less stringent permitting process essentially puts MDE in a “trust, but verify” mode, making it even more important that the agency has and deploys sufficient inspection resources to ensure compliance and demonstrates the political will necessary to deter future violations through strong enforcement and penalty assessments. Yet, a review of recent data shows that MDE is failing to hold polluters accountable as they continue to contaminate the environment and threaten the well-being of surrounding communities. For example, 76 facilities have yet to even apply for coverage under the general permit despite formal requests by MDE (see Appendix 4 for a full list of these facilities). WPN Recycling Company, LLC in Curtis Bay is an example of one of these facilities.

FINDING: More than one-third (65 of 180) of the facilities that self-reported pollution data from January 2014 to March 2017 reported discharging stormwater runoff with excessive levels of at least one pollutant, in such significant quantities that the law requires they take “corrective action.”

Six of the 29 industrial sectors covered under the industrial stormwater permit are required to test their stormwater runoff against a “benchmark value” (i.e., level of pollution over which an exceedance may impact water quality): chemical and allied products manufacturing and refining facilities, landfills and land application sites, automobile salvage yards, scrap recycling and waste recycling facilities, food and kindred products facilities (such as grain mills and fats and oils processors), and facilities that manufacture fabricated metal products. When sites correctly test stormwater discharges for pollution, and the results show that the discharges contain unacceptable levels of pollution over four quarters, they must take “corrective action” to find and resolve the causes that contribute to the excess pollution.¹⁷ Of the 180 regulated sites that submitted data to MDE from January 2014 until March 2017, 65 reported discharging stormwater runoff with excessive levels of at least one pollutant, on average over a four-quarter period, triggering these corrective action requirements (see Appendix 2).¹⁸

Based on a review of MDE inspection reports dated between January 1, 2014 and September 7, 2017, the MDE has inspected just 35 of the 65 sites (54 percent) that exceeded benchmark monitoring thresholds.

When results show that the discharges contain unacceptable levels of pollution over four quarters, sites must take “corrective action” to find and resolve the causes that contribute to the excess pollution.



Map7: Statewide distribution of sites (in red) reporting discharges that exceeded acceptable benchmark thresholds over four quarters and are therefore required to take "corrective action" to comply with the industrial stormwater permit. [View in high resolution.](#)

Table 1. Industrial stormwater discharge “benchmark” assessment thresholds and corresponding industrial sectors.

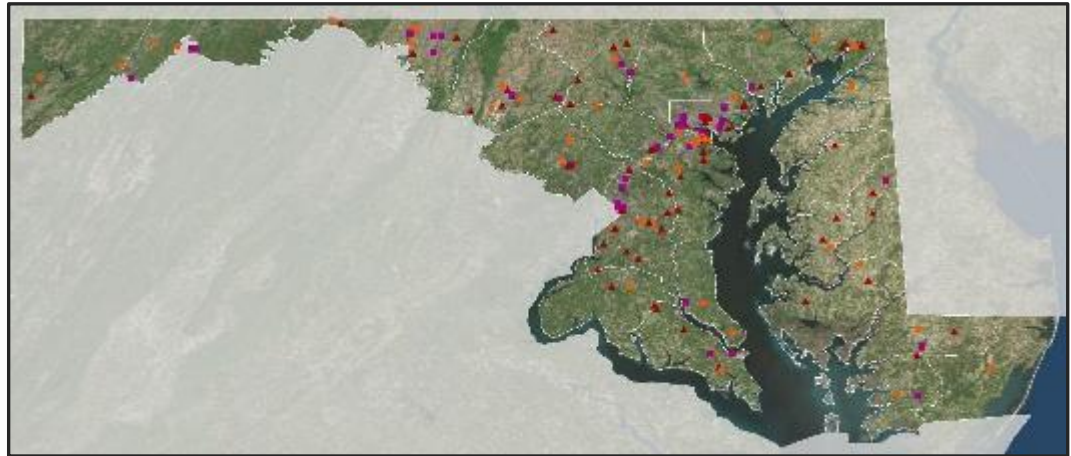
Pollutant	Benchmark concentration (mg/L)	Sectors Required to Conduct Benchmark Monitoring
Biological Oxygen Demand	30	Fats and Oils Products (U2)
Chemical Oxygen Demand	120	Scrap Recycling & Waste Facilities (N1); Fats and Oils Products (U2)
Nitrate + Nitrite Nitrogen	0.68	Fabricated Metal Products (AA); Agricultural Chemicals (C1); Industrial Inorganic Chemicals (C2); Soaps, Detergents, Cosmetics, and Perfumes (C3); Fats and Oils Products (U2)
Phosphorus	2	Agricultural Chemicals (C1)
Aluminum	0.75	Automobile Salvage Yards (M); Scrap Recycling & Waste Facilities (N1)
Copper	0.014*	Scrap Recycling & Waste Facilities (N1)
Iron	1	Industrial Inorganic Chemicals (C2); Landfills and Land Application Sites, except MSW Landfill areas closed in accordance with 40 CFR § 258.60 (L2); Automobile Salvage Yards (M); Scrap Recycling & Waste Facilities (N1)
Lead	0.082*	Agricultural Chemicals (C1); Automobile Salvage Yards (M); Scrap Recycling & Waste Facilities (N1)
Zinc	0.12*	Fabricated Metal Products (AA); Agricultural Chemicals (C1); Scrap Recycling & Waste Facilities (N1)
Total Suspended Solids	100	Landfills and Land Application Sites (L1), Automobile Salvage Yards (M), Scrap Recycling & Waste Facilities (N1); Grain Mill Products (U1); Fats and Oils Products (U2)

** Benchmark concentrations depend on the water hardness of the receiving waterbody. The concentrations shown above reflect hardness levels between 75-125 mg/L. As water hardness increases, the benchmark concentration increases.*

FINDING: Scrap metal recycling facilities, automobile salvage yards, and landfills are among the worst offenders of the industrial stormwater permit.

Scrap metal recycling sites accounted for 27 of the 65 sites (40 percent) required to take corrective action. These high-level polluters include all nine sites that exceeded benchmarks for lead contamination. Six other scrap metal recycling facilities failed to report any monitoring results during our review, meaning 33 of 73 scrap metal recycling facilities (45 percent) either

reported high levels of pollution or evaded accountability by failing to report. Scrap recycling facilities receive and process junked metal objects for resale or recycling. The process typically includes activities that result in discharge of pollutants through crushing, washing, or heating metal and other scrap. Scrap may be stored in heaps that are exposed to the elements, risking runoff of toxic metal fragments and other residues. Since these sites often receive scraps from third-party sellers, these facilities may be receiving scrap that is already contaminated with undisclosed or unknown toxic pollutants, such as chemical residues.



Map 8: Statewide distribution of landfills (orange dots), auto salvage yards (red triangles), and scrap metal recyclers (purple squares) covered under the Industrial Stormwater Permit. View in high resolution. [View in high resolution.](#)

Auto salvage yards account for another 17 the 65 sites requiring corrective action between January 2014 and March 2017. The sites discharged a number of monitored pollutants, including aluminum, iron, zinc, and total suspended solids. Fifteen other auto salvage yards failed to submit any monitoring data at all during our review period. These 31 non-compliant sites make up 43 percent of the 72 auto salvage yards covered by the industrial stormwater permit. Auto salvage yards receive and disassemble used, junked, or wrecked vehicles, stripping parts and components for resale or recycling. In the process, vehicles or components may be crushed onsite, releasing dust and fluids. Often, vehicles are stored onsite in varying states of disassembly while exposed to the elements. Auto fluids, such as oil and grease, and broken or worn components, including materials made with toxic metals, can be captured by stormwater and carried into neighboring communities and waterways.

Landfills account for 14 sites that either self-reported pollution at unacceptable levels and frequency or failed to report at all. The ten sites that discharged excessive amounts of pollution over four quarters reported high levels of iron (a pollutant toxic to fish) and of total suspended solids, which is an indicator of overall particulate pollution in water. However, landfills do more than receive and store household garbage. Some have permits to receive hazardous and toxic wastes from various industries and local

governments, including sewage sludge from wastewater treatment facilities. As a result, stormwater runoff over exposed portions of landfills can be contaminated with both biological and chemical wastes and residues.

FINDING: Stormwater pollution discharges are exceeding acceptable levels by substantial margins, often by several orders of magnitude.

These regulated sites typically discharge pollution at levels several times greater than those allowed in the industrial stormwater permit. Unfortunately, the actual quantity of pollutants that have been discharged above acceptable pollution levels, or its impact on Maryland waterways and exposed communities, cannot be determined by the regulators or the public, because MDE does not require these sites to calculate or measure the flow of their stormwater discharges. There were 39 instances of stormwater discharge that exceeded permissible or “benchmark” levels for copper, aluminum, zinc, and lead. Despite this, MDE has failed to inspect many of these sites, despite the fact that inspections can gauge a permittee’s performance in curbing stormwater pollution. The tables below provide examples of facilities that have reported unacceptable levels of copper, aluminum, zinc, and lead. These persistent, bioaccumulative, and toxic metals are harmful to aquatic life and are implicated in several developmental and degenerative human diseases.

These regulated industrial sites typically discharge pollution at levels several times greater than those allowed in the industrial stormwater permit.

Table 2. Examples of facilities exceeding acceptable levels of lead that have not been inspected by MDE as of September 2017

Facility and Address	Average Percent over Acceptable Levels
Cambridge Iron & Metal Co. 901 S Kresson St. Baltimore, MD 21224	717%
Maryland Metals 304 W. Church St. Hagerstown, MD 21740	479%
Decker’s Salvage Co. Inc. 2200 Berlin St. Baltimore, MD 21230	106%
Reliable Recycling Center 8005 Reichs Ford Rd. Frederick, MD 20678	169%
Recycling Center 47226 Whalen Rd. Patuxent River, MD 20670	30%

Table 3. Examples of facilities exceeding acceptable levels of copper that have not been inspected by MDE as of September 2017

Facility and Address	Average Percent over Acceptable Levels
Salisbury Scrap Metal, Inc. 909 Boundary St. Salisbury, MD 21801	1,564%
United Iron & Metal East, LLC 4300 Pulaski Hwy. Baltimore, 21224	286%
Frederick Scrap, Inc. 8097 Hillmark Ct. Frederick, MD 21704	198%
Charlotte Hall Metal & Scrap, LLC 37339 Carpenter Ln. Charlotte Hall, MD 20622	3,954%
Reliable Recycling Center 8005 Reichs Ford Rd. Frederick, MD 21704	3,244%

Table 4. Examples of facilities exceeding acceptable levels of zinc that have not been inspected by MDE as of September 2017

Facility and Address	Average Percent over Acceptable Levels
Canam Steel Corp. 4010 Clay St. Point of Rocks, MD 21777	672%
Crown Specialty Packaging 4606 Richlynn Dr. Belcamp, MD 21017	256%
Southern States 811 Mechanic St, North Cumberland, MD 21502	1,378%
Southern States 100 W. Elizabeth St. Woodsboro, MD 21798	336%
Cambridge Iron & Metal Co. 901 S Kresson St. Baltimore, MD 21224	1,038%

Table 5. Examples of facilities exceeding acceptable levels of aluminum that have not been inspected by MDE as of September 2017

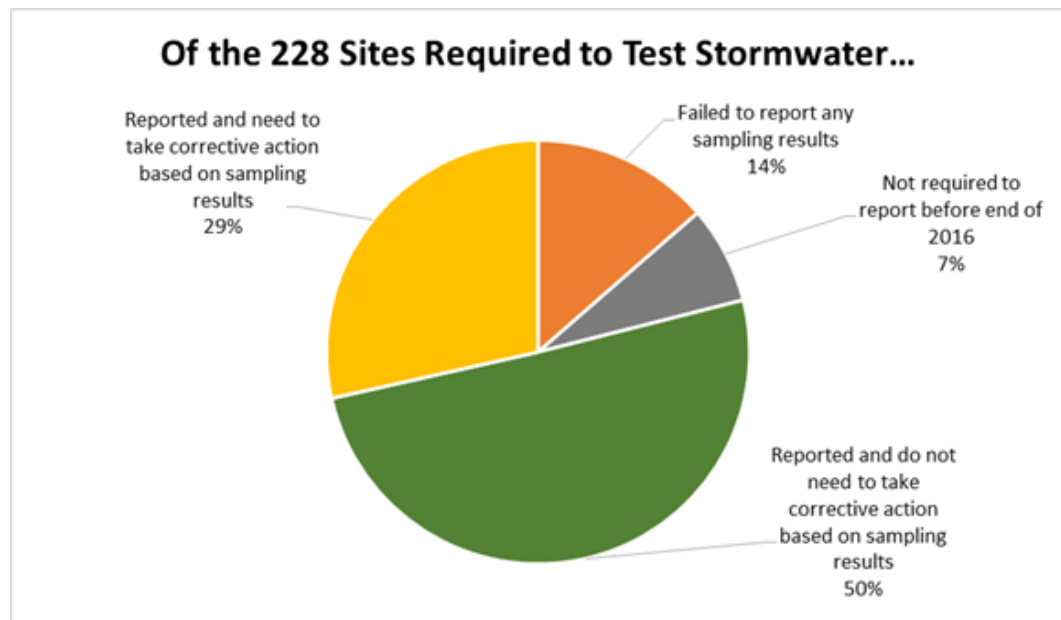
Facility and Address	Average Percent over Acceptable Levels
Potomac German Auto 4305 Lime Kiln Rd. Frederick, MD 21703	1,127%
WM Recycle America, Inc. 7175 Kit Kat Rd. Elkridge, MD 21075	432%
Maryland Metals, Inc. 449 Antietam Dr. Hagerstown, MD 21742	87%
Frederick Scrap 8097 Hillmark Ct. Frederick, MD 21704	150%
Cambridge Iron & Metal Co. 901 S Kresson St. Baltimore, MD 21224	862%

Table 6. Examples of facilities exceeding acceptable levels of total suspended solids that have not been inspected by MDE as of September 2017

