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An Environmental Law Even Judge Learned Hand Would Violate: Ohio EPA Needs Non-Monetary Penalties to Enforce Construction NPDES Permits

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AN ENVIRONMENTAL LAW EVEN JUDGE LEARNED HAND WOULD VIOLATE: OHIO EPA NEEDS NON-MONETARY PENALTIES TO ENFORCE CONSTRUCTION NPDES PERMITS

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I. INTRODUCTION

Almost all construction sites in Ohio are violating the National Pollutant Discharge Elimination System ("NPDES") permit, issued by the Ohio Environmental Protection Agency ("EPA").[1] As a result, these construction sites are polluting bodies of water in Ohio and the United States.[2] By degrading the water quality, these sites are causing hundreds of millions of dollars in damage every year.[3] The public is paying the bill for their noncompliance by paying more to treat drinking water.[4] Industry is paying the bill for their noncompliance because the polluted water is a less effective coolant and can damage industrial equipment.[5] Construction sites are not held accountable because the Ohio EPA's enforcement methods are ineffective.[6]

Construction sites pose two major problems to water quality. First, when soil is disturbed during construction, sediment is carried by stormwater runoff and discharged into waterways.[7] Second, as construction is completed, the increased percentage of impervious surfaces can cause an increase in the volume of stormwater runoff.[8] This negatively affects the stability of tributaries, resulting in increased erosion.[9]

The Ohio EPA regulates construction sites by issuing NPDES permits[10] that impose restrictions on the discharge of stormwater.[11] Construction sites, however,

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[1] *See infra* Part V.A.

[2] *See infra* Part II.

[3] *See infra* Part II.

[4] *See infra* Part II.

[5] *See infra* Part II.

[6] *See infra* Part V.

[7] *See infra* Part II.

[8] *See infra* Part II.

[9] *See infra* Part II.

[10] OHIO ADMIN. CODE 3745-39 (2010). These are permits issued under the Clean Water Act. 33 U.S.C. § 1342 (2006). They allow a facility to discharge pollution into a jurisdictional body of water, such as a lake or a river. *Id.*

have little incentive to follow these requirements.[12] For many construction sites, it is more economical to be out of compliance and risk an unlikely fine than to comply with the permit.[13] When these construction sites are out of compliance, stormwater runoff carries sediment into waterways and adversely affects water quality.[14]

In negligence torts, the Learned Hand Formula is used to determine what a reasonable person would do.[15] The Learned Hand Formula, when applied to what an economically reasonable construction company would do, indicates that violating the NPDES permit is in a construction company's best economic interest.[16] While probably not actually thinking through the application of the Learned Hand Formula, construction companies are reaching this same conclusion.[17] Therefore, construction companies need stronger disincentives not to violate their permits. To achieve this, the Ohio EPA needs to be able to utilize non-monetary enforcement methods because the current enforcement of the general construction NPDES permit does not effectively encourage compliance.

Following this Introduction, Part II discusses the damage sediment inflicts on waterways and ecosystems. Part III provides an overview of the NPDES program, including examples of the typical violations that Ohio EPA auditors find on construction sites. Part IV reviews the US EPA's stormwater enforcement strategy. Part V shows the number of construction sites that are out of compliance with the NPDES permit and demonstrates why those construction sites do not have the incentive to comply. Part VI establishes that monetary penalties alone cannot be an effective deterrent to noncompliance. Part VII discusses several types of non-monetary penalties, whether they are available to the U.S. EPA, Ohio EPA, or local governments, and whether those non-monetary penalties are likely to be an effective deterrent.

II. EFFECT OF SEDIMENT ON WATERWAYS AND ECOSYSTEMS

Every year, construction sites discharge about 6,000 pounds of sediment per acre in their stormwater runoff.[18] Sediment causes both in-stream and off-stream adverse impacts.[19] With regard to in-stream impacts, "[s]uspended sediment most often negatively affects waterways by increasing turbidity[, which is a reduction in] transparency and the amount of sunlight that can penetrate [the water]."[20] Increased

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[11] *See infra* Part III.A.

[12] *See infra* Part V.

[13] *See infra* Part V.

[14] *See infra* Part II.

[15] *See* United States v. Carroll Towing Co., 159 F.2d 169 (2d Cir. 1947).

[16] *See infra* Part V.

[17] *See infra* Part V.

[18] EPA, PRELIMINARY DATA SUMMARY OF URBAN STORMWATER BEST MANAGEMENT PRACTICES, ch. 4 p. 10 (1999) [hereinafter "PRELIMINARY DATA SUMMARY"].

[19] EDWIN H. CLARK II, JENNIFER A. HAVERKAMP & WILLIAM CHAPMAN, ERODING SOILS: THE OFF-FARM IMPACTS, 61 (1985).

[20] *Id.* at 62.

turbidity causes a number of adverse biological impacts.[21] For example, primary production decreases when sunlight is blocked,[22] resulting in lower dissolved oxygen levels.[23] Also, many fish and other species will not reproduce in turbid waters.[24] Furthermore, suspended solids cause gill damage and abrasion to fish.[25] More damage is done even after the suspended sediment settles.[26] The settled sediment kills submerged vegetation and fish eggs.[27] Additionally, it destroys the habitat of many bottom dwelling organisms.[28]

The off-stream impacts of sediment affect humans more directly.[29] The following are some examples of off-stream impacts. Suspended sediment increases the cost of pumping water because sediment is heavier than the water it displaces and because the sediment damages pumping equipment.[30] Sediment increases the number and magnitude of floods because it increases the volume of water.[31] Sediment increases the cost of treating drinking water because, for the water to be drinkable, the added sediment must be removed.[32] Sediment increases the cost of industrial uses because sediment infused water damages industrial equipment and is a less effective coolant.[33] One study concluded sediment causes a total of $7 billion in damages per year.[34] That same study also concluded that, in a region consisting of Ohio, Indiana, Illinois, Iowa, and Missouri, sediment causes a total of $970 million of damages per year.[35] This is the third highest of ten regions.[36]

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[21] *Id.*

[22] *Id.* at 63.

[23] *Id.*

[24] *Id.* at 64-65.

[25] *Id.* at 65.

[26] *Id.* at 66.

[27] *Id.* at 66-68.

[28] *Id.*

[29] *Id.* at 84-94.

[30] *Id.* at 84.

[31] *Id.* at 84-89.

[32] *Id.* at 91.

[33] *Id.* at 91, 93.

[34] Marc O. Ribaudo, *Regional Estimates of Off-Site Damages From Soil Erosion, in Off-Site Costs of Soil Erosion* 41 (Tomas E. Waddell ed., 1986). The calculation of damages uses 1983 dollars. *Id.*

[35] *Id.* at 46. The calculation of damages uses 1983 dollars. *Id.*

[36] *Id.* The regions were based on farm production. *Id.* They include the following and cause the following amount of damages from sediment: Northeast, $1 billion; Lake States, $519 million; Corn Belt, $928 million; Northern Plains, $329 million; Appalachian $530 million; Southeast, $367 million; Delta States $484 million; Southern Plains, $740 million; Mountain States $813 million; Pacific, $1.3 billion. *Id.*

Construction sites discharge 80 million tons of sediment every year.[37] Construction sites discharge more sediment per acre than any other typical urban land use.[38] On a unit area basis, construction sites discharge 20 to 1,000 times more sediment than any other land use.[39] These large amounts of sediment are discharged from construction sites because the sites are typically excavated and the existing vegetation is cleared.[40] Without vegetation, the volume of stormwater runoff is three to seven times greater.[41] Surface runoff (through erosion) and raindrops (through impact) detach soil from the ground.[42] The detached soil becomes suspended in rainwater and is transported, with the rainwater, off the construction site into bodies of water.[43]

III. THE NPDES PERMIT PROGRAM

In Ohio, stormwater discharges from construction sites are regulated by the U.S. EPA, the Ohio EPA, and local governments.[44] Construction sites are required to obtain a permit and then develop their own compliance plans, called Stormwater Pollution Prevention Plans ("SWPPP").[45] While a construction site has some discretion in developing its SWPPP, it is required to use the best management practices ("BMPs") appropriate for its site.[46]

Subsection A discusses the U.S. EPA and the Ohio EPA's authority to regulate stormwater from construction sites. Subsection B discusses how construction sites are required to develop their own compliance plans. Subsection C discusses how the Ohio EPA requires local governments to inspect construction sites and to enforce

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[37] US EPA, ENVIRONMENTAL ASSESSMENT FOR PROPOSED EFFLUENT GUIDELINES AND STANDARDS FOR THE CONSTRUCTION AND DEVELOPMENT CATEGORY 2-2 (June 2002), *available at* http://www.epa.gov/waterscience/guide/construction/envir/C&D_Envir_Assessmt_proposed.pdf [hereinafter "ENVIRONMENTAL ASSESSMENT FOR EFFLUENT GUIDELINES"].

[38] *Preliminary Data Summary, supra* note 18, at ch. 4 p. 10. The other land uses considered are the following: commercial, parking lot, high density residential, medium density residential, low density residential, freeway, industrial, and park. *Id.*

[39] ENVIRONMENTAL ASSESSMENT FOR EFFLUENT GUIDELINES, *supra* note 37, at 2-2.

[40] *Id.* at 2-1.

[41] MINNEAPOLIS PUBLIC WORKS, IMPACTS OF EROSION AND SEDIMENT FROM CONSTRUCTION SITES 1 (May 2009), *available at* http://www.ci.minneapolis.mn.us/stormwater/docs/impacts-of-erosion.pdf.