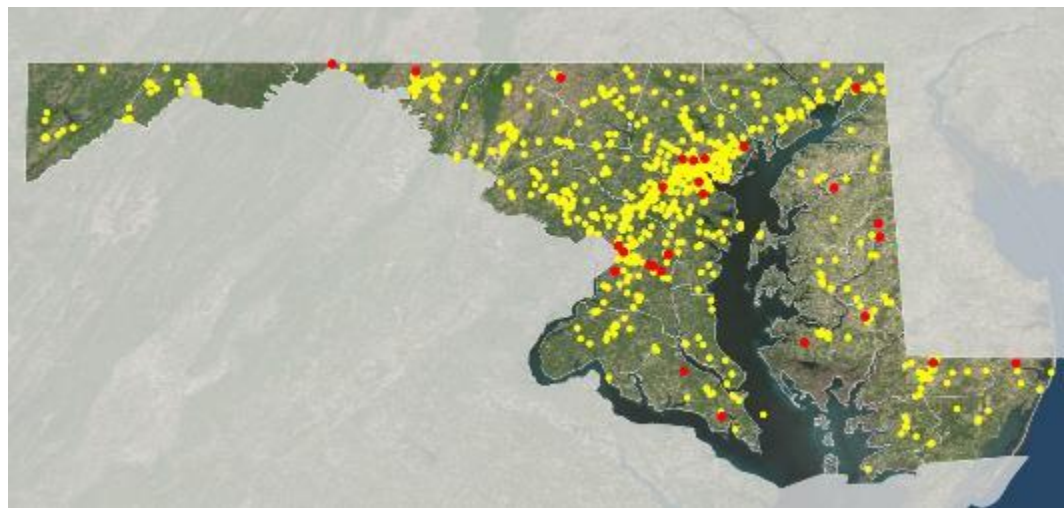
Facility and Address	Average Percent over Acceptable Levels
Harford Waste Disposal Center Expansion 3241 Scarboro Rd. Street, MD 24454	67%
Cambridge Iron & Metal Co. 901 S Kresson St. Baltimore, MD 21224	695%
Potomac German Auto, Inc. 4305 Lime Kiln Rd. Frederick, MD 21703	920%
WM Recycle America, LLC 7175 Kit Kat Rd. Elkridge, MD 21075	71%
United Iron & Metal East, LLC 4300 Pulaski Hwy. Baltimore, 21224	35%

FINDING: Missing, incomplete, and incorrect self-reported discharge monitoring data raise serious concerns about the extent of industrial stormwater pollution in Maryland and MDE’s ability to prevent it through targeted enforcement.

More than 14 percent (31 of 228) of sites that are required to test their stormwater discharge have failed to report results of any kind. For example, Brown Station Road Landfill, one of the largest municipal landfills in Maryland, has not reported any testing results despite being required to do so starting in the first quarter of 2016. Failure to comply with requirements to sample and report levels of pollution in stormwater discharge constitutes a violation of the industrial stormwater permit, but, based on a review of MDE inspection reports dated between January 1, 2014 and September 7, 2017, MDE has inspected only 13 of the 31 sites (42 percent) that failed to submit any benchmark monitoring results. For example, MDE has not inspected the Perdue Grain and Oilseed LLC facility in Bishop, MD, despite the fact that it has been permitted since September 29, 2014. (see Appendix 3).



Automobile salvage facilities ranked worst among all sectors, with 30 percent of that sector failing to submit any monitoring reports between January 2014 and March 2017. Of the 87 automobile salvage, scrap metal recycling, and landfill sites that submitted stormwater testing results during that period, 50 failed to report results for at least one of the required pollutants at a required outfall. These industrial sectors ranked as the top three offenders in violation of this permit requirement.



Map 9: Statewide distribution of sites (in red) required to test and report their stormwater discharges but have failed to report results of any kind, which is a violation of the industrial stormwater permit. [View in high resolution.](#)

A significant portion of sites that are testing and reporting their stormwater pollution are doing so in an incomplete or incorrect manner, which also constitutes violations of the permit. Of the 228 permit holders required to conduct benchmark monitoring, 67 facilities (29 percent) failed to report four quarters of data for each pollutant during our January 2014 – March

2017 review period. Of the 124 regulated sites required to report water hardness levels, which are critical for accurately determining how susceptible a waterway is to certain discharged toxic pollutants, 102 (82 percent) failed to do so. At least 130 sites submitted late stormwater testing results, and 42 sites simply reported no stormwater runoff instead of sampling as required.

FINDING: From July 2016 through June 2017, MDE conducted onsite inspections at 292 of the more than 900 industrial sites covered under the industrial stormwater permit and found noncompliance or violations during 70 percent of these inspections.

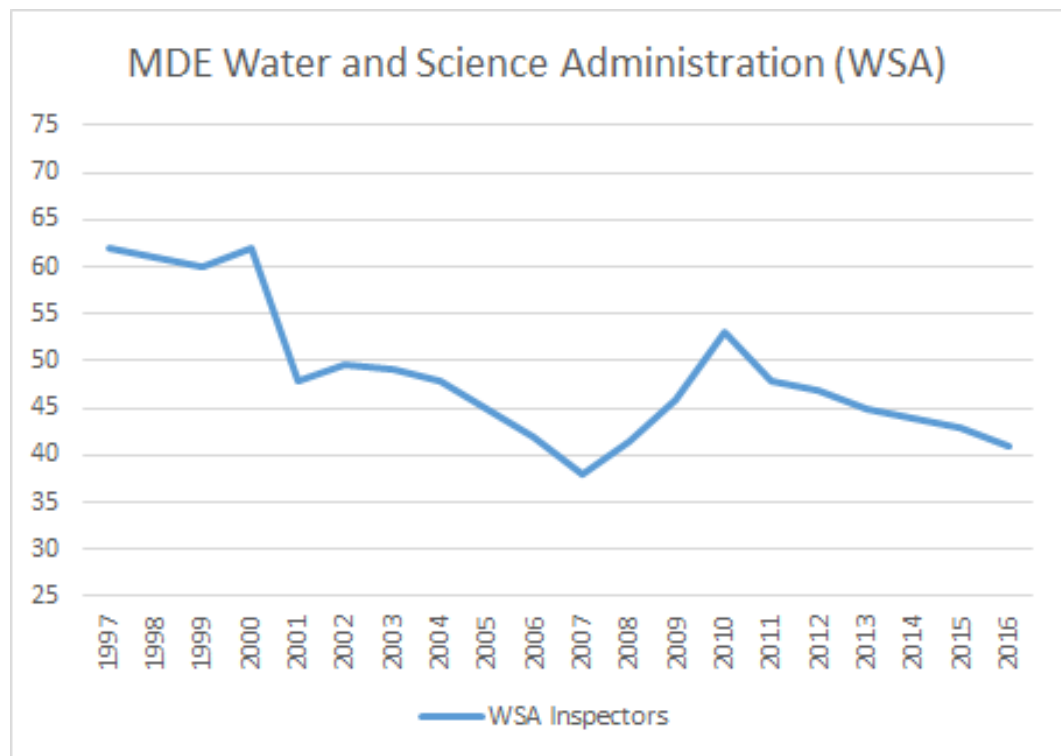
Between July 2016 and June 2017, only 30 percent of inspections at industrial sites covered under the permit found facilities that were in full compliance with permit requirements. This compliance rate is the second lowest among all permit classes issued by MDE's Water and Science Administration during this time period.¹⁹

Despite the relatively high rate of noncompliance found by inspectors at permitted facilities, the state has undertaken a small number of enforcement actions. According to state and federal records, MDE and the Office of the Attorney General have taken enforcement action against 13 facilities covered by the industrial stormwater permit since 2014. However, in at least nine of these cases, it is unclear whether the enforcement was directly related to violations of the industrial stormwater permit, and it is difficult to piece together information from these records.

FINDING: MDE needs more resources to promote compliance with the industrial stormwater permit through deterrence-based enforcement programs.

To protect Marylanders from the polluted runoff from these permitted industrial facilities, the state needs to increase the budget for inspection and compliance personnel and resources at MDE. The agency's general fund budget shrunk significantly between 2006 and 2016 – not just in inflation-adjusted terms, but in absolute terms – even as the state's total general fund budget increased by 30 percent over the same period. Since 2000, the agency lost one-third of its Water and Science Administration inspection staff, according to department data.

Despite the relatively high rate of noncompliance found by inspectors at permitted facilities, the state has undertaken a small number of enforcement actions.



The number of MDE inspectors for compliance with water pollution permitting has declined over the last twenty years.

With decreasing budgets, MDE cannot provide proper deterrence-based enforcement for the stormwater permit or other environmental laws. To properly detect violations requires a greater number of inspectors. And to ensure that the significant violations detected are elevated to either MDE administrative enforcement proceedings or Office of the Attorney General civil actions requires an increase in funding for enforcement personnel. Instead, MDE is trying to get by with its hamstrung resources.

According to a recent annual MDE report on enforcement, the agency had to use federal funding to hire two contract employees to perform inspections at industrial stormwater sites in Maryland.²⁰ Additionally, MDE currently depends on permitted facilities to submit quarterly discharge monitoring reports to record benchmark sampling results. These reports are ideally reviewed by MDE staff to track whether facilities are properly sampling and submitting their benchmark sampling data, as well as to determine whether corrective action is necessary. But without greater resources or effective deterrent enforcement, MDE has not even been able to ensure these benchmark monitoring results are submitted.

FINDING: Maryland does not make inspection and enforcement data readily accessible.

The public has a right to know what actions state and federal agencies are taking to protect them from violations of the Clean Water Act. Prior to the Trump administration assuming office in January 2017, EPA had led a push

Without greater resources or effective deterrent enforcement, MDE has not even been able to ensure these benchmark monitoring results are submitted.

in recent years to maximize the transparency and accessibility of public inspection, violation, and enforcement data. The “e-reporting” rule adopted by the Obama-era EPA mandates a greater percentage of data collected by states be submitted electronically. Many states, including a number of Maryland’s neighboring states like Delaware, New Jersey, New York, Pennsylvania, and Virginia, have also taken this electronic data and established searchable databases of inspection and/or enforcement data.²¹

Maryland does not maintain a comparable publicly accessible database of its environmental inspection and enforcement activities. The public can only obtain inspection and enforcement records through formal Public Information Act requests, and successful requests and meaningful review of the records may depend upon the requestor’s knowledge about how MDE operates its programs and tracks information. The state also publishes an annual report on enforcement activities that was first developed nearly 20 years ago. The report provides a valuable summary once per year, but this is wholly inadequate compared to the detailed and searchable databases found in other states and expected by citizens in the digital age. Moreover, making such data fully transparent and easily accessible to the public has become a basic expectation of EPA, because it knows that it deters pollution by adding pressure on facilities to remain in compliance with their permit. These data are also critical for neighborhood groups and advocates working to protect their communities from toxic pollution.

Case Studies of Auto Salvage, Metal Scrap, and Landfills

AMG Resources, Dundalk, Md.

AMG Resources is a metal recycling facility that self-reported excessive releases of lead and other toxic metals in its stormwater runoff for four quarters in 2016, triggering the industrial stormwater permit's requirements for corrective action. Over the four quarters of 2016, AMG Resources reported discharge concentrations from its main stormwater outfall that averaged 999 percent greater than the lead benchmark threshold of 0.082 mg/L. During that same timeframe, AMG also reported discharges that exceeded benchmarks for aluminum (0.75 mg/L), copper (0.014 mg/L), and iron (1.0 mg/L), on average, by 2,468 percent, 2,448 percent, and 6,365 percent, respectively.

According to MDE, AMG Resources (2415 Grays Rd, Dundalk, MD 21222) processes tinplate scraps to recover tin and steel on an 11-acre site and discharges polluted stormwater to multiple storm drains. Because the site is larger than five acres and is located within a Phase I Municipal Separate Storm Sewer System, AMG Resources is required to restore 20 percent of its existing untreated impervious cover by the end of the permit period in December 2018. The Dundalk site is one of several scrap metal processing facilities operated by AMG Resources Corporation, a multinational metal recycling corporation headquartered in Pittsburgh, Pennsylvania, with locations throughout the United States and in the United Kingdom.



The AMG Resources scrap metal processing facility adjoins other industrial sites and a golf course, and the site is approximately 2,000 feet west of Bear Creek (out of view above) and 2,000 feet east of Back River and the residential community of Edgemere (shown above, in the distance).

During the first quarter of 2016, AMG Resources reported discharge concentrations from its main stormwater outfall that were 2,827 percent greater than the lead benchmark threshold of 0.082 mg/L.

MDE last inspected the AMG Resources Dundalk site in January 2015, according to MDE records. This was preceded by at least three other inspections during a three-month period, during which inspectors flagged numerous violations of the industrial stormwater permit and other state environmental laws. While AMG Resources has maintained coverage under the industrial stormwater permit since 2003, an MDE inspector visiting the site 11 years later (in October 2014) discovered that AMG had never taken the fundamental first step in reducing industrial stormwater pollution by developing a required site-specific stormwater pollution prevention plan and failed to keep records of required annual employee stormwater prevention trainings, quarterly visual pollution and facility inspections, or annual comprehensive site evaluations. The inspector also uncovered that the site had excessive amounts of trash and debris at storm drains and that a pile of rusted scrap metal had encroached on a suspected protected non-tidal wetland (confirmed during a follow-up inspection). During its third inspection a month later, MDE staff found excessive amounts of sediment pollution at a stormwater outfall, among other problems. In January 2015, MDE determined that the site had rectified the various violations of the industrial stormwater permit. Despite MDE's determination that these violations have been resolved, the site's stormwater discharge in 2016 contained toxic metals that averaged at least 10 times higher than acceptable levels. Yet, as of September 2017, MDE has not inspected the facility since the January 2015 site visit.



An exposed pile of rusted scrap metal at AMG Resources encroaches on the protected 25-foot buffer area around a non-tidal wetland. Source: MDE Inspection Report, October 2014.

Y&R Eastside Auto Recycling, Baltimore, Md.

Y&R Eastside Auto Recycling is an auto salvage site that failed to report benchmark monitoring data, a violation of the industrial stormwater permit. According to MDE, the facility stores approximately 500 vehicles and dismantles around 10 vehicles per week.

MDE staff inspected the site (4725 Erdman Ave, Baltimore, MD 21205) as recently as June 16, 2017, and the inspection report confirms that the site had not conducted any of the benchmark monitoring required by its permit. MDE inspectors also identified several additional permit violations. For example, Y&R Eastside failed to conduct and record quarterly visual stormwater and facility inspections, annual comprehensive site evaluations, and annual employee stormwater pollution prevention trainings. The report also notes examples of leaking chemicals on site that have not been removed, cleaned, or contained, and discharge of water contaminated by washing automotive parts into the municipal sanitary sewer (without a city discharge permit). MDE staff had last inspected the site more than two years earlier, in February 2015. That inspection report flags the same violations of permit requirements for employee training, quarterly inspections, and annual site evaluations.



Y&R Eastside is located on Erdman Avenue, surrounded by other industrial and residential areas. Piles of automotive parts and numerous vehicles sit in various states of disassembly while exposed to precipitation. The site is largely comprised of exposed, unstabilized soil.

Y&R Eastside is located in a mixed industrial and residential area of Baltimore City's Erdman Avenue corridor. On one side of Erdman, there is Y&R Eastside, carryout restaurants, a petroleum tank farm, and a public special needs school, while on the other side of the street, there are numerous homes and an elementary school that together comprise the city's Armistead Gardens neighborhood.



A photo of a leaking automotive part at Y&R Eastside, a potential source of stormwater pollution and violation of the industrial stormwater permit. Source: MDE Site Inspection Report, June 16, 2017.

Quarantine Road Landfill, Baltimore, Md.

Quarantine Road Landfill is a municipal landfill owned and operated by the City of Baltimore where, for four quarters in 2016, stormwater discharges of iron and total suspended solids exceeded benchmarks, triggering the industrial stormwater permit's requirements for corrective action. According to MDE, the 201-acre site "serves as a waste acceptance landfill receiving from citizens, small haulers, commercial haulers, and other city agencies" and includes active cells for waste disposal, a citizen drop-off center, a 1,000-gallon aboveground storage tank of used oil, numerous 55-gallon drums of antifreeze and hydraulic fluid, 275-gallon totes of hydrochloric acid, and 5,000-gallon leachate tanks located near closed disposal of gypsum waste. The landfill actively disposes of contaminated ash from the Baltimore Refuse Energy Systems Company (BRESKO) trash incinerator in Baltimore, treated sludge from Baltimore's Patapsco wastewater treatment plant, and other city and private sources. BRESKO incinerator ash alone comprises 58 percent of the landfill by weight.



Uncontrolled incinerator ash waste deposited by stormwater below an active landfill cell at Quarantine Road landfill. The ash was later removed and buried on site. Source: MDE Inspection Report, March 2016.

The Quarantine Road landfill (6100 Quarantine Rd, Baltimore, MD 21226) was last inspected in April 2016. The inspection was preceded by at least four other inspections, during which MDE staff flagged numerous violations of the industrial stormwater permit. In September 2015, inspectors first noted violations related to the recordkeeping and monitoring requirements of the permit, including failure to comply with the benchmark monitoring requirement, failure to update the required site-specific stormwater pollution prevention plan, and the lack of adequate records for employee training, annual comprehensive site evaluations, and quarterly visual inspections. The MDE inspectors also flagged violations related to failing erosion and sediment controls, trash and floatable debris, and uncontrolled contaminated leachate discharges requiring immediate attention. In March 2016, MDE inspectors found that several of these violations persisted and new problems were uncovered, such as uncontrolled runoff of contaminated incinerator ash. As of the last inspection in April 2016, MDE inspectors noted violations related to failing erosion and sediment controls ongoing since September 2015, as well as inadequate controls and remediation of leachate discharges and the lack of quarterly visual inspection records.



Baltimore's 201-acre Quarantine Road landfill is mostly comprised of contaminated ash from the BRESKO incinerator (58 percent by weight). Polluted runoff discharges into the Curtis Bay portion of Baltimore's Patapsco River, shown at the top of this photo.

Recommendations for Improving Enforcement and Permitting of Industrial Stormwater

The risks industrial stormwater pollution poses to Maryland communities and natural resources warrant a more stringent response to widespread noncompliance. That response starts with MDE leadership and the governor seeking more resources and deploying them immediately to ensure compliance with the existing permit and deter future violations. The General Assembly bears the responsibility of not only allocating the needed funds, but also overseeing their use. And MDE has an opportunity in 2018 to update the industrial stormwater permit in ways that promote faster responses to failed pollution controls, better monitoring, and improved government transparency.

RECOMMENDATION: The governor and General Assembly must devote more funding and resources to MDE to hire and train site inspectors and compliance officers.

In April 2017, the General Assembly passed the fiscal 2018 budget with a provision requiring that a portion of MDE general funds be used to fill vacant inspection and enforcement positions. In addition to this \$200,000 increase for compliance staff, the budget language also required MDE to provide the General Assembly with quarterly reports assessing the ongoing adequacy of the department's enforcement resources. The \$200,000 in additional resources will help stem the tide of this long-term decline in MDE inspection and enforcement resources but falls far short of what is needed to return the agency to previous staffing levels. Underfunding inspection will give rise to gaps in enforcement, undetected violations, and excessive pollution.

RECOMMENDATION: MDE should pursue a deterrence-based enforcement strategy for industrial stormwater pollution that is informed by a broader vision of social justice and public health, and political leaders should unequivocally support that strategy.

MDE, EPA, state and local health departments, and agencies like the Maryland Occupational Safety and Health administration (MOSH) should target their resources to help environmentally stressed neighborhoods. Fenceline communities with substantial numbers of industrial polluters bear the brunt of structural socioeconomic challenges that impact their health in measurable ways. They deserve a greater focus by state and federal inspectors on industrial stormwater facilities in their communities and a prioritized enforcement response. MDE can use existing resources, such as EJScreen (an environmental justice mapping tool) and other tools and databases (e.g., the National Air Toxics Assessment mapping tool), to identify and better protect vulnerable communities from the cumulative impacts of multiple and overlapping environmental threats.

Best management practices required by workplace and environmental regulations can limit contaminated stormwater discharges into streams and

MDE has an opportunity in 2018 to update the industrial stormwater permit in ways that promote faster responses to failed pollution controls, better monitoring, and improved government transparency.

rivers and can also help limit worker and community exposure to lead dust and other harmful contaminants. Recognizing these co-benefits, Maryland wisely adopted specific dust control requirements in its stormwater permit to benefit both the environment and public health.²² However, the spread of industrial pollution in our environment can only be reduced if regulators more strongly enforce these practices and if more industrial sites comply with them. Maryland officials should reinforce inspection and enforcement resources for sites that pose a dual threat to the environment and public health. The governor should direct MDE to coordinate inspections with MOSH to address sites that generate pollution that potentially threaten both workers and surrounding communities.

The governor's role in promoting a better enforcement regime does not end with encouraging collaboration among executive agencies. Along with MDE leadership, the governor should unequivocally and frequently note that significant violations of the law will not be tolerated and demand that cases should advance quickly from evidence gathering to fines and corrective orders in an effort to protect people, the environment, and the "high-road" companies that are making investments to comply with the law.

RECOMMENDATION: MDE should revise the industrial stormwater permit to incorporate deadlines for polluters to take corrective action when current practices fail to protect local communities and waterways.

Maryland's industrial stormwater permit sets no deadlines for polluters to complete corrective actions.²³ Instead, permittees must merely show that they are in the process of "reviewing and revising control measures" without providing any timeframes to come into compliance. For unscrupulous permittees, this practice makes the law a paper tiger.

Other states have adopted an approach that does far more to protect public health. Washington State, for instance, has a general permit that directs sites to take one of three levels of corrective action depending on the triggering event.²⁴ Within 14 days of exceeding a benchmark level for any covered pollutant, a permittee must conduct an inspection to investigate the cause of the excess pollution and make appropriate revisions to its pollution plan. Exceeding a pollutant benchmark level for any three quarters of a calendar year triggers "level 3" corrective actions, which involve installing new treatment equipment or processes by certain enforceable deadlines.

California's general permit has a similar compliance framework for permittees to address excessively polluted stormwater.²⁵ Exceeding a benchmark level triggers "level 2" corrective actions, which direct sites to develop and submit a best management practice plan and to implement the plan within one year of submission. Violators are also required to provide a detailed technical report following implementation.

Maryland's industrial stormwater permit sets no deadlines for polluters to complete corrective actions.

The industrial stormwater permit requires regulated industrial sites to develop pollution plans that lay out, among other things, the permit-holder's procedures for curbing contamination of stormwater leaving the industrial site and best management practices to keep the site clean.

RECOMMENDATION: The next iteration of Maryland's industrial stormwater permit should adopt more realistic and more detailed monitoring requirements.

Dischargers of industrial stormwater bear a responsibility to neighboring communities and the public at large that is rooted in the monitoring and reporting requirements of the industrial stormwater permit. With nearly 1,000 permittees in Maryland, benchmark monitoring is a crucial method for MDE to keep track of an industrial site's ability to prevent stormwater pollution and target enforcement actions. Furthermore, because the permit directs regulated facilities to upload testing results that are made available on a publicly available website (U.S. EPA's Enforcement and Compliance History Online), this requirement provides one of the only ways for citizens to monitor the pollution coming from these sites.

Although testing and reporting serve as important tools for regulators and the public, only six of the 29 industrial sectors covered under the industrial stormwater permit are required to do so.²⁶ Oddly, several sectors are not required to test for pollutants that are commonly associated with the type of industrial activity found at their facilities. For example, lead often makes its way to landfills from paint, gasoline, and other discarded materials commonly found in landfills, but the industrial stormwater permit only requires landfills to test their stormwater for total suspended solids and iron, not lead or other toxic substances found in landfill refuse. Similarly, automobile salvage yards and scrap recycling facilities, both of which take in and store discarded vehicles, are not required to test their stormwater for oil and grease.

Maryland should adopt more realistic testing requirements to monitor the level of pollution in stormwater discharges by requiring certain sectors to monitor more or different pollutants and by requiring all sites to measure discharge flow. In states such as California and Washington, all facilities must test their discharged stormwater for a baseline of pollutants and conditions, such as sediment, oil and grease, and pH, and specific sectors have to monitor for other pollutants.²⁷ Furthermore, Washington requires additional testing for certain pollutants if a permit-holder's stormwater discharges into a waterway that is impaired by that same pollutant.²⁸

New York State does not even allow sites to obtain coverage under its industrial stormwater general permit if they discharge to a waterbody that has either been listed as impaired by the state or is part of a watershed for which a total maximum daily load (TMDL) has been developed if the cause of the impairment is a pollutant commonly associated with the industrial activity in question.²⁹

Maryland should also require sites to measure the flow-rate of sampled stormwater discharges (a low-cost test that does not require laboratory analysis) in order to generate otherwise unknown data on the quantity of

stormwater and pollutants (not just concentrations) that is generated by both individual sites but also by the industrial stormwater sector statewide.

Additionally, Maryland should require sites applying for coverage under the industrial stormwater permit to list all monitoring points as well as GPS coordinates and details of the corresponding stormwater discharged from each point on the permit application. This would ensure that the permittee is accurately testing all discharged stormwater before benchmark monitoring begins. Washington State's general permit application requires sites to provide coordinates of all monitoring points.³⁰ In New York, applicants must identify discharge points and the acreage of industrial activity exposed to stormwater for each discharge point.³¹ Maryland requires municipal stormwater permittees to map the extent of impervious surfaces within their much larger systems, and it would not be unreasonable to require the same for industrial stormwater permittees (in fact, the state may be able to assist permittees based on available satellite imagery and geospatial data created by state and local governments).

RECOMMENDATION: Maryland should create a publicly available reporting database and require permittees to electronically submit updated pollution prevention plans and compliance reports once per quarter.

The industrial stormwater permit requires regulated industrial sites to develop pollution plans that lay out, among other things, the permit-holder's procedures for curbing contamination of stormwater leaving the industrial site and best management practices to keep the site clean.³² Permittees must submit an initial pollution plan to MDE along with their Notice of Intent to Comply applications in order to be covered under the permit. The permit then requires facilities to keep an updated pollution plan on site at all times and to append reports to the plan after regular inspections. Ultimately, this pollution plan documents the site's performance in complying with the permit, and thus, the site's ability to curb stormwater pollution.

In Maryland, the public cannot access updated pollution plans, putting the onus solely on the state to ensure industrial sites are complying with the stormwater permit. The permit merely requires facilities to keep their pollution plans on site and does not require them to produce updated plans if requested by a member of the public. This provision keeps these pollution plans outside the scope of the Maryland Public Information Act, which only requires the government to provide records in its possession, and it prevents the public from finding out whether these industrial sites are complying with water pollution laws and regulations.

Moreover, requiring permittees merely to keep plans on site, rather than requiring that they submit them, strains an already understaffed MDE. Site inspectors have the burden of physically visiting these facilities in order to review their lengthy and detailed pollution plans, as well as required quarterly visual inspection reports, annual employee training records, and

The permit's requirement that facilities keep their pollution plans on site keeps these pollution plans outside the scope of the Maryland Public Information Act, and it prevents the public from finding out whether these industrial sites are complying with water pollution laws and regulations.

The only avenue for citizens to learn about MDE inspection and enforcement activities is through submission of formal records requests pursuant to Maryland's Public Information Act.

annual comprehensive site evaluations. This takes time away from the inspectors' schedules that could be used to visually inspect the site in question, as well as other regulated facilities.