[42] ENVIRONMENTAL ASSESSMENT FOR EFFLUENT GUIDELINES, *supra* note 37, at 2-2.

[43] *Id.*

[44] *See infra* Part III.A, C.

[45] 40 CFR § 122.26(b)(14)(x), (a)(9)(i) (2010); Ohio EPA, Authorization for Stormwater Discharges Associated with Construction Activity Under the National Pollutant Discharge Elimination System, Ohio EPA Permit No. OHC000003 (2008), *available at* http://www.epa.ohio.gov/LinkClick.aspx?fileticket=y8Ff9MECTVQ%3d&tabid=3466 [hereinafter "Ohio Construction General NPDES Permit"].

[46] Ohio Construction General NPDES Permit, *supra* note 45, at 10. BMPs are methods of reducing pollution. *Id.* They can be either structure devices or procedures construction sites are required to follow. *Id.* at 37.

construction sites' permit requirements. Subsection D discusses specific requirements of construction sites and typical violations of those requirements.

A. The Clean Water Act

Congress passed the Clean Water Act ("CWA") to protect the quality of the nation's waters.[47] The CWA gives the U.S. EPA the authority to issue NPDES permits.[48] These permits allow facilities to discharge pollution into bodies of water while imposing requirements, such as limiting the amount of pollution discharged, requiring pollution control equipment, or requiring facilities to follow certain best management practices ("BMPs").[49]

The U.S. EPA delegated to Ohio the authority to administer its own NPDES program.[50] As a result, the Ohio EPA is also responsible for enforcing its NPDES permits.[51] Any construction site that disturbs over one acre of soil is required to obtain a NPDES permit.[52] Rather than issue an individual NPDES permit for each construction site, the Ohio EPA issued a general NPDES permit to cover multiple construction sites.[53] As such, construction sites do not need to each obtain their own NPDES permits.[54] They obtain coverage under the general permit by submitting a notice of intent to the Ohio EPA.[55] This means that construction sites that opt for coverage under the general permit all have the same permit requirements.[56] It also

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[47] Michael P. Healy, *Still Dirty After Twenty-Five Years: Water Quality Standard Enforcement and the Availability of Citizen Suits*, 24 ECOLOGY L.Q. 393, 396 (1997).

[48] 33 U.S.C. § 1342 (2006).

[49] *Id.*; Jeffrey M. Gaba, *Generally Illegal: NPDES General Permits Under The Clean Water Act*, 31 HARV. ENVTL. L. REV. 409, 410 (2007) [hereinafter "*Generally Illegal*"].

[50] OHIO EPA, FACT SHEET: STORM WATER PROGRAM 1 (2003), *available at* http://www.epa. state.oh.us/portals/35/storm/phase2factsheet.pdf [hereinafter "STORM WATER PROGRAM FACT SHEET"].

[51] 40 C.F.R. § 123.22(c) (2010).

[52] *See generally* 40 CFR § 122.26 (2010). The stormwater program was implemented in two phases. STORM WATER PROGRAM FACT SHEET, *supra* note 50, at 1. Phase I only required construction sites over five acres to obtain an NPDES permit. *Id.* On March 10, 2003, Phase II was implemented, requiring all construction sites over one acre to obtain an NPDES permit. *Id.*

[53] *See generally* Ohio Construction General NPDES Permit, *supra* note 45.

[54] OHIO EPA DIVISION OF SURFACE WATER, Types of Permits, *in* GENERAL PERMITS, *available at* http://www.epa.state.oh.us/dsw/permits/gpfact.aspx#types%20of%20permits.

[55] U.S. EPA OFFICE OF WASTE WATER MANAGEMENT, WATER PERMITTING 101, *available at* http://www.epa.gov/npdes/pubs/101pape.pdf; OHIO EPA, NOTICE OF INTENT (NOI) APPLICATION FORM - FOR REQUESTING COVERAGE UNDER AN OHIO ENVIRONMENTAL PROTECTION AGENCY GENERAL PERMIT 1, *available at* http://www.epa.state.oh.us/portals/35/documents/NOI_instructions2_s.pdf.

[56] *See* OHIO EPA DIVISION OF SURFACE WATER, Advantages of a General Permit, *in* GENERAL PERMITS, *available at* http://www.epa.state.oh.us/dsw/permits/gpfact.aspx [hereinafter Advantages of a General Permit].

means the permit requirements are not site specific and therefore construction sites must determine what applies to them.[57]

B. The SWPPP

As part of Ohio's construction general NPDES permit, construction sites are required to develop stormwater pollution prevention plans ("SWPPP").[58] A SWPPP is a comprehensive document that shows the permitee's plan for complying with the NPDES permit.[59] The SWPPP must "describe and ensure the implementation of best management practices ("BMPs") that reduce the pollutants in stormwater discharges during construction."[60] BMPs include both structural devises used to remove sediment from stormwater runoff and non-structural procedures used to prevent sediment from mixing with stormwater runoff.[61] The Ohio EPA requires construction sites' BMPs to meet the standards and specifications published by the Ohio Department of Natural Resources in the Rainwater and Land Development Manual.[62]

C. The MS4 Program

Many local governments are required to inspect construction sites within their borders and enforce Ohio EPA's permit requirements.[63] Municipal Separate Storm Sewer Systems ("MS4s"), in essence, are storm sewers that discharge directly into a regulated body of water.[64] Local governments that have MS4s must obtain NPDES

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[57] *Id.*

[58] Ohio Construction General NPDES Permit, *supra* note 45, at 10-13.

[59] *Id.* at 10.

[60] *Id.* at 15-19. The following are other items that Ohio EPA requires to be in a SWPPP: (1) the soil types on the site, (2) Existing and proposed contours of the site, (3) Surface water locations within 200 feet of the site, (4) the limits of earth-disturbing activity, (5) the location of the BMPs, and (6) the location of all buildings and roads. *Id.*

[61] *Id.* Examples of structural BMPs are retention ponds, silt fence, and storm drain inlet protection. *Id.* Examples of non-structural BMPs are phased disturbances, dust control, and establishing temporary cover. *Id.*

[62] *Id.* at 15. The language used in the permit is confusing. The actual language in the permit is "Ohio EPA recommends that the erosion, sediment, and stormwater management practices used to satisfy the conditions of this permit should meet the standards and specifications in the current edition of Ohio's *Rainwater and Land Development* (see definitions) manual or other standards acceptable to Ohio EPA." *Id.* (emphasis added). All of the structural and non-structural BMPs described in the permit are in the *Rain Water and Land Development Manual*. *See id.* at 15-19; OHIO DEPARTMENT OF NATURAL RESOURCES, RAIN WATER AND LAND DEVELOPMENT MANUAL (2009), available at http://ohiodnr.com/tabid/9186/Default.aspx [hereinafter RAIN WATER MANUAL]. The specifications given in the *Rain Water and Land Development Manual* are more specific and are considered the acceptable specifications. *See* Ohio Construction General NPDES Permit, *supra* note 45, at 20.

[63] RAIN WATER MANUAL, *supra* note 62, app. 3 at 2.

[64] OHIO EPA, *Authorization for Small Municipal Separate Storm Sewer Systems to Discharge Stormwater Discharges Under the National Pollutant Discharge Elimination System, Ohio EPA Permit No. OHQ000002* 22 (2009) [hereinafter "*Ohio MS4 General*

permits.[65] The Ohio EPA has a general permit that covers small MS4s.[66] As part of that permit's requirements, local governments must inspect construction sites for compliance with the construction general NPDES permit and must develop enforcement plans.[67] Therefore, construction sites are regulated by the U.S. EPA, the Ohio EPA, and local governments.

D. Requirements and Typical Violations

As discussed above, the primary requirement of Ohio's construction general NPDES permit is the use of BMPs.[68] The following are typical BMPs used on construction sites. The subsections below contain a general description of the BMP and the ways in which most construction sites fail to properly install or maintain the BMP. These are the typical ways in which construction sites are violating their NPDES permits.

1. Silt Fence

Silt fence is a geotextile fabric attached to small wooden posts.[69] It works similar to a coffee filter in that water but not sediment can pass through it.[70] However, it is only appropriately used to capture sediment from stormwater runoff in the form of sheet flows.[71] This means that silt fence cannot treat concentrated flows of stormwater, such as ditches or channels.[72] To be installed correctly, at least six inches of the silt fence must be placed in a trench and the trench must be backfilled with compacted dirt.[73] When installed correctly, silt fence is about 70% effective at removing sediment.[74] However, silt fence's effectiveness is highly dependent on

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NPDES Permit"]. MS4s are publicly owned conveyances or systems of conveyances, which are not a combined sewer or part of a publicly owned treatment works, used solely for conveying stormwater. *Id.*

[65] OHIO ADMIN. CODE 3745-39 (2010).

[66] *Ohio MS4 General NPDES Permit*, *supra* note 64. An MS4 is classified as a large MS4 if it is located in a county or incorporated area that has a population of 250,000 people and above. *Id.* at 21. An MS4 is classified as a medium MS4 if it is located in a county or incorporated area that has a population of between 100,000 and 249,999 people. *Id.* at 22. A small MS4 is any MS4 not regulated in the phase I stormwater program. *Id.* The classification of small MS4 is not population based. *Id.*

[67] OHIO ADMIN. CODE 3745-39-03(C)(2)(d)(ii)(f) (2010).

[68] *See supra* Part III.B.

[69] RAIN WATER MANUAL, *supra* note 62, at ch. 6 p. 29.

[70] *Id.*

[71] *Id.*

[72] *Id.*

[73] *Id.* at ch. 6 p. 34.

[74] U.S. EPA, GUIDANCE SPECIFYING MANAGEMENT MEASURES FOR SOURCES OF NONPOINT POLLUTION IN COASTAL WATERS Table 4-16 (1993), *available at* http://www.epa.gov/owow/NPS/MMGI/Chapter4/ch4-3a.html [hereinafter "GUIDANCE SPECIFYING MANAGEMENT MEASURES"].

correct installation and maintenance.[75] EPA inspectors typically find three major violations involving silt fence.[76] First, construction sites are not installing silt fence where it is called for on their SWPPP.[77] Second, construction sites are installing silt fence incorrectly by not trenching and backfilling or by leaving holes in the silt fence.[78] Third, construction sites use silt fence to treat drainage areas that exceed silt fence's capabilities.[79] The Ohio Department of Natural Resources has found that "nearly 75% of silt fence does not function properly due to poor installation."[80]

1. Retention and Detention Basins

Retention and detention basins are manmade ponds that release stormwater runoff at a controlled rate.[81] They are designed to let sediment settle before the stormwater is released.[82] This is accomplished by using one of two approved sediment control outlet structures: a skimmer or a riser pipe.[83] A skimmer is attached to a flexible pipe and a floatation device.[84] This dewaters the ponds by skimming the water off of the top.[85] A riser pipe is a PVC pipe wrapped in geotextile with small holes drilled into it.[86] This allows the water, but not the sediment, to pass through.[87] When installed correctly, retention and detention basins are about 70% effective at removing sediment.[88] Ohio EPA inspectors find construction sites are violating the NPDES permit by not installing retention and detention basins early enough.[89] The basins are supposed to be installed within six days after grubbing.[90] However, many construction sites do not install them until later because constructing the basins early can delay a construction project.[91] The

[75] *See* U.S. EPA, *Effectiveness*, *in* MENU OF BMPS: SILT FENCE, *available at* http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=56&minmeasure=4.

[76] Telephone Interview with Dan Bogoevski, District Engineer, Ohio Environmental Protection Agency (Dec. 22, 2010) [hereinafter "Bogoevski Interview"].

[77] *Id.*

[78] *Id.*

[79] *Id.*

[80] RAIN WATER MANUAL, *supra* note 62, at ch. 6 p. 30.

[81] *Id.* at ch. 6 p. 2.

[82] *Id.*

[83] *Id.* at ch. 6 pp. 4, 8.

[84] *Id.* at ch. 6 p. 10.

[85] *Id.*

[86] *Id.* at ch. 6 p. 2.

[87] *Id.*

[88] GUIDANCE SPECIFYING MANAGEMENT MEASURES, *supra* note 74, at tbl. 4-16.

[89] Bogoevski Interview, *supra* note 76.

[90] RAIN WATER MANUAL, *supra* note 62.

[91] Bogoevski Interview, *supra* note 76.

other major violation involving detention and retention basins is that the wrong outlet structure is used.[92] Construction sites install post construction outlet structures instead of sediment control outlet structures.[93] Post construction outlet structures are not designed to remove sediment, only to reduce the volume of stormwater runoff.[94]

2. Erosion Controls

Soil stabilization is the most effective method of reducing sediment pollution.[95] Soil stabilization BMPs must be utilized even where sediment trapping BMPs are in place.[96] Soil stabilization BMPs require construction sites to follow strategic plans to minimize soil disturbances and to establish cover over idle soils.[97] The required strategic plan involves using phased disturbances so that no more than 50% of the site is disturbed and idle.[98] Construction sites must establish temporary cover for disturbed areas that will remain idle for over twenty-one days.[99] Temporary cover normally requires mulching and seeding.[100] Construction sites must establish permanent cover for disturbed areas that will remain idle for over one year.[101] "Permanent [cover] includes site preparation, seedbed preparation, planting seed, mulching, irrigation, and maintenance."[102] Temporary and permanent cover reduces soil loss by an average of 90%.[103] Ohio EPA inspectors typically find construction sites are violating the NPDES permit by not using the required erosion controls at all.[104] Construction sites delay establishing cover until the construction project is complete.[105]

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[92] *Id.*

[93] *Id.*

[94] RAIN WATER MANUAL, *supra* note 62, at ch. 6 p. 20.

[95] *Id.* at ch. 7 p. 33.

[96] *See id.* at ch. 7.

[97] *See id.* at ch. 7.

[98] *Id.* at ch. 7 p. 3.

[99] *Id.* at ch. 7 p. 33.

[100] *Id.*

[101] *Id.* at ch. 7 p. 41. Permanent stabilization is achieved through permanent seeding or sodding. *Id.* at ch. 7 p. 41-50. Permanent seeding must be perennial vegetation. *Id.* at ch. 7 p. 41. Other types of permanent stabilization include rock check dams, outlet protection, and rock lined channels. Rock check dams are used to prevent erosion by slowing the flow of stormwater. *Id.* at ch. 5 p. 2. Outlet protection normally consists of large rocks placed under an outfall. *Id.* at ch. 4 p. 20. These rocks provide an erosion resistant transition where concentrated flows of water contact natural surfaces. *Id.* Rock lined channels are used to prevent erosion for concentrated water flows by stabilizing channels and slowing the flow of water. *Id.* at ch. 4 p. 14.

[102] *Id.*

[103] GUIDANCE SPECIFYING MANAGEMENT MEASURES, *supra* note 74, at tbl.4-15.

[104] Bogoevski Interview, *supra* note 76.

[105] *Id.*

3. Post Construction

The general construction NPDES permit also requires post construction BMPs.[106] The purpose of post construction BMPs is to reduce the volume of stormwater runoff from developed sites and to reduce erosion.[107] Examples of post construction BMPs include detention ponds (designed to capture water during storms and drain slowly) and outlet protection (designed to reduce erosion caused by continuously running water).[108] Ohio EPA inspectors find that smaller construction sites are violating the NPDES permit by not even drawing post construction BMPs into their plans.[109] Larger construction sites have been improving in this area.[110] However, many post construction BMPs are inadequate because they are installed with the wrong water storage volume.[111]

IV. STORMWATER ENFORCEMENT WAS ONE OF U.S. EPA'S PRIORITIES

In an effort to reduce these violations, the U.S. EPA's Office of Enforcement and Compliance Assurance ("OECA") listed stormwater as one of its 2008–2010 enforcement and compliance assurance initiatives.[112] This means OECA identified stormwater as a complex environmental problem that should be addressed by a centralized enforcement initiative.[113] To address stormwater from construction sites, OECA's strategies focused on large home developers and big box stores.[114] This note will demonstrate infra that this strategy is not effective. OECA's 2011-2013 enforcement and compliance assurance initiatives also include stormwater from construction sites, but only as a subset of OECA's "Keeping Raw Sewage and Contaminated Stormwater Out of our Nation's Waters" initiative. [115] This new initiative focuses on "reducing discharges from combined sewer overflows . . . , sanitary sewer overflows . . . , and municipal separate storm sewer systems."[116] This

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[106] Ohio Construction General NPDES Permit, *supra* note 45.

[107] RAIN WATER MANUAL, *supra* note 62, at ch. 2 p. 1, ch. 4 p. 1.

[108] RAIN WATER MANUAL, *supra* note 62, at ch. 2 p. 27, ch. 4 p. 1.

[109] Bogoevski Interview, *supra* note 76.

[110] *Id.*

[111] *Id.*

[112] Announcement of the National Enforcement and Compliance Assurance Priorities for Fiscal Years 2008, 2009 and 2010, 72 Fed. Reg. 58084 (Oct. 12, 2007).

[113] U.S. EPA, *National Enforcement Initiatives*, http://www.epa.gov/compliance/data/planning/initiatives/index.html#about.

[114] U.S. EPA, *Compliance and Enforcement National Priority, Clean Water Act, Wet Weather, Stormwater* (Oct. 2007), *available at* http://epa.gov/oecaerth/resources/publications/data/planning/priorities/fy2008prioritycwastorm.pdf. OECA does not define big box stores specifically. *Id.* Their criteria are based on the square footage of the company's stores, the company's annual revenue, and the number of new stores the company plans to construct from 2007 to 2010. *Id.* Ready mix concrete plants is the other sector OECA's stormwater strategy indentifies. *Id.*

[115] U.S. EPA, *National Enforcement Initiatives for Fiscal Years 2011–2013*, http://www.epa.gov/compliance/data/planning/initiatives/initiatives.html#msos.

[116] *Id.*

change in focus indicates fewer resources will be devoted by the U.S. EPA to enforcing construction NPDES permits in the next three years than were devoted in the past three years. If the construction general NPDES permit enforcement program was ineffective during 2008-2010, devoting fewer resources to that enforcement program will exacerbate the problem unless the U.S. EPA is given the authority to use more forceful penalties.