Other states require industrial sites to submit their pollution plans to a publicly accessible website. California's general permit, for example, requires regulated industrial sites to electronically submit updated pollution plans and accompanying compliance reports through the State Water Board's "Storm Water Multiple Application Reporting and Tracking System" (SMARTS).³³ The public can access this online database as soon as materials are submitted by permittees. Similarly, in Washington State and New York State, permittees must make their pollution plans and compliance reports available online for public access or provide these documents to citizens within 14 days of a request.³⁴

Maryland should do as much by creating a publicly available database and requiring permittees to electronically submit updated pollution plans and compliance reports once per quarter. This would remove much of the unnecessary burden on the state's regulators to review documents on site and would allow the public to determine whether sites are controlling stormwater in ways that prevent excessive and harmful pollution in their communities.

RECOMMENDATION: MDE should join other states in posting inspection, enforcement, and settlement data on the state's Open Data Portal or on the MDE website in order to provide the public with the information they need about how pollution and permit violations are being addressed.

The only avenue for citizens to learn about MDE inspection and enforcement activities is through submission of formal records requests pursuant to Maryland's Public Information Act. These formal requests can incur substantial administrative fees to requestors, and even a preliminary response to requests may not come until a 30-day statutory deadline has elapsed. MDE already operates an internal electronic database for tracking inspection and enforcement activities and reports, so Maryland should invest in the necessary resources to make an appropriate portion of this data available through a public-facing and searchable database. MDE also fails to comply with a legal mandate to provide public notice and an opportunity for public comment for certain enforcement actions brought under the Clean Water Act.³⁵ In addition to a searchable database for inspections and enforcement, Maryland must also provide timely public notice and the opportunity for comment on MDE's enforcement settlement agreements.

Conclusion

Communities across Maryland are pockmarked with industrial facilities that contribute in valuable ways to our society, but also create serious public health and environmental risks. MDE, with its direct and indirect knowledge of conditions on these sites, technical expertise, and – most importantly – legal enforcement capabilities, bears a profound responsibility to ensure these facilities are complying with the law. The high rates of noncompliance we discovered in our review of over three years' worth of data provide a clear indication that numerous business owners are flouting the law, and systemic reform is necessary. Better leadership, more funding, an improved permit, and a deterrence-based, environmental justice-informed enforcement strategy would better protect Maryland's residents and environment, now and in the future.

Appendix 1: Methodology

The Center for Progressive Reform (CPR) and the Environmental Integrity Project (EIP) relied on downloadable data from the Maryland Department of the Environment's (MDE) Wastewater Permits Interactive Search Portal³⁶ to identify industrial facilities covered by and required to be covered by the industrial stormwater permit.³⁷ We downloaded this data on March 1, 2017, and searched for all permits with "12SW," "12SR," and "12SWRQST" as part of the state permit number. We also submitted public information requests for all stormwater pollution prevention plans (SWPPPs) and inspection reports for industrial stormwater facilities.

We cross-referenced the permit search results from MDE's permit database with each facility's SWPPP and MDE's facility summary sheets (available through the permit database) to identify the facilities that are required to conduct benchmark monitoring. These facilities were in the following industry sectors and subsectors:

- Chemical and allied products manufacturing and refining (C), subsectors for agricultural chemicals (C1), Industrial inorganic chemicals (C2), and soaps, detergents, cosmetics, and perfumes (C3).
- Landfills and land application sites (L), subsectors for landfills and land application sites (L1) and landfills and land application sites, except municipal solid waste landfill areas closed in accordance with 40 CFR 258.6 (L2).
- Automobile salvage yards (M).
- Scrap recycling facilities (N), subsector for scrap recycling and waste recycling facilities except source-separated (N1).
- Food and kindred products (U), subsectors for grain mill products (U1) and fats and oils products (U2).
- Fabricated metal products (AA).

We downloaded discharge monitoring data from the Environmental Protection Agency's Enforcement and Compliance History Online (ECHO) database³⁸ for the facilities identified in MDE's permit database on March 1, 2017. The discharge data covered the time period from January 1, 2014 through March 1, 2017, but results for the first quarter of 2017 were not available at the time we downloaded data from ECHO. If a facility identified in MDE's permit database had no data available in ECHO, and if it was issued a stormwater permit during or before the first quarter of 2016, we considered it a facility that failed to report any monitoring results.

Appendix 2 shows average exceedances of benchmark monitoring values. To determine these average exceedances, we assigned each pollutant a benchmark value listed in the industrial stormwater permit. Benchmarks for lead, copper, and zinc vary depending on stream hardness, and we adjusted benchmarks to reflect this when a facility reported hardness concentrations. For facilities that failed to report hardness, we used default benchmark values in the permit, which assume a hardness value between 75 and 125 mg/L. We set any non-detect values equal to zero, according to the stormwater permit. We calculated the percent difference between a facility's most recent four-quarter average concentration at each outfall and the benchmark value, and then took the average of the positive percent differences to get the average exceedance value shown in Appendix 2. If a facility failed to report results for one or more quarters, but exceeding the benchmark was mathematically certain over a four-quarter period (if the reported values were high enough that even if the facility reported a non-detect concentration, or 0, for a particular pollutant, the four-quarter average would still exceed the benchmark), we considered the facility as one that exceeded the benchmark value. Our use of the average of the average exceedances smooths results while also highlighting facilities that discharge polluted stormwater.

Appendix 2: Industrial Facilities with Stormwater Discharges that Exceed Acceptable Pollution Thresholds Based on Most Recent Four-Quarters, as of March 1, 2017

Facility (NPDES Permit No.)	Address	NPDES Permit No.	Sector(s)	Pollutant(s) (average % exceedance over benchmark value)
A&X Steel and Aluminum Co.	2825 Annapolis Rd. Baltimore, MD 21230	MDR002411	AA	Nitrite + Nitrate [as N] (171%)
Aberdeen Advanced Waste Water Treatment Plant	361 Michaels Ln. Aberdeen, MD 21001	MDR002142	C1, T	Iron (36%)
Alpha Ridge Municipal Landfill*	2350 Marriottsville Rd. Marriottsville, MD 21104	MDR003054	C1, L1, L2	Iron (58%)
AMG Resources Corp.	2415 Grays Rd. Dundalk, MD 21222	MDR000083	F, C2, N1	Aluminum (2,468%), Copper (2,448%), Lead (999%), Zinc (1,563%), Iron (6,365%), Nitrite + Nitrate [as N] (2,470%), Total Suspended Solids (200%)
B&B Auto Salvage, Ltd.*	18911 Central Ave. Upper Marlboro, MD 20774	MDR001120	M	Iron (161%)
Baltimore Recycling Center LLC*	1030 Edison Hwy. Baltimore, MD 21213	MDR001109	N1	Iron (32%)
Bennett Processing Facility	515 S Camden Ave. Fruitland, MD 21826	MDR002554	N1	Aluminum (1,412%), Copper (829%), Lead (30%), Zinc (408%), Total Suspended Solids (236%)
Cambridge Iron & Metal Co.	901 S Kresson St. Baltimore, MD 21224	MDR000682	M, N1	Aluminum (862%), Lead (717%), Zinc (1,038%), Chemical Oxygen Demand (60%), Iron (4,268%), Total Suspended Solids (695%)
Canam Steel Corp.*	4010 Clay St. Point of Rocks, MD 21777	MDR000917	AA	Zinc (672%), Nitrite + Nitrate [as N] (33%)
Carroll Scrap Metal, Inc.	3234 Baltimore Blvd. Finksburg, MD 21048	MDR002286	N1	Aluminum (46%), Copper (313%), Iron (78%)
Cecil County Central Landfill*	758 E Old Philadelphia Rd. Elkton, MD 21921	MDR000375	L1, L2	Iron (253%)
Central Acceptance Facility	10275 Beaver Dam Rd. Cockeysville, MD 20130	MDR001712	A, L1, N	Total Suspended Solids (412%)
Charlotte Hall Metal & Scrap, LLC*	37339 Carpenter Ln. Charlotte Hall, MD 20622	MDR003112	M, N1	Copper (3,954%), Zinc (410%)

Facility (NPDES Permit No.)	Address	NPDES Permit No.	Sector(s)	Pollutant(s) (average % exceedance over benchmark value)
Cianbro Corp. Baltimore Facility*	605 Pittman Rd. Curtis Bay, MD 21226	MDR002207	AA	Nitrite + Nitrate [as N] (13,879%)
Condon's Auto Parts	1218 Martin Dr. Westminster, MD 21157	MDR001452	M	Aluminum (83%), Iron (78%)
Crown Specialty Packaging*	4606 Richlynn Dr. Belcamp, MD 21017	MDR001597	AA	Zinc (256%)
Decker's Salvage Co., Inc.*	2200 Berlin St. Baltimore, MD 21230	MDR001912	M, N	Lead (106%), Iron (54%)
Dixon Valve and Coupling Co.*	800 High St. Chestertown, MD 21620	MDR000125	AA	Zinc (25%)
Eastern Sanitary Landfill Solid Waste Management Facility*	6257 Days Cove Rd. White Marsh, MD 21162	MDR000108	A, C2, L1, L2	Iron (994%), Phosphorus (69%)
Erachem Comilog, Inc.	601 Pittman Rd. Curtis Bay, MD 21226	MDR002531	C2	Nitrite + Nitrate [as N] (29%)
Erdman Auto Parts	5819 Erdman Ave. Baltimore, MD 21205	MDR001463	M	Aluminum (140%), Total Suspended Solids (44%)
Foskey Lane Transfer Station*	29631 Foskey Ln. Delmar, MD 21875	MDR003035	U1, U2	Nitrite + Nitrate [as N] (41%)
Frederick Scrap, Inc.*	8097 Hillmark Ct. Frederick, MD 21704	MDR003042	N1	Aluminum (150%), Copper (198%), Iron (150%)
Galvco of MD, LLC, d/b/a/ Baltimore Galvanizing	7110 Quad Ave. Rosedale, MD 21237	MDR003018	AA	Zinc (5,275%)
Garrett County Solid Waste Disposal & Recycling Facility*	3118 Oakland-Sang Run Rd. Oakland, MD 21550	MDR001183	L1, L2	Iron (65%), Nitrite + Nitrate [as N] (87%)
Georgetown Paper Stock	1404 Benson Ct. Baltimore, MD 21227	MDR001054	N1	Aluminum (730%), Chemical Oxygen Demand (150%), Iron (630%), Total Suspended Solids (300%)
Georgetown Paper Stock of Rockville, Inc.	14818 Southlawn Ln. Rockville, MD 20850	MDR001233	N1	Aluminum (101%), Copper (129%), Zinc (30%), Chemical Oxygen Demand (120%), Iron (161%), Total Suspended Solids (55%)
Harford Waste Disposal Center Expansion*	3241 Scarboro Rd. Street, MD 24454	MDR000028	L1, L2, C1, AD.a	Iron (410%), Nitrite + Nitrate [as N] (74%), Total Suspended Solids (67%)
Harvest RGI, LLC	7800 Kabik Ct. Woodbine, MD 21797	MDR002324	C1	Zinc (79%), Iron (1,665%), Nitrite + Nitrate [as N] (82%), Phosphorus (29%)
Heritage Crystal-Clean, LLC	6305 E. Lombard St. Baltimore, MD 21224	MDR001549	N1	Copper (13%), Zinc (12%)
Joppa Auto Salvage	422 Pulaski Hwy. Joppa, MD 21085	MDR002242	N1	Aluminum (149%), Zinc (154%), Iron (60%)

Facility (NPDES Permit No.)	Address	NPDES Permit No.	Sector(s)	Pollutant(s) (average % exceedance over benchmark value)
LKQ Pick Your Part (1206)	8125 Washington Blvd. Jessup, MD 20794	MDR002262	M	Iron (20%)
LKQ Pick Your Part (1207)	2801 Hawkins Point Rd. Baltimore, MD 21226	MDR001880	M	Iron (30%)
LKQ Pick Your Part (1209)	1706 Pulaski Hwy. Edgewood, MD 21040	MDR002259	M	Iron (75%)
Marty's Auto Parts	2100 Hollins Ferry Rd. Baltimore, MD 21230	MDR001375	M	Aluminum (780%), Iron (52%), Total Suspended Solids (2,098%)
Maryland Metals, Inc.*	304 W. Church St. Hagerstown, MD 21740	MDR000748	N1	Copper (3,872%), Lead (479%), Zinc (262%), Chemical Oxygen Demand (1,758%), Iron (448%)
Maryland Metals, Inc.*	449 Antietam Dr. Hagerstown, MD 21742	MDR000749	N1	Aluminum (87%), Copper (70%), Iron (405%)
Midshore Recyclers, Inc.	6012 Shiloh Church Hurlock Rd. Hurlock, MD 21643	MDR003039	M, N1	Copper (494%)
Montgomery Scrap Co.	15000 Southlawn Ln. Rockville, MD 20850	MDR000668	M, N1	Chemical Oxygen Demand (65%), Copper (392%), Zinc (132%)
North Point Recycling, LLC	2723 North Point Blvd. Dundalk, MD 21222	MDR001002	N1	Aluminum (723%), Iron (895%), Total Suspended Solids (240%), Zinc (190%)
Old Fairfield LLC/Baltimore Scrap Corp.	300 Vera St. Curtis Bay, MD 21226	MDR000094	N1	Aluminum (84%), Copper (395%), Iron (163%), Lead (96%), Zinc (544%)
Philadelphia Quartz Corp (PQ Corp)	1301 E. Fort Ave. Baltimore, MD 21230	MDR000432	C2	Nitrite + Nitrate [as N] (35%)
Poor Boys*	216 Earls Rd. Middle River, MD 21220	MDR002557	M	Aluminum (23%), Iron (18%)
Potomac German Auto, Inc.*	4305 Lime Kiln Rd. Frederick, MD 21703	MDR002069	M	Aluminum (1,127%), Iron (499%), Total Suspended Solids (920%)
Quarantine Road Municipal Landfill	6001 Quarantine Rd. Curtis Bay, MD 21226	MDR000257	L1, L2	Iron (325%), Total Suspended Solids (174%)
Ray Machine Co.	12 Lynbrook Rd. Middle River, MD 21220	MDR001547	AA	Nitrate + Nitrite [as N] (1.1%)
Reconserve of MD d/b/a Dext Co.	3220 Sun St. Curtis Bay, MD 21226	MDR001025	U1	Total Suspended Solids (53%)
Recycle One Processing & Transfer Station	4700 Lawrence St. Hyattsville, MD 20781	MDR002352	N1	Copper (66%), Chemical Oxygen Demand (109%)
Recycling Center*	47226 Whalen Rd. Patuxent River, MD 20670	MDR002453	N1	Copper (73%), Lead (30%)