V. WHY THE CURRENT ENFORCEMENT PROGRAM IS INEFFECTIVE.

There are three main reasons why construction sites violate their NPDES permits: sites do not know the requirements, sites do not know how to comply, or sites are voluntarily out of compliance.[117] In the past, not knowing the requirements and not knowing how to comply were frequent reasons for noncompliance.[118] However, over the past fifteen years the U.S. EPA provided more compliance assistance to construction companies than to any other industry.[119] In 2005 and 2006, the U.S. EPA held sixty-eight stormwater workshops and training courses.[120] Likewise, the Ohio EPA holds classes for construction companies and MS4s on compliance with NPDES permits.[121] As a result, lack of knowledge regarding the regulations and how to comply with them should no longer be major causes of noncompliance in Ohio.[122]

The following subsections focus on the remaining primary reason for noncompliance: the lack of economic incentive to comply. Subsection A discusses the economic analysis construction companies could perform to determine whether to comply with their NPDES permits. Then, Subsection A uses actual Ohio EPA data to determine how large a fine must be to properly discourage construction sites from violating their NPDES permits. Subsection B compares the average cost of complying to the average cost of violating a general construction NPDES permit. Subsection C discusses the benefit construction companies gain from not properly installing and maintaining BMPs. Subsection D provides an example of a company that continued to violate the NPDES permit despite a large monetary penalty.

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[117] *See* Lauren Kabler, *EPA Steps Up Compliance Assistance and Enforcement at Construction Sites*, 21 NAT. RESOURCES & ENV'T 12, 13 (2007) (showing a senior attorney in EPA's Office of Enforcement and Compliance Assurance office discussing problems with enforcing construction general NPDES permits). Other possible reasons for noncompliance could include: compliance is impossible, the construction site attempted to comply but failed by mistake, or the site was in compliance but the company had not noticed the subsequent need to repair or modify the existing BMPs. Through my personal experience inspecting construction sites, I have found these reasons for noncompliance to be rare.

[118] Bogoevski Interview, *supra* note 76.

[119] Kabler, *supra* note 117, at 14.

[120] *Id.*

[121] Maxine Goodman Levin College of Urban Affairs, *Great Lakes Environmental Finance Center, Training Materials*, CLEVELAND STATE UNIVERSITY (Jan. 10, 2011, 1:54 PM), http://www.urban.csuohio.edu/glefc/training/training_materials.html.

[122] Bogoevski Interview, *supra* note 76.

A. What Would a Reasonable Contractor Do: Risk v. Reward

Enforcement systems assume the threat of penalties gives the regulated community the incentive to comply with environmental regulations.[123] Civil penalties in Clean Water Act pollution case[s] "must be high enough to insure that polluters cannot simply absorb the penalty as cost of doing business."[124] If the Ohio EPA is relying on monetary penalties to enforce the construction general NPDES permit, the fines must be large enough so that it is not cheaper to be out of compliance and accept a fine. For example, if the cost of complying with the NPDES permit is $10,000 but the potential fine is only $5,000 then it would make economic sense *not* to comply.

This type of analysis is similar to the Learned Hand Formula developed in *Carroll Towing*.[125] Judge Learned Hand wrote that a reasonable person would bear the burden of preventing a consequence if that burden was less than the cost of the consequence multiplied by the probability of its occurrence.[126] The second half of the Hand Formula indicates that to calculate risk, a court considers both the cost of the consequence and the probability of its occurrence. Likewise, a construction company determining the risk of not complying with a NPDES permit would consider both the magnitude of a fine and the probability of getting that fine. Considering economics alone, a reasonable company would comply with their general construction NPDES permit if the burden/cost of complying (C) was less than the potential fine (F) multiplied by the probability of being fined (P). $C < F * P$. Therefore, to deter a company from violating the permit, the potential fine must be greater than the cost of compliance divided by the probability of being fined. For example, if the cost of compliance was $10,000 and the probability of getting fined was 50% then it would make economic sense not to comply if the fine was anything less than $20,000. In this example, on average, it would be cheaper for a construction company to be out of compliance.

The U.S. EPA has a specific formula it uses to determine how large of a fine to seek in enforcement actions for violations of the construction general NPDES permit.[127] "EPA Regions are required to follow written Agency-wide and program-specific penalty policies and procedures."[128] One factor in the construction general

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[123] Memorandum from Steven A. Herman, Assistant Administrator, U.S. EPA, Office of Enforcement to U.S. EPA Administrators (June 2, 1993), *available at* http://www.epa.gov/compliance/resources/policies/state/oversgt-penal-mem.pdf; U.S. EPA, IDENTIFYING AND CALCULATING ECONOMIC BENEFIT THAT IS AN "ILLEGAL COMPETITIVE ADVANTAGE" 2 (June 20, 2003).

[124] Pirg v. Powell Duffryn Terminals, Inc. 720 F.Supp. 1158, 1166 (D.N.J. 1989).

[125] United States v. Carroll Towing Co., 159 F.2d 169 (2d Cir. 1947).

[126] *Id.*

[127] *See generally* U.S. EPA, *Supplemental Guidance to the Interim Clean Water Act Settlement Penalty Policy* (Feb. 5, 2008) *available at* http://epa.gov/compliance/resources/policies/civil/cwa/constswpenpolguidance020508.pdf (hereinafter "*CWA Settlement Penalty Policy*"). The formula is "Penalty = (Economic Benefit) + (Gravity) +/- (Gravity Adjustment Factors) – (Litigation Considerations) – (Ability to Pay) – (Supplemental Environmental Projects)." *Id.* at 1.

[128] *See generally*, *Oversight of State and Local Penalty Assessments: Revisions to the Policy Framework for State/EPA Enforcement Agreements*, Memorandum from Assistant

NPDES permit penalty formula is the economic benefit the company gained from not complying.[129] The economic benefit factor is meant to ensure that a company being fined did not profit from noncompliance.[130]

The U.S. EPA uses a computer program, called the BEN model, to calculate economic benefit.[131] This calculation is supposed to "represent the amount of money that would make the violator indifferent between compliance and noncompliance."[132] This calculation considers the cost of complying plus other benefits the company would have received by not complying.[133] However, this calculation does not factor in the probability of a violator being fined.[134] Surprisingly, the BEN manual acknowledges this limitation and states that to properly discourage violations, the BEN model should consider the probability of a violator being fined.[135] As a result, if the probability of a violator being fined is anything less than 100%, the economic benefit factor would be less than the violator's true economic benefit.[136] While individual states are not bound to follow the U.S. EPA's penalty polices, they are strongly encouraged to develop their own penalty polices that use the BEN model to calculate economic benefit.[137] The Ohio EPA uses the BEN model to calculate economic benefit when it believes economic benefit factor will be significant.[138] Therefore, the Ohio EPA also does not consider the probability of a violator being fined when calculating economic benefit.

In Ohio, construction sites have a very low probability of being inspected. Furthermore, even if a construction site is inspected and found out of compliance, there is a low probability that the Ohio EPA will pursue a formal enforcement action. On September 21, 2010, there were 12,619 open construction general NPDES permits.[139] From August 1, 2008, to August 31, 2010, the Ohio EPA only inspected

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Administrator Steven A. Herman 2 (July 20, 1993) (1993 Policy) [hereinafter "*Oversight of State and Local Penalty Assessments*"].

[129] *CWA Settlement Penalty Policy*, *supra* note 127.

[130] *Id.*

[131] *Id.* at 2. The penalty policy considers both the avoided costs and delayed costs. For construction sites, EPA will factor in the cost of obtaining an NPDES permit, the cost of developing a SWPPP, the cost of the BMPs, the cost of doing the required inspections, and the cost of maintenance. *Id.*

[132] U.S. EPA, BEN USER'S MANUAL A-1 (Sept. 1999), *available at* http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/wqplans/benmanual.pdf [hereinafter "*BEN Manual*"].

[133] *Id.*

[134] *Id.*

[135] *Id.*

[136] *Id.*

[137] *Oversight of State and Local Penalty Assessments*, *supra* note 128, at 7. States that use the model will receive less intensive oversight. *Id.*

[138] U.S. EPA: REGION FIVE, REVIEW OF OHIO EPA ENFORCEMENT PROGRAM FEDERAL FISCAL YEAR (FFY) 2006, 31 (2007).

[139] *Construction NOI Stormwater General Permit List*, OHIO EPA: DIV. OF SURFACE WATER: DISCHARGERS COVERED UNDER STORMWATER NPDES GEN. PERMITS (Sept. 21, 2010,

2,470 construction sites.[140] From that data, there is an average of 1,186 inspections per year.[141] Based on these numbers, each year, a construction site has only a 9.4% chance of being inspected.[142]

From July 1, 2009, to September 17, 2010, 1,368 construction sites received a letter of warning or a notice of violation.[143] From that data, there is an average of 1,132 letters of warning or notices of violation written every year.[144] This means that on average, 1,132 construction sites are found out of compliance every year. Based on the average number of inspections per year and the average number of inspections that resulted in notices of violation, 95% of construction sites in Ohio are out of compliance with their NPDES permits.[145] Throughout the United States, 90% of construction sites are out of compliance with their NPDES permits.[146] There is clearly a problem with enforcement if a regulation has either a 90% or 95% rate of noncompliance. This indicates that Ohio's enforcement program, the U.S. EPA's enforcement programs, and many other states' enforcement programs are ineffective.

10:12 PM), http://www.epa.ohio.gov/dsw/permits/gplist.aspx (under the "Construction Stormwater General Permits" drop down menu click "List of Permitees"). EPA's Office of Water estimates 250,000 construction sites annually are required to obtain an NPDES permit. Kabler, *supra* note 117, at 13. Further, Kabler estimates that 60% of construction sites required to obtain a permit fail to obtain a permit. *Id.* Dan Bogoevski, of the Ohio EPA, stated that failure to obtain a permit had in the past been a frequent violation. Bogoevski Interview, *supra* note 76. However, recently the majority of construction sites in Ohio are obtaining NPDES permits. *Id.*

[140] E-mail from Richard Bouder, Pub. Records Manager, Ohio EPA, to Author (Oct. 7, 2010, 11:03 EST) (on file with author). The information is from an internal database maintained at Ohio EPA. *Id.*

[141] 2,470 inspections * 12 months / 25 months = 1185.6 inspections/year.

[142] 1,186 inspections/year / 12,619 active listed permitees = 9.39%. Whether or not a construction site gets inspected is normally random. Bogoevski Interview, *supra* note 76. However, the Ohio EPA does keep their eyes on the larger construction projects. *Id.*

[143] E-mail from Dan Bogoevski, District Engineer, Division of Surface Water, Ohio EPA, to Author (Sept. 17, 2010, 11:22 EST) (on file with author). The information is from an internal database maintained at Ohio EPA. *Id.* This number represents any communication written to a construction site after an inspection. Therefore, theoretically this number could include letters of compliance. However, Dan Bogoevski, who provided this information, stated that the Ohio EPA does not write letters of compliance to construction sites even if they are in compliance. September Telephone Interview with Dan Bogoevski, District Engineer, Division of Surface Water, Ohio EPA (Sept. 16, 2010).

[144] 1,368 LOWs and NOVs * 12 months / 14.5 months = 1,132 LOWs and NOVs/year.

[145] 1,132 LOWs and NOVs/year / 1,186 inspections/year = 95.4%. This is consistent with the inspections I performed during the summer of 2005 as an inspector of construction sites. I performed about 50 inspections and found all were in noncompliance. The Ohio EPA preformed 5,807 non-construction site CWA inspections between January 1, 2008, and October 28, 2010. E-mail from Chris Bowman, Environmental. Manager, Ohio EPA, Division of Surface Water, Information Resources Management Section, to Author (Nov. 1, 2010, 11:57 EST) (on file with author). The information is from an internal database maintained at Ohio EPA. *Id.* Those inspections resulted in 2,659 NOVs. *Id.* Based on those numbers, there is a 54% compliance rate of the CWA for non-construction sites. *Id.*

[146] Kabler, *supra* note 117, at 13. The 90% rate of non-compliance is Kabler's estimate. *Id.*

Of the sites that were found out of compliance, very few were subjected to formal enforcement actions. In fact, in 2009, the entire surface water division of the Ohio EPA brought only 64 formal enforcement actions.[147] Even assuming all of those enforcement actions were for violations of the construction general NPDES permit, this means only 5.7% of construction sites that are given a letter of warning or notice of violation are subjected to a formal enforcement action.[148] Thus, the chance that the Ohio EPA would inspect a site, write a notice of violation, and then pursue a formal enforcement action against a construction site is 0.51%.[149] In the Hand Formula, 0.51% represents the probably of being fined. With this probability, a fine would need to be 200 times larger than the cost of complying with the NPDES permit in order to be an effective disincentive.

B. The Cost of Compliance v. The Cost of Noncompliance

When compared to the cost of complying, the fines imposed are not large enough to be an effective disincentive. The total cost of complying with the general construction NPDES permit includes the administrative costs (e.g., developing a SWPPP) and BMP costs. "The total cost of a stormwater BMP is made up of the following three components: construction costs[,] maintenance and inspection costs[, and] land opportunity costs."[150] Complying with the general construction NPDES permit can be expensive. For a construction site that is between one and two acres, the average cost of complying with the general construction NPDES permit is $2,535.[151] For a construction site that is between three and four acres, the average cost of compliance is $5,927.[152] For a construction site that is between four and five acres, the average cost of compliance is $10,038.[153] The cost of complying becomes

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[147] *Enforcement Program*, OHIO EPA: DIV. OF SURFACE WATER, http://www.epa.ohio.gov/dsw/enforcement/enf.aspx (under "Enforcement Action Documents" follow the links to the various years' enforcement actions). There were 65 formal enforcement actions in 2007, 55 in 2008, 64 in 2009, and 34 in 2010. *Id.* These numbers include all of the formal enforcement actions in the surface water division. *Id.* This includes violations of NPDES permits other than construction sites, violations of discharges to treatment plants, etc. As a result, the number of formal enforcement actions against construction sites violating their NPDES permit in 2009 is actually lower than 64. *Id.*

[148] These formal enforcement actions are for more than just violations of the construction general NPDES permit. These enforcement actions are also for industrial discharge violations, MS4 violations, wastewater treatment violations, etc. In reality, for 2010, I only found one formal enforcement action for a violation to the construction general NPDES permit. For 2009, I found three. However, because I did not look at each formal enforcement action, for this calculation I am assuming that all 64 formal enforcement actions were for violations of the construction general NPDES permit. This calculation errs on the side of caution. 64 formal enforcement actions / 1,132 LOWs and NOVs/year = 5.65%.

[149] 64 formal enforcement actions / 12,619 active listed permitees = 0.507%.

[150] N.C. STATE UNIV., AN EVALUATION OF COST AND BENEFITS OF STRUCTURAL STORMWATER BEST MANAGEMENT PRACTICES: IN NORTH CAROLINA 4 (2003).

[151] U.S. EPA, PRELIMINARY DATA SUMMARY OF URBAN STORMWATER BEST MANAGEMENT PRACTICES ch. 6, p. 40 (1999).

[152] *Id.*

[153] *Id.*

much more expensive for sites larger than five acres if they need to install a retention or detention basin. The average cost of installing a retention or detention basin suitable for a five-acre commercial development is $42,510.[154] The annual maintenance cost for a retention or detention basin suitable for a five-acre site is $1,640.[155] The cost to install a retention or detention basin suitable for a thirty-eight-acre site is $84,800.[156] Applying the Hand Formula to a five-acre construction site that is completely out of compliance: $10,038 (cost of compliance) / 0.51% (probability of being fined) = $1.97 million (fine needed to be an effective disincentive).

Since 1998, the U.S. EPA made six significant settlements involving violations of construction general NPDES permits.[157] Among these settlements, the average fine was $1.2 million dollars.[158] However, these formal enforcement actions were brought against companies for permit violations at multiple construction sites.[159] The average fine per construction site was only $10,704.[160] This is much lower than the $1.97 million fine the Hand Formula suggests would be effective. The largest fine per construction site was from a 2007 settlement with J.H. Berra Construction Company.[161] The settlement was a $590,000 fine for permit violations at three construction sites.[162] This is a $197,000 fine per construction site.[163] However, these construction sites were a total of 400 acres.[164] The smallest fine per construction site was from a 2010 settlement with Hovnanian Enterprises, Inc.[165] The settlement was a $1 million fine for permit violations at 591 construction sites.[166] This is only a $1,692 fine per construction site.[167] Therefore, according to the Hand Formula, even after receiving respective fines of $590,000 and $1 million, J.H Berra Construction

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[154] *Id.* at ch. 6, p. 18.

[155] *Id.*

[156] *Id.*

[157] U.S. EPA: Enforcement and Compliance, *Cases and Settlements*, U.S. EPA (Jan. 10, 2011, 2:00 PM), http://cfpub.epa.gov/compliance/cases/. There were actually seven cases that involved violations of construction NPDES permits. *Id.* However, in one of seven cases, the major issue was that the company failed to obtain a dredge and fill permit for 378 acres of coastal property. *Id.* Failing to obtain a NPDES permit was a side issue. *Id.* Because the consent decree did not itemize the fine, this case will be excluded from any calculations discussed.

[158] *Id.*

[159] *Id.*

[160] *Id.*

[161] *Id.*

[162] *Id.*

[163] $590,000 / 3 construction sites = $196,666 per construction site.

[164] *Id.*

[165] *Id.*

[166] *Id.*

[167] $1,000,000 / 591 construction sites = $1,692 per construction site.

Company and Hovnanian Enterprises, Inc. made the right economical decisions by violating their NPDES permits.

In Ohio, since 2009, the Ohio EPA has brought formal enforcement actions against three companies for violations of the Ohio construction general NPDES permit.[168] For each settlement, the violations were at only one construction site.[169] The fines were $8,000[170], $5,000[171], and $3,000.[172] The average fine was $5,333.[173] Applying the Hand Formula, $5,333 (the average fine per construction site) * 0.51% (the probability of being fined) = $27 (this represents the average cost of noncompliance). From a general contractor's perspective, it makes more sense to violate the NPDES permit and spend an average of $27 in fines per construction site than to be in compliance with the NPDES permit and spend an average of $10,038 in BMPs per construction site. These fines imposed by both the U.S. EPA and the Ohio EPA are far too small to be effective disincentives.