Facility (NPDES Permit No.)	Address	NPDES Permit No.	Sector(s)	Pollutant(s) (average % exceedance over benchmark value)
Reich's Ford Road Landfill*	9031 Reichs Ford Rd. Frederick, MD 21704	MDR002366	L1, L2	Iron (53%)
Reliable Recycling Center*	8005 Reichs Ford Rd. Frederick, MD 21704	MDR002268	N1	Copper (3,244%), Lead (169%), Zinc (272%)
Salisbury Scrap Metal, Inc.*	909 Boundary St. Salisbury, MD 21801	MDR002278	N1	Aluminum (194%), Copper (1,564%), Zinc (285%), Iron (160%)
Schultz & Sons Salvage, Inc.	24769 Meeting House Rd. Denton, MD 21629	MDR001140	M, N1	Copper (3,754%)
Southern States*	107 Backlandng Rd. Preston, MD 21655	MDR002131	C1	Zinc (63%), Iron (320%), Nitrite + Nitrite [as N] (4,215%), Phosphorus (95%)
Southern States*	811 Mechanic St, North Cumberland, MD 21502	MDR002202	C1	Zinc (1,378%), Nitrite + Nitrate [as N] (185%), Iron (213%)
Southern States*	500 E South St. Frederick, MD 21705	MDR002203	C1	Iron (142%), Nitrite + Nitrate [as N] (6,009%), Phosphorus (89%)
Southern States*	100 W. Elizabeth St. Woodsboro, MD 21798	MDR002204	C1	Zinc (336%), Iron (322%), Nitrite + Nitrate [as N] (4,911), Phosphorus (179%)
Southern States*	29815 Three Notch Rd. Charlotte Hall, MD 20622	MDR002200	C1	Iron (28%), Nitrate + Nitrite [as N] (1%)
Southern States*	1002 Hope Rd. Centreville, MD 21617	MDR002206	C1	Zinc (127%), Iron (145%), Nitrite + Nitrate [as N] (7,159%), Phosphorus (200%)
St. Andrews Area C Municipal Landfill	44825 St. Andrews Church Rd. California, MD 20619	MDR000656	M, L1, L2	Iron (414%), Total Suspended Solids (41%)
Super Salvage, Inc.	130 Skipjack Rd. Prince Frederick, MD 20678	MDR002414	N1	Aluminum (85%), Copper (794%), Lead (261%), Zinc (392%)
United Iron & Metal East, LLC*	4300 Pulaski Hwy. Baltimore, 21224	MDR002535	M, N1	Aluminum (179%), Copper (286%), Zinc (213%), Chemical Oxygen Demand (44%), Iron (241%), Total Suspended Solids (35%)
USALCO, LLC	2601 Cannery Ave. Curtis Bay, MC 21226	MDR000251	C2	Nitrite + Nitrate [as N] (44%)
Western Acceptance Facility	3310 Transway Rd. Halethorpe, MD 21227	MDR001711	L1, L2	Iron (499%), Total Suspended Solids (920%)
WM Recycle America, LLC*	7175 Kit Kat Rd. Elkridge, MD 21075	MDR002079	N1	Aluminum (432%), Chemical Oxygen Demand (162%), Iron (388%), Total Suspended Solids (71%)

Notes

* Indicates that MDE has not inspected the facility between January 2014 and September 2017, based on a review of data from EPA's ECHO database and inspection reports from MDE.

Benchmark concentration exceedances are not considered permit violations, but they do trigger corrective action requirements. The percentages exceeding benchmark values, show above, are "averages of averages." We calculated the four-quarter average concentration for each outfall at a facility and the resulting percent difference compared to the benchmark value. We then calculated the average percent difference across the outfalls that exceeded the benchmark. Quarterly sampling results may be much higher. The percentages above are based on a) discharge monitoring data available in the Environmental Protection Agency's Enforcement and Compliance History Online (ECHO) database as of March 1, 2017, and b) benchmark values contained in the industrial stormwater permit, and if stream hardness data were reported, site-specific benchmark values for copper, lead, and zinc, calculated in accordance with Appendix C of the permit. Four-quarter averages were calculated in accordance with methods outlined in the permit.

Appendix 3: Facilities That Have Not Submitted Discharge Monitoring Results Required by the Industrial Stormwater Permit, as of March 1, 2017

Facility	Address	NPDES Permit Number	Sector	Permit Issue Date	Pollutants Required
B&H New & Used Auto Parts, Inc.	1500 W Pulaski Hwy. Elkton, MD 21921	MDR000578	M	3/19/2015	Aluminum, Iron, Lead, Total Suspended Solids
Bennett and Cohey Auto Salvage & Recycling*	5639 Church Hill Rd. Chestertown, MD 21620	MDR001134	M, N1	1/27/2015	Chemical Oxygen Demand, Copper, Lead, Aluminum, Iron, Zinc, Total Suspended Solids
Bill's Auto Parts	7930 Solley Rd. Glen Burnie, MD 20160	MDR003093	M	1/19/2016	Aluminum, Iron, Lead, Total Suspended Solids
Brown Station Road Sanitary Landfill	3500 Brown Station Rd. Upper Marlboro, MD 20774	MDR000401	L	7/14/2015	Iron, Total Suspended Solids
Cambridge Auto Recycling, Inc.	2057 Church Creek Rd. Cambridge, MD 21613	MDR002407	M	1/27/2015	Aluminum, Iron, Lead, Total Suspended Solids
Central Small Car Salvage*	104 N Crain Hwy. Upper Marlboro, MD 20772	MDR000841	M	3/30/2015	Aluminum, Iron, Lead, Total Suspended Solids
Champion Used Auto Parts, LLC*	45864 Usher Ln. Great Mills, MD 20618	MDR001696	M	2/10/2015	Aluminum, Iron, Lead, Total Suspended Solids
Chucks Used Auto Parts, Inc.	4722 Saint Barnabas Rd. Marlow Heights, MD 20748	MDR001112	M	9/17/2017	Aluminum, Iron, Lead, Total Suspended Solids
Command Technology	7604 Energy Pkwy. Curtis Bay, MD 21226	MDR002550	AA	2/27/2015	Nitrate + Nitrite [as N], Zinc
Curtis Creek Processing Facility & Transfer Station	23 Stahl Point Rd. Curtis Bay, MD 21226	MDR002315	L	12/19/2014	Total Suspended Solids
Doug's Auto Recycling	516-A Earls Rd. Middle River, MD 21220	MDR001776	M	1/12/2015	Aluminum, Iron, Lead, Total Suspended Solids
Eagle Auto Salvage, Inc.	216 S Main St. Greensboro, MD 21639	MDR001141	M	10/1/2015	Aluminum, Iron, Lead, Total Suspended Solids

Facility	Address	NPDES Permit Number	Sector	Permit Issue Date	Pollutants Required
EJP, LLC*	3040 Pulaski Hwy. North East, MD 21901	MDR002309	M	2/24/2015	Aluminum, Iron, Lead, Total Suspended Solids
Emanuel Tire, LLC*	1300 Moreland Ave. Baltimore, MD 21216	MDR000777	N1	2/12/2015	Chemical Oxygen Demand, Copper, Lead, Aluminum, Iron, Zinc, Total Suspended Solids
Evapco, Inc.*	5151 Allendale Ln. Taneytown, MD 21787	MDR000458	AA, AB	2/10/2015	Nitrate + Nitrite [as N], Zinc
Foreign Car Parts, Inc.*	2810 Brown Station Rd. Upper Marlboro, MD 20772	MDR000844	M	2/25/2014	Aluminum, Iron, Lead, Total Suspended Solids
Glatfelter Pulp Wood Co. – Delmar*	29809 Connelly Mill Rd. Delmar, MD 21875	MDR000688	AA	9/9/2014	Nitrate + Nitrite [as N], Zinc
Green Kinetics Gateway, LLC Material Recovery Facility*	Earth Core Rd. Hagerstown, MD 21740	MDR002501	N1	10/13/2015	Chemical Oxygen Demand, Copper, Lead, Aluminum, Iron, Zinc, Total Suspended Solids
Hancock Closed Landfill*	6502 Hess Rd. Hancock, MD 21750	MDR001294	L1	9/3/2014	Total Suspended Solids
Kenilworth Foreign Car Parts*	5601 Sheriff Rd. Capitol Heights, MD 20743	MDR001366	M	3/27/2015	Aluminum, Iron, Lead, Total Suspended Solids
Marlboro Auto Parts*	4820 Largo Rd. Upper Marlboro, MD 20772	MDR001933	M	11/10/2014	Aluminum, Iron, Lead, Total Suspended Solids
Metro Re-Uz-It Co., Inc.*	3401 Kenilworth Ave. Hyattsville, MD 20781	MDR001357	N1	1/12/2015	Chemical Oxygen Demand, Copper, Lead, Aluminum, Iron, Zinc, Total Suspended Solids
Perdue Farms Feedmill*	37 Delaware Ave. Hurlock, MD 21643	MDR000484	U1	2/13/2015	Total Suspended Solids
Perdue Grain & Oilseed, LLC – Bishop*	9924 Bishop Rd. Bishopville, MD 21813	MDR000733	U1	9/29/2014	Total Suspended Solids
Precoat Metals Div. of Sequa Corp.*	6754 Santa Barbara Ct. Elkridge, MD 21075	MDR002005	AA	1/16/2015	Nitrate + Nitrite [as N], Zinc
Raloid Machine Co., Inc.	109 Wabash Ave. Reisterstown, MD 21136	MDR003031	AA	2/4/2016	Nitrate + Nitrite [as N], Zinc

Facility	Address	NPDES Permit Number	Sector	Permit Issue Date	Pollutants Required
Resh Road/Washington County Landfill*	13300 Greencastle Pike Hagerstown, MD 21740	MDR001295	L1	9/5/2014	Total Suspended Solids
Southern Maryland Used Auto Parts, Inc.*	26470 Three Notch Rd. Mechanicsville, MD 20659	MDR000842	M	3/10/2015	Aluminum, Iron, Lead, Total Suspended Solids
Y & R Eastside Auto Recycling	4725 Erdman Ave. Baltimore, MD 21205	MDR001149	M	2/8/2016	Aluminum, Iron, Lead, Total Suspended Solids

Notes

* Indicates that MDE has not inspected the facility between January 2014 and September 2017, based on a review of data from EPA's ECHO database and inspection reports from MDE.

This analysis is based on discharge monitoring data available in EPA's ECHO database as of March 1, 2017. Facilities are required to begin sampling and reporting results starting the first full reporting period six months after permit issuance. For example, a facility that obtained permit coverage in February 2016 (first quarter) would have to begin collecting and reporting sampling results by October 2016 (fourth quarter). This list excludes facilities that were not required to report until 2017.

Appendix 4: Facilities Identified by MDE as Having to Obtain Coverage Under the Industrial Stormwater Permit, But Have Not Applied as of March 1, 2017

Facility Name	Address	Date
Brandywine Recycling	12505 Crain Hwy Brandywine, MD 20613	9/9/2016
2041 Kurtz Ave	2041 Kurtz Ave Pasadena, MD 21122	8/24/2016
301 East Cromwell Street, LLC	301 E Cromwell St Baltimore City, MD 21230	4/12/2016
A P Express	5140 Lawrence Pl Hyattsville, MD 30892	9/2/2016
Access Demolition Contracting Inc	3437 9th St Brooklyn, MD 21225	8/8/2016
Accurate Machine Service Co	7922 E Baltimore St Baltimore, MD 21224	2/4/2016
Ackerman & Baynes, LLC	4211 Erdman Ave, Ste 15 Baltimore, MD 21213	12/14/2015
AGCO Corporation - Baltimore Assembly Center	1704 Trimble Rd Edgewood, MD 21040	1/6/2016
American Urethane Inc	1905 Betson Ct Odenton, MD 21113	7/25/2016
AMM Corporation	11100 Day Rd, Southeast Cumberland, MD 21502	8/1/2016
Andrews Garage	1227 Revolution St Havre De Grace, MD 21078	3/7/2016
Antenna Research Associates Inc	11317 Frederick Ave Beltsville, MD 20705	8/1/2016
APG-Edgewood Area	Edgewood Area-Aberdeen Proving Ground Aberdeen Proving Ground, MD 21010	6/24/2016
Automotive Machine	310 Baltimore Ave Oakland, MD 21550	3/31/2016
B & P Environmental LLC	1230 Cronson Blvd Crofton, MD 21114	5/27/2016
B. Underwood Used Auto Parts, LLC	5701 Spring St Clinton, MD 20735	3/7/2016
Baker & Kerr Inc.	16230 Branch Ct Upper Marlboro, MD 20774	8/9/2016
Benjer Inc. - Middle River	110 Earls Road Middle River, MD 21220	7/21/2016
Boat Doctors Quarters	515 Island Point Rd Baltimore, MD 21224	2/2/2016
Boordy Vineyards Inc	12820 Long Green Pike Hydes, MD 21082	4/8/2016
C & S Ornamental Iron Company, Inc.	157 N Haven St Highlandtown, MD 21224	6/6/2012
Chesapeake Waste Industries Office/Shop	Brick Kiln Road Salisbury, MD 21801	7/21/2016
City of Takoma Park Department of Public Works	31 Oswego Ave Silver Spring, MD 20910	3/24/2016
Clark Machine	1000 Todds Lane Rosedale, MD 21237	12/15/2015
Cloverland Green Spring Dairy	2701 Loch Raven Rd Baltimore, MD 21218	4/12/2016
CNX Marine Terminal	3800 Newgate Ave Baltimore, MD 21224	7/27/2015
Coca-Cola Refreshments	7210 Preston Gateway Dr Hanover, MD 21076	9/19/2016
Connect Group Inc	1110 Benfield Blvd, Ste M Millersville, MD 21108	9/1/2016
Danko Arlington, Inc.	4800 E Wabash Ave Baltimore, MD 21215	1/27/2016
Dave Wheatley Enterprises Inc	1202 Technology Dr, Ste H Aberdeen, MD 21001	10/6/2016
DaVita Foods	21726 Academy Terrace Hagerstown, MD 21740	7/5/2016