C. Cutting Corners to Save Money: Avoiding and Delaying the Installation of BMPs

Even if construction sites are not completely out of compliance, they can still save money violating their NPDES permits. This is done by avoiding or delaying the installation of BMPs and by not performing necessary maintenance on BMPs.[174]

Many BMPs construction sites are required to install temporary controls.[175] Sediment controls, such as silt fence, sediment basins, and storm drain inlet protection are only required during construction.[176] Erosion controls such as seeding and mulching may need to be applied multiple times during a construction project.[177]

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[168] *In re* Ernst Dev. Co. Before the Ohio EPA, Director's Final Finding and Orders (Apr. 10, 2010), http://www.epa.state.oh.us/portals/35/enforcement/ErnstDev.pdf; *In re* The Promenade at Beavercreek, LLC. Before the Ohio EPA, Director's Final Finding and Orders (Sept. 24, 2009), http://www.epa.ohio.gov/LinkClick.aspx?fileticket=rS7Zz7L5gVo%3d&tabid=3439; *In re* NP Ltd. P'ship. Before the Ohio EPA, Director's Final Finding and Orders (Jan. 22, 2009), http://www.epa.state.oh.us/portals/35/enforcement/NPLimited.pdf; *In re* Stonebridge Land Corp. Before the Ohio EPA, Director's Final Finding and Orders (Oct. 16, 2009), http://www.epa.state.oh.us/LinkClick.aspx?fileticket=Mu9sE6uf1Ak%3d&tabid=3439. There were actually four formal enforcement actions that involved violations of construction NPDES permits. *Id.* However, in one of the four, disturbing a wetlands was a major issue and the director's order did not itemize the fine. *Id.* Therefore, that case will be left out of the calculations.

[169] Ernst Dev. Co., *supra* note 168; The Promenade at Beavercreek LLC, *supra* note 168; NP Ltd. P'ship., *supra* note 168; Stonebridge Land Corp., *supra* note 168.

[170] Ernst Dev. Co., *supra* note 168.

[171] The Promenade at Beavercreek, *supra* note 168.

[172] NP Ltd. P'ship., *supra note* 168.

[173] ($8,000 + $5,000 + $3,000) / 3 = $5,333.

[174] *See infra* Part IV.C.

[175] RAIN WATER MANUAL, *supra* note 62.

[176] *Id.* at ch. 6.

[177] *See id.* at ch. 7, p. 37.

Because these controls are temporary, a construction site only risks a violation during the times in which the BMPs are required. A construction company can avoid the full cost of any BMP by avoiding installation. The total annual cost (installation plus maintenance) for silt fence is $850 per drainage acre, for sediment basins is $900 per drainage acre, and for storm drain protection is $150 per inlet.[178] The total annual cost of seeding and mulching is $1,100 per acre.[179] As discussed above, a construction company can avoid the installation of sediment and erosion controls with little chance of being inspected. Therefore, avoiding the installation of sediment and erosion controls will likely go unnoticed and result in a cost savings.

Another way that construction companies benefit economically is by delaying the installation of BMPs. For example, the proper installation of sediment basins can slow down a construction project.[180] Therefore, construction companies benefit by delaying the installation of sediment basins until a time that is convenient. To be effective, silt fence, sediment basins, and storm drain inlet protection, require construction companies to perform frequent inspections and maintenance.[181] The average annual maintenance costs for silt fence is $700 per drainage acre, for sediment basins is $275, and for storm drain inlet protection is $60 per inlet.[182] Construction companies that delay the installation of those BMPs save on the maintenance costs. Constructions sites that have installed the BMPs can save the maintenance costs by choosing not to perform the necessary maintenance. There are similar problems with permanent stabilization (which can be a temporary control).[183] Even when able to, a construction site is not motivated to reach final grade and establish permanent stabilization if work is still being done on other parts of the site because of the risk of re-disturbing the already stabilized soil.[184] Construction

[178] GUIDANCE SPECIFYING MANAGEMENT MEASURES, *supra* note 74.

[179] *Id.* at Table 4-15. Temporary stabilization can be accomplished by just mulching, which is basically laying down straw to cover any bare soil. RAIN WATER MANUAL, *supra* note 62, at ch. 7 p. 37. Mulch needs to inspected and reapplied to cover exposed soil. *Id.* Mulching can be costly because it needs to be repeatedly reapplied. *Id.* Therefore, mulching and seeding is a better option. *See id.* at 33-36. Temporary seeding is accomplished by planting a fast growing plant to establish cover. *See id.* at 35. Construction sites may be reluctant to use temporary seeding over mulching because they may have to apply top soil to use temporary seeding and because they have to consider the type of plant to use. *Id.* at 34-35. Temporary seeding may need to be applied multiple times during a construction project if there are numerous periods where the soil will not be disturbed for over twenty-one days. *Id.* at 33.

[180] Bogoevski Interview, *supra* note 76.

[181] RAIN WATER MANUAL, *supra* note 62, at ch. 6.

[182] GUIDANCE SPECIFYING MANAGEMENT MEASURES, *supra* note 74, at Table 4-16.

[183] Permanent stabilization is a temporary control because it must be applied if disturbed soil is to remain idle for over year, regardless of whether the soil will be disturbed again after that year. Ohio Construction General NPDES Permit, *supra* note 45.

[184] For example, if a construction site is finished doing work in an area they should reach final grade and then establish permanent cover. But, if they need to run heavy equipment over that area or if they need to relay a pipe in that area then they would re-disturb that area and as a result would have to re-grade and reestablish permanent cover. This is an additional cost the construction site would not incur if they just delayed reaching final grade.

companies benefit from delaying permanent stabilization because they avoid the risk of having to do rework.

Finally, even if a construction company is motivated by environmental consciousness, it may not be aware of the consequences of its actions or the ineffectiveness of faulty controls. Construction sites must devote resources to installing and maintaining both sediment and erosion controls. "Sediment control is the compromise between protecting water resources and accomplishing work during grading and construction activities."[185] Construction sites must be willing to compromise by taking manpower that would be devoted to advancing construction activities and diverting that manpower to installing, inspecting, and repairing sediment and erosion controls. If behind schedule, a construction site is unlikely to be motivated to take resources away from construction activities. Even an environmentally conscious construction company may be willing to be out of compliance and pollute if its priority is meeting a tight construction schedule. This is not a far reach considering many construction foremen and construction workers are even willing to risk their own safety to meet completion targets.[186]

Installing and maintaining BMPs costs money.[187] Avoiding the installation of BMPs, delaying the installation of BMPs, and failing to perform the necessary maintenance on BMPs are violations Ohio EPA inspectors typically find on construction sites.[188] By violating their NPDES permits, construction sites are saving money at the expense of damaging the environment. However, according to the Hand Formula, construction sites are making the correct economic decision. The average cost of noncompliance in Ohio is only $27.[189] This is too low to be an effective disincentive when a five-acre construction site can save about $3,500 per year by installing, but not maintaining, silt fence.[190]

D. Wal-Mart: An Example of an Ineffective Penalty

The recent U.S. EPA enforcement actions against Wal-Mart illustrate why current fines are not an effective disincentive. In 2001, the U.S. EPA filed a complaint against Wal-Mart for violations of NPDES permits at seventeen different construction sites throughout various states.[191] The U.S. EPA and Wal-Mart agreed to a $1 million settlement.[192] However, this penalty did not entice Wal-Mart to ensure compliance with its construction general NPDES permits.

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[185] RAIN WATER MANUAL, *supra* note 62, at ch. 6.

[186] *See generally* Edwin Sawacha, *Factors Affecting Safety Performance on Construction Sites*, 17 INTERNATIONAL JOURNAL OF PROJECT MANAGEMENT 309 (1999).

[187] *See generally* N.C. STATE UNIV., *supra* note 150.

[188] *See supra* Part III.D. Other typical violations include improper installation and maintenance of BMPs, which is also a cost savings. *See id.*

[189] *See supra* Part V.A.

[190] *See supra* Part V.C. $700/acre (annual maintain cost) * 5 acres = $3500.

[191] Complaint at 22-23, United States v. Wal-Mart Stores Inc., No. 1:04-CV-00301 (D. Del. May 12, 2004), *available at* http://www.epa.gov/compliance/resources/complaints/civil/cwa/walmart2-cp.pdf [hereinafter "Complaint, Wal-Mart Stores"].

[192] *Id.* at 23. The settlement also required that Wal-Mart develop a compliance management plan. *Id.*

After the 2001 settlement, inspections found violations of the NPDES permit at twenty-four Wal-Mart construction sites.[193] These violations included failing to install and maintain BMPs, such as silt fence, retention basins, and inlet protection.[194] At a number of construction sites, Wal-Mart even failed to obtain NPDES permits.[195] As a result, the U.S. EPA filed another complaint against Wal-Mart, which settled in 2004.[196] The settlement required Wal-Mart to pay a $3.1 million fine and required Wal-Mart to have strict supervision over its construction sites.[197] The settlement also subjected Wal-Mart to strict U.S. EPA oversight on future construction projects – Wal-Mart was required to hire a Director of Stormwater Compliance that would submit quarterly inspection reports to the U.S. EPA.[198]

Wal-Mart's failure to comply with its general construction NPDES permits after receiving the first penalty of $1 million indicates the ineffectiveness of monetary penalties. The second settlement, a $3.1 million penalty, may have been enough to deter Wal-Mart from future violations. However, Wal-Mart's current compliance is more likely the result of the combination of the monetary and non-monetary penalties, such as the strict EPA oversight.

VI. WHY MONETARY PENALTIES ALONE WILL NOT WORK

To have an effective enforcement program based on monetary penalties, the fines for noncompliance (F) multiplied by the probability of violators being fined (P) must be greater than the cost of complying (C): $F \times P > C$. There are three ways to change the enforcement of construction general NPDES permits so that fines would be an effective disincentive: decreasing the cost of compliance, increasing the fines, or increasing the probability that a violator would be fined. Unfortunately, all three of these methods are impractical.

A. Decreasing the Cost of Compliance

The Ohio EPA has very little control over the cost of compliance. Even for construction sites between one and two acres, Ohio EPA's permit fees are only 3.6% of the total cost of compliance.[199] The majority of the cost of complying with the construction general NPDES permit comes from the installation and maintenance of

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[193] U.S. EPA, U.S. v. WAL-MART STORES, Inc.: FACT SHEET (2004), *available at* http://www.epa.gov/compliance/resources/cases/civil/cwa/walmart2-fs.pdf.

[194] Complaint, Wal-Mart Stores, *supra* note 191.

[195] *Id.*

[196] Consent Decree, United States v. Wal-Mart Stores Inc., No. 1:04-CV-00301 (D. Del. July 28, 2004), *available at* http://www.epa.gov/compliance/resources/decrees/civil/cwa/walmart2-cd.pdf.

[197] *Id.* at 22.

[198] *Id.* at 44.

[199] EPA, PRELIMINARY DATA SUMMARY OF URBAN STORM WATER BEST MANAGEMENT PRACTICES ch. 6 p. 40 (1999) [hereinafter "PRELIMINARY DATA OF BMPS"]. Ohio EPA's permit fees total $91. *Id.* The average cost of compliance for a construction site between one and two acres is $2535. *Id.* $91/$2535 = 3.6%.

BMPs.[200] The Ohio EPA does not have control over the cost of the BMPs, which are driven by market forces.[201] Therefore, the Ohio EPA cannot significantly lower the cost of complying with the construction general NPDES permit without relaxing the permit's requirements, which would result in decreased environmental protection.

B. Increasing the Fine

Based on the analysis above, a fine would have to be over 200 times greater than the cost of compliance to be a proper disincentive.[202] For a construction site between four and five acres, the average cost of compliance is $10,038. Therefore, to be a proper disincentive, the fine would need to be $2,007,600. The Supreme Court in *Tull v. United States* held that calculating a civil penalty under the CWA is "highly discretionary."[203] Civil penalties may be based on a single component of the penalty formula as long as all of the components are considered.[204] The penalty formula is "Penalty = (Economic Benefit) + (Gravity) +/- (Gravity Adjustment Factors) - (Litigation Considerations) - (Ability to Pay) - (Supplemental Environmental Projects)."[205]

For a five-acre construction site, a fine from the U.S. EPA could not be $2,007,600 for three main reasons. First, the U.S. EPA's penalty policy does not consider the probability of being fined when calculating the economic benefit.[206] Therefore, even if a penalty is based solely on economic benefit it would not reach $2,007,600. Second, the gravity component of the penalty formula would never reach that high a fine.[207] Lastly, the U.S. EPA's penalty formula has a component that reduces the fine based on the violator's ability to pay.[208] This means that the U.S. EPA will not seek a penalty that is beyond the violator's financial capability.[209] Even in light of the Supreme Court's decision in *Tull*, federal courts have reduced penalties that exceed a violator's ability to pay.[210] This is judged based on the violator's ability to continue operating their business after paying the fine.[211] A large

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[200] *Id.*

[201] *See* ADA WOSSINK & BILL HUNT, THE ECONOMICS OF STRUCTURAL STORMWATER BMPS IN NORTH CAROLINA 5 (2003).

[202] While it is true that a lower fine may be an adequate disincentive for some construction companies, this is based on what a reasonable construction company would do if they were applying the Hand Formula when making their decision.

[203] Tull v. United States, 481 U.S. 412, 427 (1987).

[204] Sierra Club v. Cedar Point Oil Co., 73 F.3d 546, 576 (5th Cir. 1996) (citing Tull v. United States, 481 U.S. 412, 427 (1987)).

[205] *CWA Settlement Penalty Policy*, *supra* note 127, at 1.

[206] BEN MANUAL, *supra* note 132.

[207] *CWA Settlement Penalty Policy*, *supra* note 127.

[208] *Id.*

[209] U.S. EPA, INTERIM CLEAN WATER ACT SETTLEMENT PENALTY POLICY 21 (1995).

[210] United States. v. Midwest Suspension & Brake, 824 F.Supp. 713, 736 (E.D. Mich. 1993).

[211] INTERIM CLEAN WATER ACT SETTLEMENT PENALTY POLICY, *supra* note 209, at 21.

number of small construction companies would probably not be able to operate after paying a $2,007,600 fine.[212]

Regardless of the EPA's inability to impose such a large fine, it would be unjust to make a construction company pay a fine 200 times larger than the cost of compliance just to serve as a disincentive for other construction companies. Therefore, increasing the fine to the extent necessary for the fine to be an appropriate disincentive is impractical.

C. Increasing the Probability a Violator is Fined

To increase the probability that violators are fined, the Ohio EPA would need to initiate more formal enforcement actions. The Ohio EPA currently has only four attorneys working on surface water enforcement actions.[213] The Ohio Attorney General's Environmental Division has five to six attorneys dedicated to water related enforcement actions.[214] Assuming that each attorney is working a full caseload, to increase the number of formal enforcement actions, the Ohio EPA and the Ohio Attorney General's Office would need to either hire additional attorneys or shift resources from another enforcement program. Hiring enough attorneys requires funding that may not be available. Shifting resources from another enforcement program may compromise that program. Therefore, increasing the probability that a violator is fined is impractical.

The fine for violations of the construction general NPDES permit multiplied by the probability a violator is fined is less than the cost of complying with the permit.[215] The Ohio EPA cannot change this.[216] As a result, a reasonable construction company relying on economics alone would choose not to comply with the permit. Therefore, monetary penalties alone are not an effective method of enforcing the Ohio construction general NPDES permit. This is why 95% of construction sites in Ohio are violating their NPDES permits.

VII. TYPES OF NON-MONETARY ENFORCEMENT METHODS AND THEIR EFFECTIVENESS

As discussed above, monetary penalties have been an ineffective method of enforcing the Ohio construction general NPDES permit. Below, this Note will describe various non-monetary penalties, who has the authority to issue those penalties, and the estimated effectiveness of those penalties.[217]

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[212] This is an assumption.

[213] Voice Message: Bill Fischbein to Author, Ohio EPA, Office of Legal Services Personnel (Nov. 22, 2010, 10:15 AM) (notes on file with author).

[214] *Id.*

[215] *See supra* Part V.C.

[216] *See supra* Part VI.

[217] The following are other non-monetary penalties that were considered but not included in this note: Revoking a construction site's building permit; Not allowing contractors with construction sites out of compliance to bid on public jobs; Requiring contractors found in violation to attend mandatory training; and Prohibiting licensed plumbers, electricians, and HVAC installers from working on sites out of compliance.

A. Preliminary Injunctions

A preliminary injunction would probably be the most forceful and direct way of forcing a construction site to come into rapid compliance. District courts have the authority to issue preliminary injunctions for violations of NPDES permits.[218] However, there are two major problems with relying on preliminary injunctions to enforce NPDES permits.

First, preliminary injunctions are issued by courts.[219] Therefore, a formal enforcement action would need to be initiated before a preliminary injunction could be issued. As discussed above, very few formal enforcement actions are taken against construction sites for violating their NPDES permits.[220] While preliminary injunctions may bring those few construction sites rapidly back into compliance, it still does not serve as a good disincentive for other construction sites. When a formal enforcement action is initiated and a site realizes a preliminary injunction is likely, it will probably install the proper BMPs and come into compliance. At that point, a construction site's costs would just equal the costs of compliance. Courts will not issue a preliminary injunction if the construction site has returned to compliance. [221] Even if a preliminary injunction is issued, the injunction can be dissolved after the site comes into compliance.[222] At that point, the construction site's costs would be the costs of compliance plus the delay in construction.

The second major problem with preliminary injunctions is that they are not automatic.[223] Courts are not required to issue a preliminary injunction just because a company is found in violation of a NPDES permit.[224] Overall, preliminary injunctions would not be an effective disincentive because the probability of a preliminary injunction being issued to a construction site found out of compliance is low.

B. Revoking Licenses

One way the Ohio EPA could enforce the construction general NPDES permit is by suspending or revoking workers' licenses. An administrative agency can suspend or revoke a license without giving notice and without having a hearing.[225] Many states require general contractors to obtain a license.[226] However, general

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[218] Weinberger v. Romero-Barcelo, 456 U.S. 305, 320 (1982).

[219] FED. R. CIV. P. 65.

[220] *See supra* Part V.A.

[221] Comfort Lake Ass'n, Inc. v. Dresel Contracting, Inc., 138 F.3d 351, 554-55 (8th Cir. 1998).

[222] 43A C.J.S. *Injunctions* § 375 (2010).

[223] *See generally* Michael Lozeau, *Preliminary Injunctions and The Federal Water Pollution Control Act: The Clean Water Permit Program as a Limitation on the Courts' Equitable Discretion*, 42 RUTGERS L. REV. 701 (1990).

[224] Weinberger v. Romero-Barcelo, 456 U.S. 305, 320 (1982).

[225] 9 McQuillin Mun. Corp. § 26:117 (3rd ed.) (citing Ohio ex rel. De Weaver v. Faust, 205 N.E.2d 14 (Ohio 1965)).

[226] E.g., ALA. CODE §§ 34-8-1, -2, -9 (2010); N.C. GEN. STAT. §§ 87-1, -10 (2010).

contractors are not required to obtain licenses in Ohio.[227] The Ohio EPA could have an effective enforcement program if Ohio started requiring general contractors to obtain licenses and the Ohio EPA was given the authority to revoke those licenses for violations of NPDES permits. General contractors violating the NPDES permit would be risking their careers. As a result, general contractors would have the proper incentive to comply.