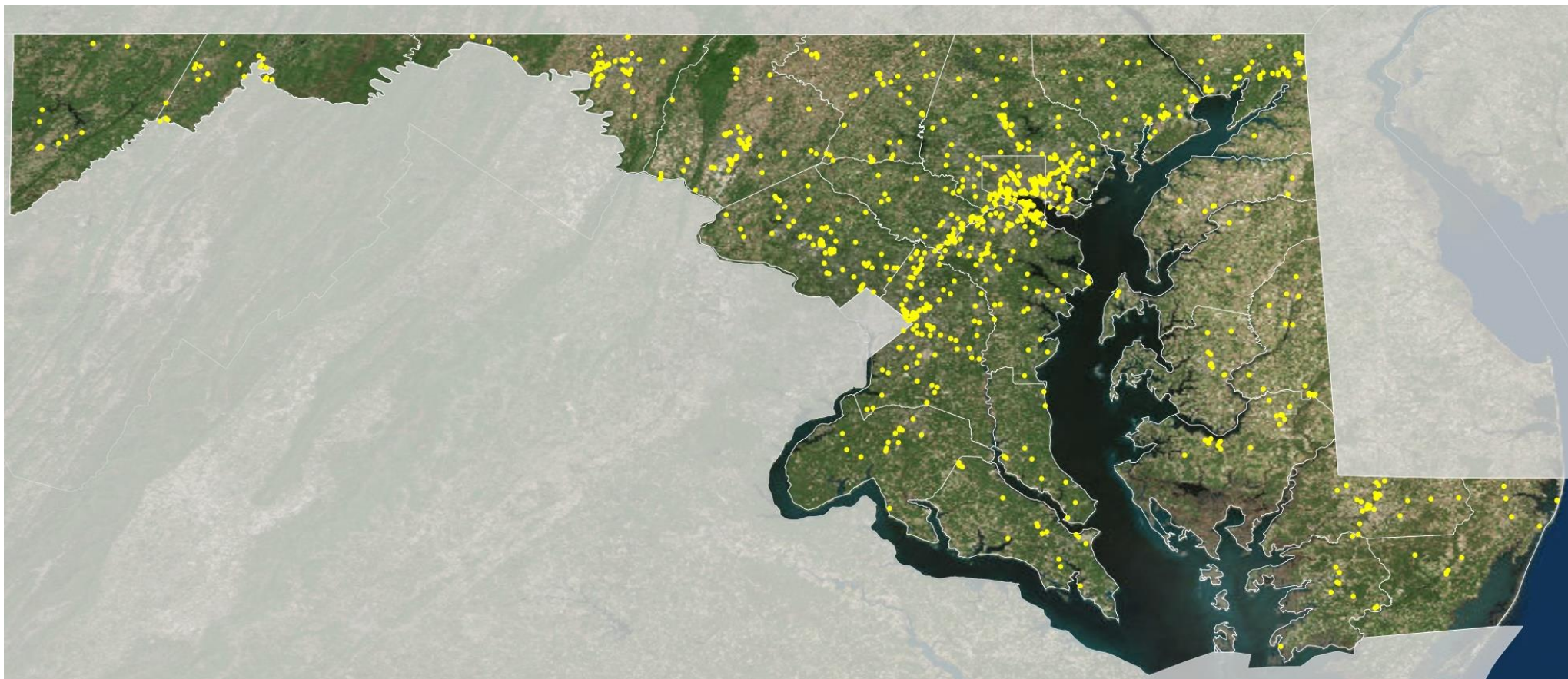
Facility Name	Address	Date
Delmarva Electric Motors And Machines	111 Gordy Salisbury, MD 21804	7/21/2016
Dickerson Machine	510 Orem's Rd, Ste B Essex, MD 21221	10/6/2016
Dietz & Watson	3330 Henry G Parks Jr Circle Baltimore, MD 212157818	9/1/2016
East West Auto Parts	7249 Gaither Rd Sykesville, MD 21784	9/1/2016
Encore Recycling	13211 Virginia Manor Rd Laurel, MD 20707	7/26/2016
Engineered Systems & Products	11438 Cronridge Dr, Ste O Owings, MD 21117	9/6/2016
Fingles MetalWorks, Inc	2256 Reisterstown Rd Baltimore, MD 21217	9/2/2016
Frank's Scrap Metal	2306 Perkins Pl Silver Spring, MD 20910	7/21/2016
Garrett Container Systems Inc	123 N Industrial Park Accident, MD 21520	8/9/2016
Goetzes Candy Company	3900 Monument St, East Baltimore, MD 21205	12/14/2015
Gould Fiber Optics	1121 Benfield Blvd Millersville, MD 21108	8/1/2016
Hale Transportation	7020 Quad Ave Rosedale, MD 21237	7/18/2016
Harford County Auto Parts	3610 Conowingo Rd Street, MD 21154	11/7/2016
Hidey's Landscape Supply Yard	3112 Ridge Rd Westminster, MD 21157	7/15/2016
Hoffman's Quality Meats & Catering	13225 Cearfoss Pike Hagerstown, MD 21740	4/11/2016
Hunter Douglas Manufacturing addition	1 Hunter Douglas Dr Cumberland, MD 21502	11/7/2016
Indusco	1200 W Hamburg St Baltimore, MD 21230	8/1/2016
Innovative Plastic Solutions	1306 Governors Ct Abingdon, MD 21009	11/7/2016
Lakewood Manufacturing	1241 New Windsor Rd Westminster, MD 21158	8/9/2016
Lincoln Contracting & Equipment Co Inc.	115 Elizabeth St Cumberland, MD 21502	8/1/2016
Marchant Machine Corporation	11325 Maryland Ave Beltsville, MD 20705	8/1/2016
Metropolitan Board Installers	11589 Edmonston Rd Beltsville, MD 20705	11/7/2016
Modern Junk and Salvage	1423 N Fremont Ave Baltimore, MD 21217	2/2/2016
Mullys Brewery	141 Schooner Ln Prince Frederick, MD 20678	9/1/2016
New England Motor Freight Inc	3 Center Dr North East, MD 21901	7/25/2016
Office Paper Systems Inc.	7650 Airpark Rd Gaithersburg, MD 20879	7/20/2016
Performance Food Group	1520 Elkton Rd Elkton, MD 21921	6/2/2015
Pixelligent Technologies	6411 Beckley St Baltimore, MD 21224	7/21/2016
Port City Press	1323 Greenwood Rd Pikesville, MD 21208	2/1/2016
Potomac Metal & Supply Inc	12001 Siebert Rd, SE Cumberland, MD 21502	8/1/2016
Race Auto Parts Recyclers	7704 Race Rd Jessup, MD 20794	3/7/2016
Raff Embossing & Foilcraf	5124 Frolich Ln Hyattsville, MD 20781	11/9/2016
Real Scrap	2201 Elmira St Baltimore, MD 21230	7/25/2016
Ridgely Auto Sales Inc	11575 Ridgely Rd Ridgely, MD 21660	1/30/2017

Facility Name	Address	Date
Roma Sausage Co	6801 Eastern Ave, Ste 230 Baltimore, MD 21224	6/1/2016
Schauber's Lumber & Saw Mill	1401 McGinnes Rd Chestertown, MD 21620	9/1/2016
Shadygrove Recycling	11268 Old Baltimore Pike Beltsville, MD 20705	9/2/2016
Ship Point Machine Co	St Mary's Indl Pk Hollywood, MD 20636	3/7/2016
Titan Yachts Inc	13053 Old Stage Rd, Ste 2 Bishopville, MD 21813	9/1/2016
Twigg Used Cars and Parts	11606 Christie Rd, SE Cumberland, MD 21502	9/1/2016
W. R. Grace & Co. - Davison Chemical	5500 Chemical Rd Curtis Bay, MD 21226	9/17/2014
W. R. Grace & Company	7500 Grace Dr Columbia, MD 21044	12/3/2015
WPN Recycling Company, LLC	5101 Andard Ave Curtis Bay, MD 21226	10/9/2015
Wynnewood Recreation Center	5731 Oakland Rd Baltimore, MD 21227	8/12/2014
Zentech Manufacturing Inc	6980 Tudsbury Rd Windsor Mill, MD 21244	7/25/2016

Appendix 5: Map Detail

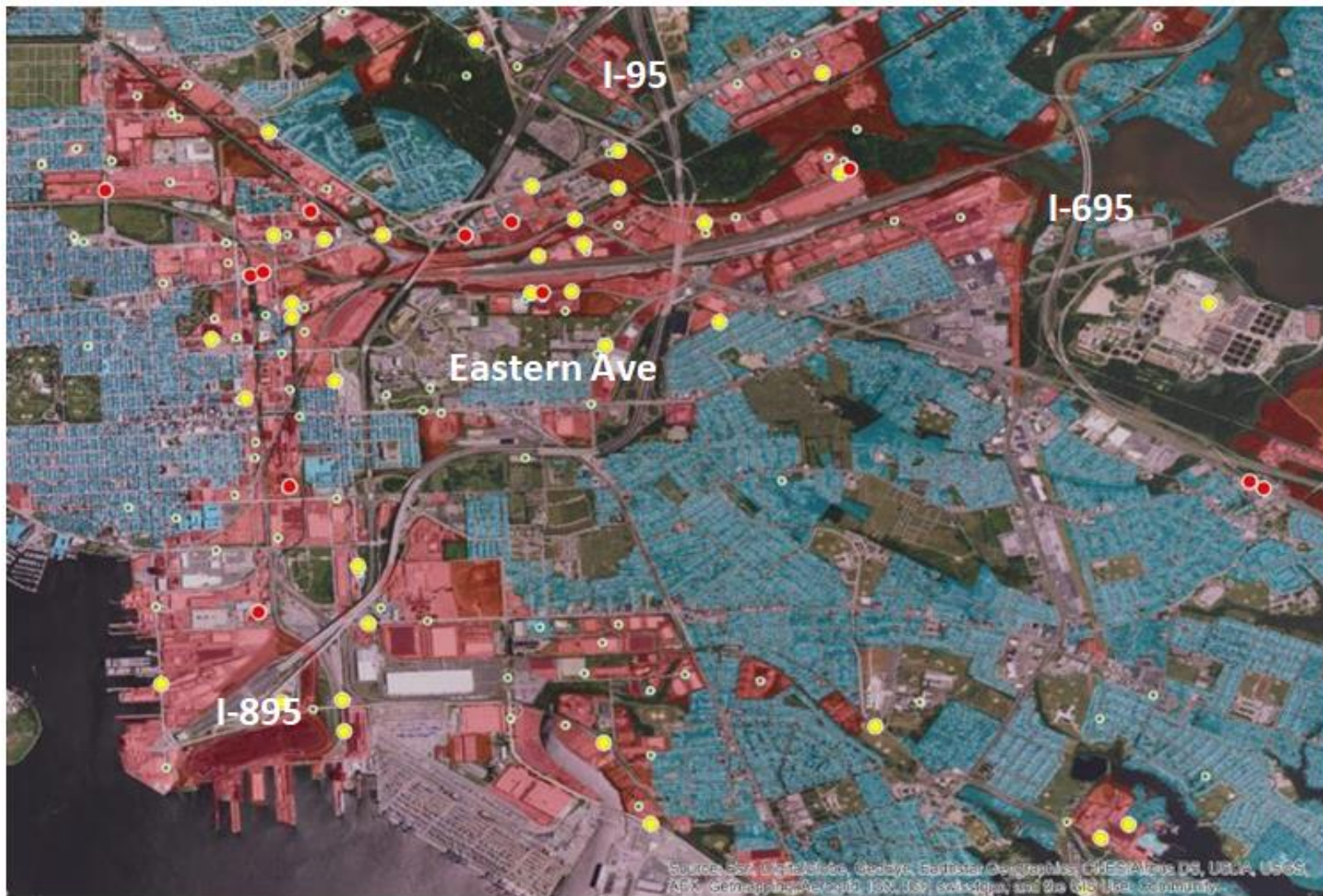
The pages that follow offer high resolution images of the maps included in the text of this report. Readers will find a “return to text” link after each map.

Map 1: Sites Required to Comply with Maryland Industrial Stormwater Permit



[Return to text.](#)

Map 2: Eastern Baltimore City



Yellow dots represent permitted industrial stormwater facilities, and red dots are facilities that need to take corrective action to address toxic pollution. Small green dots are other facilities regulated by EPA. Red-shaded areas are parcels identified as industrial by the Maryland Department of Assessments and Taxation, and blue-shaded areas are identified as one of several classes of residential property. [Return to text.](#)

Map 3: Southwest Baltimore City and Northern Anne Arundel County.



Yellow dots represent permitted industrial stormwater facilities and red dots are facilities that need to take corrective action to address toxic pollution. Small green dots are other facilities regulated by EPA. Red shaded areas are parcels identified as industrial by the Maryland Department of Assessments and Taxation, and blue shaded areas are identified as one of several classes of residential property. [Return to text.](#)

Map 4: Prince George's County Along the District of Columbia Border



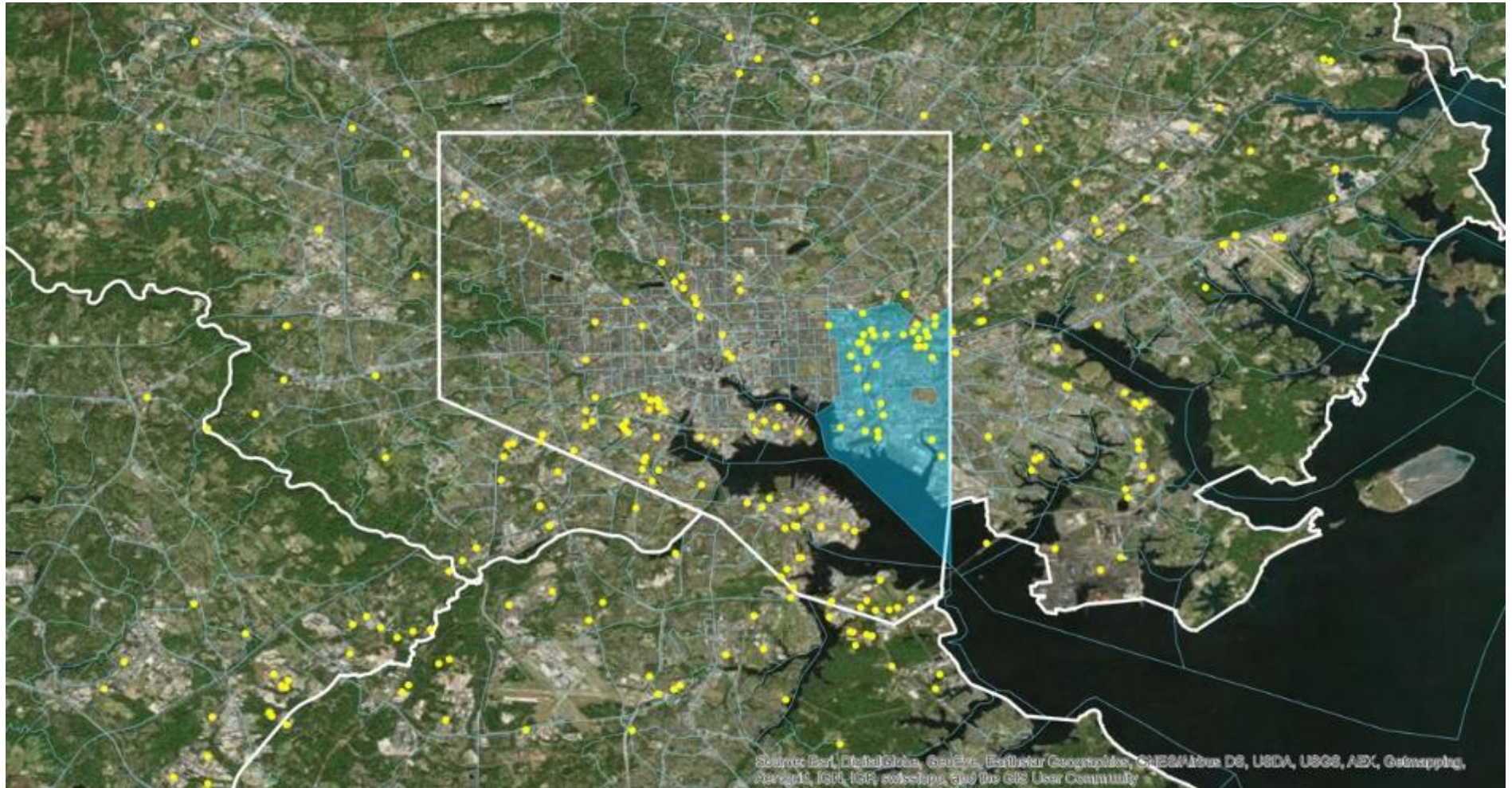
Yellow dots represent permitted industrial stormwater facilities and red dots are facilities that need to take corrective action to address toxic pollution. Small green dots are other facilities regulated by EPA. Red shaded areas are parcels identified as industrial by the Maryland Department of Assessments and Taxation, and blue shaded areas are identified as one of several classes of residential property. [Return to text.](#)

Map 5: Salisbury



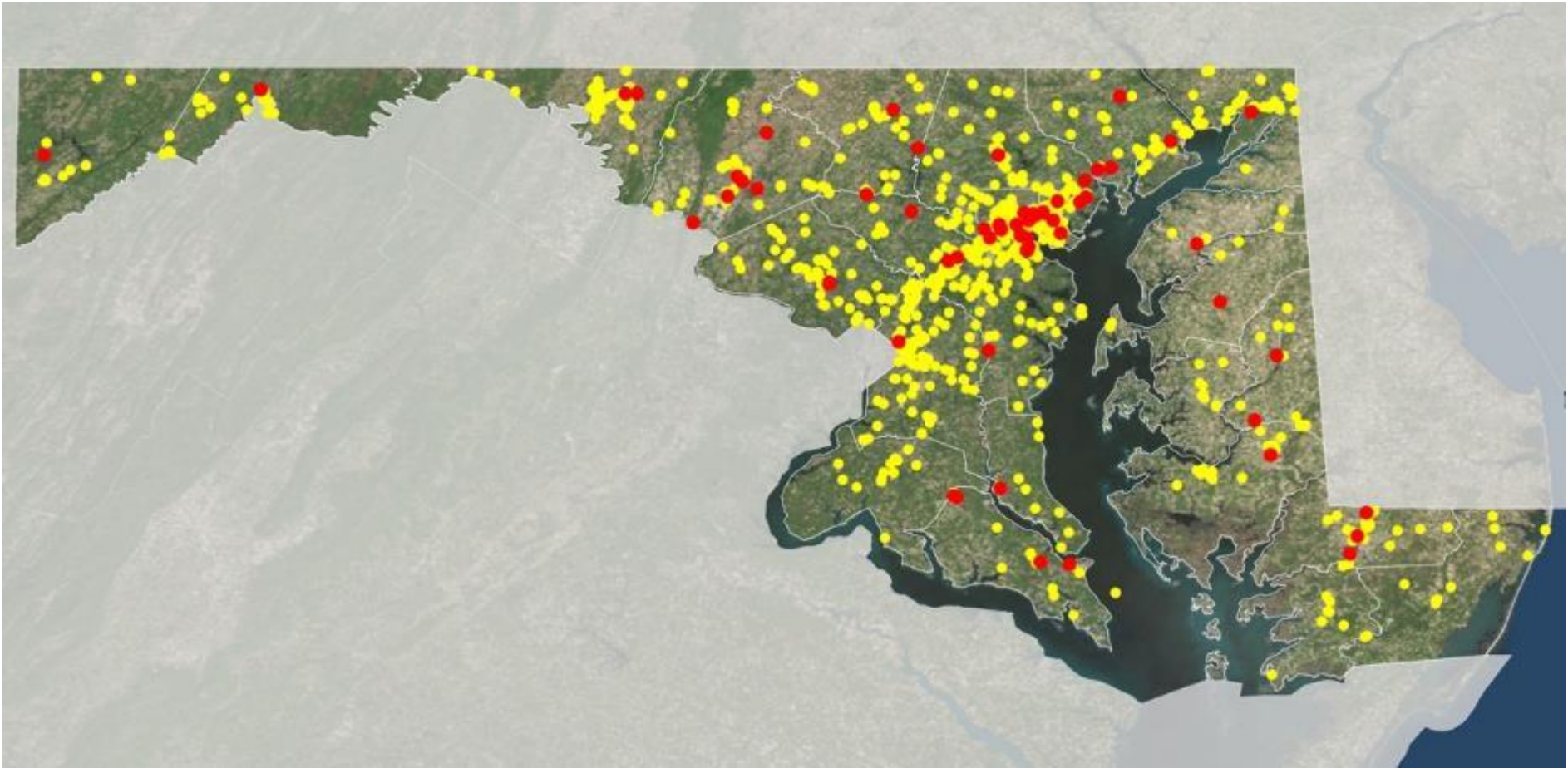
Yellow dots represent permitted industrial stormwater facilities, and red dots are facilities that need to take corrective action to address toxic pollution. Small green dots are other facilities regulated by EPA. Red-shaded areas are parcels identified as industrial by the Maryland Department of Assessments and Taxation, and blue-shaded areas are identified as one of several classes of residential property. [Return to text.](#)

Map 6: Baltimore Area Sites Required to Hold Permits



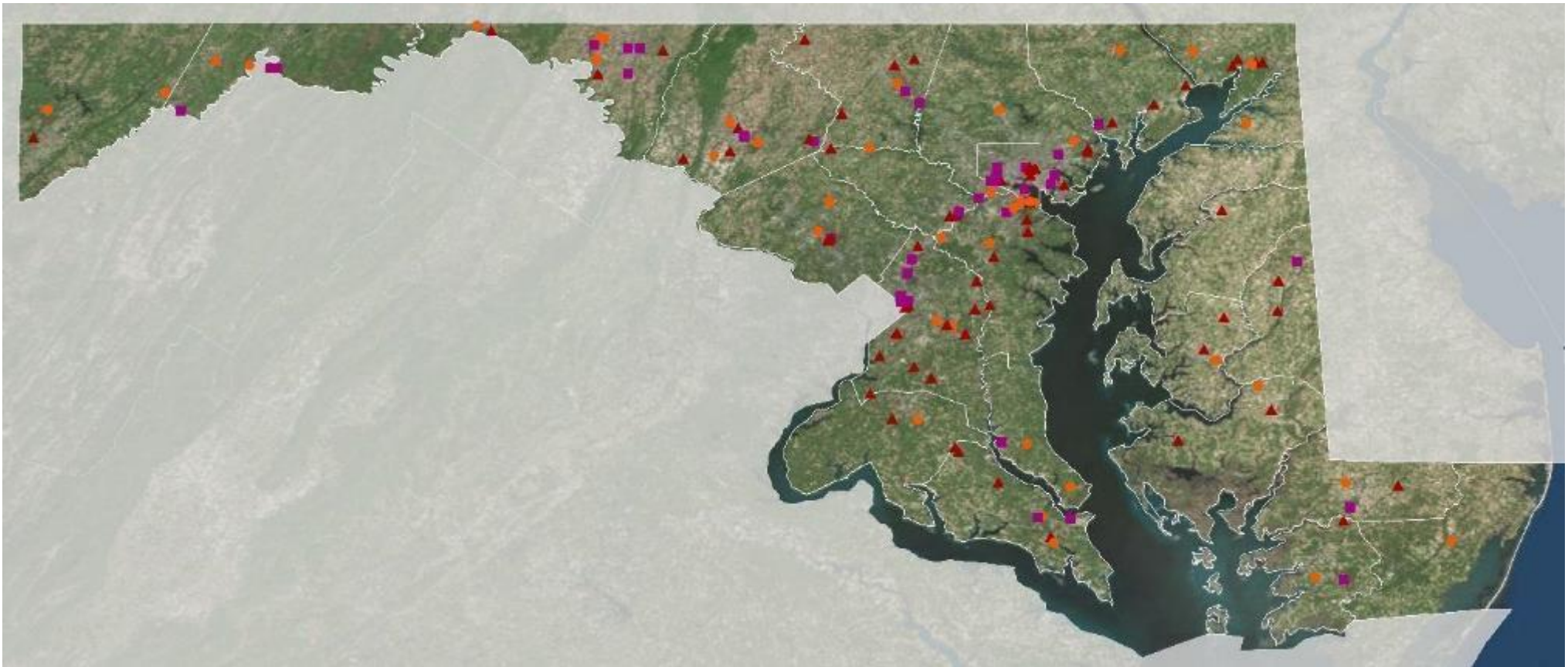
Distribution of industrial facilities in the Baltimore region that are required to comply with Maryland's Industrial Stormwater Permit, with East Baltimore census tracts highlighted in blue. [Return to text.](#)

Map 7: Sites Discharging Stormwater



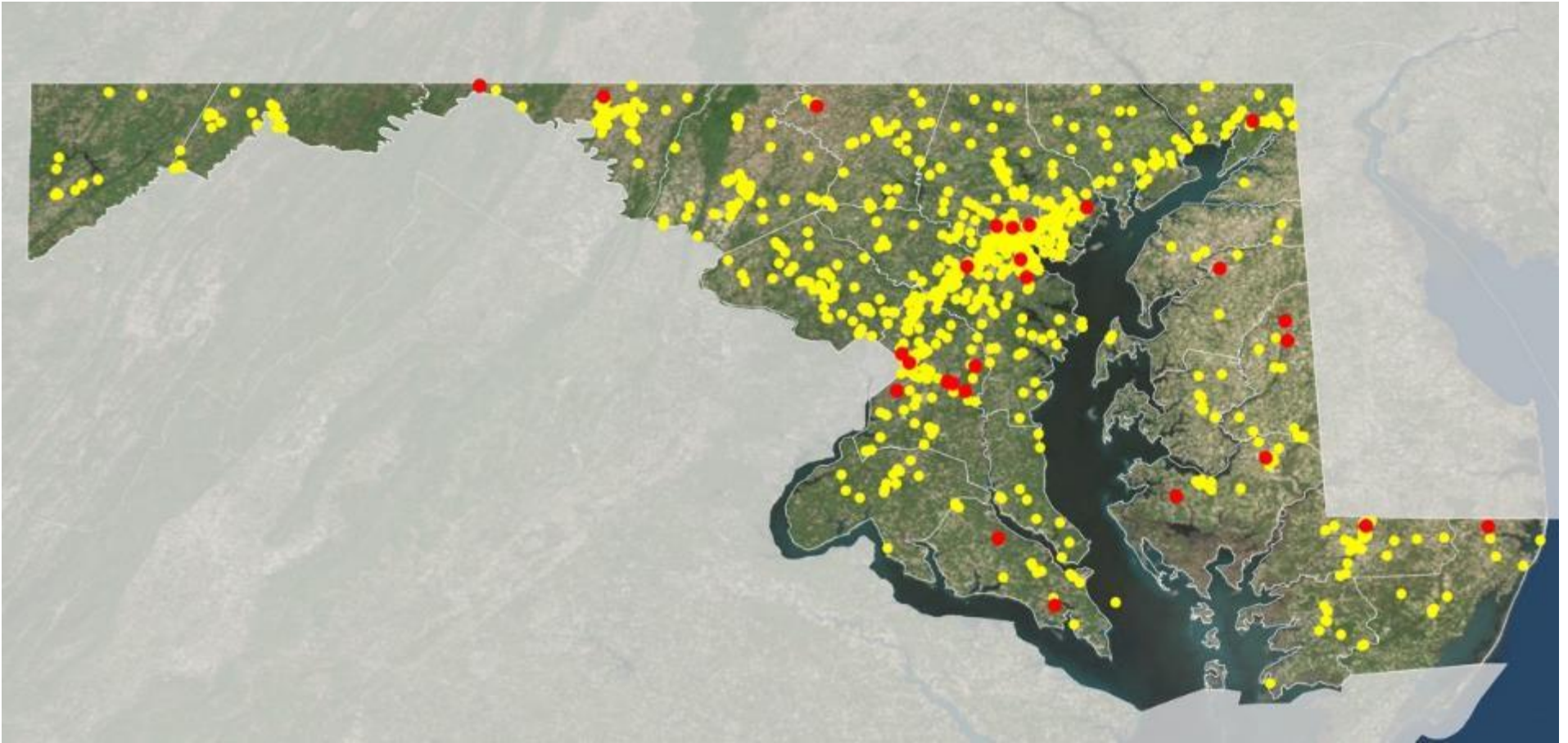
Statewide distribution of sites (in red) reporting discharges that exceeded acceptable benchmark thresholds over four quarters and are therefore required to take “corrective action” to comply with the industrial stormwater permit. [Return to text.](#)

Map 8: Landfill, Auto Salvage and Scrap Metal Recyclers Covered by Permit Program



Statewide distribution of landfills (orange dots), auto salvage yards (red triangles), and scrap metal recyclers (purple squares) covered under the Industrial Stormwater Permit. [Return to text.](#)

Map 9: Sites Required but Failing to Report Results



Statewide distribution of sites (in red) required to test and report their stormwater discharges but have failed to report results of any kind, which is a violation of the industrial stormwater permit. [Return to text.](#)

About the Center for Progressive Reform

Founded in 2002, the nonprofit Center for Progressive Reform is a 501(c)(3) nonprofit research and educational organization comprising a network of scholars across the nation dedicated to protecting health, safety, and the environment through analysis and commentary. CPR believes sensible safeguards in these areas serve important shared values, including doing the best we can to prevent harm to people and the environment, distributing environmental harms and benefits fairly, and protecting the earth for future generations. CPR rejects the view that the economic efficiency of private markets should be the only value used to guide government action. Rather, CPR supports thoughtful government action and reform to advance the well-being of human life and the environment. Additionally, CPR believes people play a crucial role in ensuring both private and public sector decisions that result in improved protection of consumers, public health and safety, and the environment. Accordingly, CPR supports ready public access to the courts, enhanced public participation, and improved public access to information.

About the Environmental Integrity Project

The Environmental Integrity Project is a nonpartisan, nonprofit watchdog organization that advocates for effective enforcement of environmental laws. Comprised of former EPA enforcement attorneys, public interest lawyers, analysts, investigators, and community organizers, EIP has three goals:

1. To illustrate through objective facts and figures how the failure to enforce or implement environmental laws increases pollution and harms public health;
2. To hold federal and state agencies, as well as individual corporations, accountable for failing to enforce or comply with environmental laws; and
3. To help local communities obtain the protections of environmental laws.

We act as a watchdog because we have to. State and federal agencies charged with protecting the environment often are squeezed by limited resources and political interference from well-funded lobbyists hired by the industries they are required to regulate. We help level the playing field by giving communities the legal and technical resources they need to claim their rights under environmental laws.

Political influence should play no role when the government decides whether to enforce laws which keep cancer-causing benzene out of the lungs of children, for example, or deadly coal soot particles out of the bloodstreams of the elderly.

We do this by advocating for fair enforcement of environmental laws and regulations; writing and distributing reports and data; taking legal actions against big polluters and government agencies, when necessary; and by teaching communities how to participate in the public process regarding important state and federal environmental decisions.

Endnotes

¹ Maryland Department of Environment. "General Permit For Discharges of Stormwater Associated With Industrial Activity, Maryland General Permit No. 12-SW." Available at

http://mde.maryland.gov/programs/Permits/WaterManagementPermits/Documents/GDP%20Stormwater/12_SW_CompleteFinalPermit.pdf; For more information see

<http://mde.maryland.gov/programs/Permits/WaterManagementPermits/Pages/stormwater.aspx>

² Brayton, M.J., Denver, J.M., Delzer, G.C., and Hamilton, P.A., 2008, Organic compounds in Potomac River water used for public supply near Washington, D.C., 2003–05: U.S. Geological Survey Fact Sheet 2007–3085, 6 p.; Also Kingsbury, J.A., Delzer, G.C., and Hopple, J.A., 2008, Anthropogenic organic compounds in source water of nine community water systems that withdraw from streams, 2002–05: U.S. Geological Survey Scientific Investigations Report 2008–5208, 66 p.

³ CDC. Investigation of Childhood Lead Poisoning from Parental Take-Home Exposure from an Electronic Scrap Recycling Facility — Ohio, 2012. MMWR. 64(27); 743-745. Available at:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6427a3.htm>.

⁴ ATSDR. Toxicological profile for lead. Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services. Aug, 2007.

⁵ Kim, M.A. and Williams, K.A. Lead Levels in Landfill Areas and Childhood Exposure: An Integrative Review. Public Health Nursing, Vol. 31 No. 1, pp. 87-97, 2016.

⁶ Hearn, Laurence K., et al. Assessing exposure to polybrominated diphenyl ethers (PBDEs) for workers in the vicinity of a large recycling facility. Ecotoxicology and environmental safety 92 (2013): 222-228.

⁷ AFL-CIO. 2017. Death on the Job: The Toll of Neglect. A National and State-by-State Profile of Worker Safety and Health in the United States. 26th Edition available at <https://aflcio.org/sites/default/files/2017-04/2017Death-on-the-Job.pdf>; U.S. Department of Labor, OSHA News Release. OSHA releases new resources to better protect workers from hazardous chemicals. Oct. 24, 2013, available at <https://www.osha.gov/news/newsreleases/national/10242013>.

⁸ OSHA. Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling. Occupational Safety and Health Administration, U.S. Department of Labor. OSHA 3348-05, 2008.

⁹ Zhu, J., et. al. Case Study: An Assessment of Metal Recycling Worker Lead Exposure Associated with Cutting Uncoated New Steel Scrap. Journal of Occupational and Environmental Hygiene, 6: D18-D21, 2009; NIOSH (National Institute for Occupational Safety and Health) [2014a]. Health hazard evaluation report: evaluation of occupational exposures at an electronic scrap recycling facility. Ceballos D, Chen L, Page E, Echt A, Oza A, Ramsey J. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, NIOSH HHE Report No. 2012-0100-3217. Available at: <http://www.cdc.gov/niosh/hhe/reports/pdfs/2012-0100-3217.pdf>.

¹⁰ Lander, F., Kristiansen, J. & Lauritsen, J. Manganese exposure in foundry furnacemen and scrap recycling workers. Int Arch Occup Environ Health (1999) 72: 546.

¹¹ Chalvatzaki, E., et. al. A Case Study of Landfill Workers Exposure and Dose to Particulate Matter-Bound Metals. Water Air Soil Pollut, 225: 1782, 2014; Kitsantis, P., et. al. Occupational Exposures and Associated Health Effects Among Sanitation Landfill Employees. Journal of Environmental Health, 63, 5: 17-24, 2000.

¹² United States Environmental Protection Agency.

¹³ United States Environmental Protection Agency. 2017. EJSCREEN. Retrieved: August, 25, 2017, www.epa.gov/ejscreen.

¹⁴ Caiazzo, Fabio & Ashok, Akshay & A. Waitz, Ian & H. L. Yim, Steve & R. H. Barrett, Steven. (2013). Air pollution and early deaths in the United States. Part I: Quantifying the impact of major sectors in 2005. Atmospheric Environment. 79. 198-208. 10.1016/j.atmosenv.2013.05.081.; Anna Maria Barry-Jester, Baltimore's Toxic Legacy Of Lead Paint, Fivethirtyeight.com, May 7, 2015 (<https://fivethirtyeight.com/features/baltimores-toxic-legacy-of-lead-paint/>).

¹⁵ Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. Social Vulnerability Index 2014 Database Maryland. <https://svi.cdc.gov/SVIDataToolsDownload.html>. Accessed on 2017.

¹⁶ Maryland Department of Environment. "General Permit For Discharges of Stormwater Associated With Industrial Activity, Maryland General Permit No. 12-SW." (Hereinafter "Maryland Industrial Stormwater Permit") Available at http://mde.maryland.gov/programs/Permits/WaterManagementPermits/Documents/GDP%20Stormwater/12_SW_CompleteFinalPermit.pdf.

¹⁷ Facilities must report discharge monitoring results on a quarterly basis for at least four consecutive quarters starting roughly six months after obtaining permit coverage. Among other requirements, facilities must sample all stormwater discharges soon after precipitation events and submit their reports to the MDE electronically.

¹⁸ Forty-two (of 65) industrial sites reported exceedances of acceptable levels of at least more than one pollutant based on an average of four-quarters of stormwater testing.

¹⁹ This ranking excludes seven minor permit classes with fewer than 10 inspections per year; if all minor permit classes are also included, one other permit class (marinas) has a lower compliance rate.

²⁰ Maryland Department of Environment. Annual Enforcement & Compliance Report, Fiscal Year 2015. Maryland Department of Environment, State of Maryland. Available at <http://mde.maryland.gov/Documents/www.mde.state.md.us/assets/document/AboutMDE/FY2015AnnualEnforcementReport.pdf>.

²¹ Delaware Department of Natural Resources and Environmental Control. "Delaware Environmental Navigator." <http://maps.dnrec.delaware.gov/navmap/>; Virginia Department of Environmental Quality. Public notices of enforcement and draft consent orders for public comment. <http://www.deq.virginia.gov/Programs/Enforcement/PublicNotices.aspx>; New Jersey Department of Environmental Protection. "DEP DataMiner." <https://www13.state.nj.us/DataMiner>; New York Department of Environmental Conservation. "Office of Hearings and Mediation Services Docket Management System." <http://www.dec.ny.gov/cfm/xtapps/docket/>; Pennsylvania Department of Environmental Protection. "Inspection Search Screen." http://www.ahs.dep.pa.gov/eFACTSWeb/criteria_inspection.aspx.

²² Maryland Department of Environment, 12SW - General Permit for Stormwater Discharges Associated with Industrial Activity Fact Sheet, at 36. (available at http://www.mde.state.md.us/programs/Permits/WaterManagementPermits/Documents/GDP%20Stormwater/12_SW_FactSheet_Final.pdf).

²³ Maryland Industrial Stormwater Permit at 22.

²⁴ State of Washington Department of Ecology, Industrial Stormwater General Permit (effective date: Jan. 2, 2015) (hereinafter "Washington State Stormwater Permit"), at 36, available at

<http://www.ecy.wa.gov/programs/wq/stormwater/industrial/ISGPFinal2015.pdf>.

²⁵ California State Water Resources Control Board (effective date: July 1, 2015) (hereinafter “California Stormwater Permit”), at 50-51, available at https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/industrial/2014indgenpermit/wqo2014_0057_dwq_revmar2015.pdf.

²⁶ See Maryland Industrial Stormwater Permit, App. D.

²⁷ Washington State Stormwater Permit at pg. 23; California Stormwater Permit at pg. 39-40.

²⁸ Washington State Stormwater Permit, pg. 28-29, App. 4.

²⁹ New York State Department of Environmental Conservation, Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (effective date: Oct. 1, 2012) (hereinafter “New York State Stormwater Permit”), pg.18, available at http://www.dec.ny.gov/docs/water_pdf/gp12001.pdf.

³⁰ State of Washington Department of Ecology, Notice of Intent application form (effective July 1, 2015).

³¹ New York State Department of Environmental Conservation, Notice of Intent application form (effective Oct. 1, 2012).

³² Maryland Industrial Stormwater Permit, at 17.

³³ California Stormwater Permit at 12.

³⁴ Washington State Permit, pg. 43; New York State Stormwater Permit, pg. 30.

³⁵ 40 C.F.R. § 123.27(d). (“Requirements for enforcement authority”) requires jurisdictions delegated Clean Water Act authority to either permit intervention as of right to “any citizen having an interest which is or may be adversely affected[...],” in a civil or administrative enforcement action; or not oppose permissive intervention *and* provide notice and public comment on any proposed enforcement settlement. Maryland courts have narrowly construed Md. Rule 2–214(a) to limit intervention as a matter of right in Clean Water Act litigation to a narrow class of citizens that own property that adjoins the site of the violation that is the subject of enforcement. *Env’tl. Integrity Project v. Mirant Ash Mgmt., LLC*. 197 Md. App. 179, 186 (2010).

³⁶ Maryland Department of the Environment, Wastewater Permits Interactive Search Portal, available at <http://mes-mde.mde.state.md.us/WastewaterPermitPortal/>, accessed March 1, 2017.

³⁷ General Permit for Discharges from Stormwater Associated with Industrial Activities, Effective January 1, 2014 through December 31, 2018, available at http://mde.maryland.gov/programs/Permits/WaterManagementPermits/Documents/GDP%20Stormwater/12_SW_CompleteFinalPermit.pdf.

³⁸ Environmental Protection Agency, Enforcement and Compliance History Online, effluent chart data available at <https://echo.epa.gov/>, accessed March 1, 2017.