C. Requiring an Individual Permit

Another way the Ohio EPA could enforce the construction general NPDES permit is by requiring violators to obtain individual NPDES permits. Individual permits can be more onerous and expensive than general permits.[228] The threat of having to apply for individual permits on future construction projects may be an effective disincentive for construction companies because the cost of all their future projects would increase.

The Director of the Ohio EPA (the "Director") has the authority to require someone who would be covered under a general permit to be covered under an individual permit.[229] The Director may do this if the site is out of compliance with its permit terms or even if it has previously been out of compliance.[230] The Director could require the construction site to apply for an individual permit and then refuse to issue the individual permit until the construction site comes into compliance with the general permit's terms.[231] The construction site would have ninety days to apply for and obtain an individual permit, at which point their general permit coverage would be terminated.[232]

An individual permit could impose more stringent sediment and erosion controls than a general permit.[233] Therefore, violations on a current construction project could increase the costs of future construction projects because the Director can require a contractor who is out of compliance on a current construction project to get individual NPDES permits for all future projects. This would be a substantial burden on a construction company because its future projects would be more expensive. As a result it would be less competitive in its bidding. Furthermore, the EPA could establish a system where a construction company that has been required to get an individual permit can earn the right to use the general permit after demonstrating compliance for a given time period.

One problem with compelling companies to obtain individual permits is that companies can circumvent being required to obtain individual permits on future construction projects by using shell companies.[234] Many construction companies are

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[227] OHIO REV. CODE ANN. § 4740.01(A) (West 2010).

[228] *See* Advantages of a General Permit, *supra* note 56.

[229] OHIO REV. CODE ANN. § 6111.035(A) (West 2010).

[230] OHIO ADMIN. CODE 3745-38-02(C) (2010).

[231] *Id.*

[232] *Id.*

[233] *See* Advantages of a General Permit, *supra* note 56.

[234] Bogoevski Interview, *supra* note 76.

created for a single construction project.[235] Therefore, if a company is found out of compliance and is required to obtain an individual permit, the general contractor can dissolve the company and create a new company for his next project. The new company would be able to obtain coverage under the general permit. This problem is solved by tying the general contractor to the NPDES permit. This could be accomplished easily if general contractors were required to obtain a license.

D. Solution: Allow the Ohio EPA to Terminate Permit Coverage and Issue Stop-Work Orders

Another type of non-monetary penalty would be for the Ohio EPA to revoke a site's NPDES permit. This would make any further construction activities unlawful. However, construction sites are covered under a general NPDES permit.[236] Therefore, revoking the general construction permit would terminate many construction sites' permit coverage. To single out a construction site, that site's permit coverage alone must be suspended or terminated.

Another method of preventing a construction site from continuing building is issuing stop-work orders. Subsections One through Five discuss who as the authority to revoke NPDES permits or issue stop-work orders. The remaining subsections discuss the benefits and draw backs of stop-work orders.

1. U.S. EPA Authority

The CWA does not specifically give the U.S. EPA the authority to issue general permits.[237] As a result, the CWA does not provide any authority or limitations for the Administrator of the U.S. EPA (the Administrator) to terminate or suspend coverage under a general permit.[238]

With regard to an individual permit, the CWA does not specifically give the Administrator the authority to terminate or suspend a NPDES permit for noncompliance.[239] The methods of enforcement mentioned in 33 U.S.C. § 1319 are fines, criminal charges, injunctions, and orders to comply.[240] These methods must be issued by a court after a formal procedure.[241] The Administrator does not have the authority to use these methods of enforcement without following the formal procedure.[242]

As opposed to the CWA, U.S. EPA regulations do specifically state that the Administrator may issue general NPDES permits.[243] The regulations are silent as to whether the Administrator may suspend or terminate an individual site's coverage

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[235] *Id.*

[236] Ohio Construction General NPDES Permit, *supra* note 45.

[237] *Generally Illegal*, *supra* note 49, at 411.

[238] 33 U.S.C. § 1319 (2006).

[239] *Id.*

[240] *Id.*

[241] *Id.*

[242] *Id.*

[243] 40 C.F.R. § 122.28 (2010).

under a general permit.[244] With regard to an individual permit or a general permit, EPA regulations give the Administrator the authority to terminate a NPDES permit for noncompliance with any term of the permit.[245] However, to terminate or suspend a permit the EPA must follow the procedures set forth in the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation/Termination or Suspension of Permits.[246] These rules impose a procedure similar to the Federal Rules of Civil Procedure.[247] Consequently, this does not produce a quick result and a formal enforcement action would need to be initiated in order for the U.S. EPA to use these enforcement methods.

2. Ohio EPA Authority

States that have been delegated the authority to issue NPDES permits must at least have the ability to terminate these permits for noncompliance.[248] Those states are not required to follow the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation/Termination or Suspension of Permits.[249]

The director of the Ohio EPA (the "Director") has the authority to revoke NPDES permits.[250] But similar to the Administrator of the U.S. EPA, the Director may only do so through a court hearing.[251] Because construction sites in Ohio are covered under a general NPDES permit, revoking the permit would be undesirable because all construction sites would lose their NPDES general permit. The Ohio Revised Code and the Ohio Administrative Code are silent as to whether the Director could terminate an individual construction site's coverage under a general permit without a court hearing.

As demonstrated above, only a small percent of construction sites are subjected to formal enforcement actions and therefore, these types of enforcement methods are not an effective deterrent.

3. Local Government Authority

Local governments that have MS4 permits are also required to inspect and enforce construction general NPDES permits.[252] The Ohio EPA suggests that local governments use the same inspectors that perform health and building code inspections to perform NPDES inspections.[253] Ohio suggests that MS4 enforcement

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[244] *Id.*

[245] 40 C.F.R. § 122.64 (2010).

[246] 40 C.F.R. § 124.5(d)(2) (2010).

[247] *See* 40 C.F.R. § 22 (2010).

[248] 40 C.F.R. § 123.25 (2010).

[249] 40 C.F.R. § 122.64 (2010).

[250] OHIO REV. CODE ANN. § 6111.03(J)(1) (West 2010); OHIO ADMIN. CODE 3745-33-04(G) (2010).

[251] OHIO ADMIN. CODE 3745-33-04(G) (2010).

[252] OHIO ADMIN. CODE 3745-39-03(C)(2)(d)(ii)(f) (2010).

[253] *Ohio MS4 General NPDES Permit*, *supra* note 64, at ch. 4 p. 31.

programs include non-monetary penalties and permit denials for noncompliance.[254] However, Ohio does not specify any type of non-monetary penalties that local governments should use.[255]

In addition to the Ohio construction general NPDES permit, municipalities may require contractors to obtain a permit to disturb land through that municipality.[256] Even if a permit through the municipality is not required, municipalities typically require contractors to submit a stormwater management plan.[257] In many municipalities, construction activities may not begin unless the stormwater management plan has been approved by the municipality.[258] In some municipalities, if an inspector finds a construction site out of compliance, a stop-work order may be issued.[259] For example, Groveport, Ohio's ordinances state, "[w]hen facilities are not constructed according to approved plans, the Village has the explicit authority to compel compliance with the approved plan and the objectives and standards of this regulation, which may include issuance of a stop-work order and/or fines."[260] In many municipal ordinances, the stop-work orders are issued by the director of a committee or department.[261] In these municipalities, the stop-work orders normally need to be in writing.[262] However, verbal stop-work orders may be given if the designated authority finds it is immediately necessary to protect public safety or public interest.[263]

4. Soil and Water Conservation Districts

For unincorporated areas, counties may regulate and enforce construction general NPDES permits through soil and water conservation districts ("SWCDs").[264] If a construction site does not have an NPDES permit, the SWCDs can issue a stop-work

[254] OHIO ADMIN. CODE 3745-39-03 (2010) (comment). The full list is "non-monetary penalties, fines, bonding requirements and permit denials for noncompliance." *Id.*

[255] OHIO ADMIN. CODE 3745-39-03 (2010) (comment).

[256] *E.g.*, SHAKER HEIGHTS, OHIO ORDINANCES 1329.03 (2010); LEXINGTON, OHIO ORDINANCES 943.04 (2009).

[257] *E.g.*, LANCASTER, OHIO ORDINANCES 919.06 (2005); EATON, OHIO ORDINANCES 1111.05 (2009); SANDUSKY, OHIO ORDINANCES 937.06 (2011).

[258] *E.g.*, LANCASTER, OHIO ORDINANCES 919.06 (2005); EATON, OHIO ORDINANCES 1111.05 (2009); SANDUSKY, OHIO ORDINANCES 937.06 (2011).

[259] *E.g.*, SHAKER HEIGHTS, OHIO ORDINANCES 1329.14 (2010); SANDUSKY, OHIO ORDINANCES 937.14 (2011); GROVEPORT, OHIO ORDINANCES 1399.08 (2011).

[260] GROVEPORT, OHIO ORDINANCES 1399.08 (2011).

[261] SANDUSKY, OHIO ORDINANCES 937.14 (2011). Sandusky's ordinances state, "Upon notice, the Director of Engineering Services and/or designee may suspend any active soil disturbing activity for a period not to exceed ninety (90) days, and may require immediate erosion and sediment control measures whenever he or she determines that such activity is not meeting the intent of this Chapter." *Id.*

[262] *Id.*

[263] *Id.*

[264] OHIO REV. CODE ANN. § 307.79 (West 2010).

order immediately.[265] However, if the construction site has a permit, but is in violation of that permit, SWCDs may not issue a stop-work order until they have issued the construction site two NOVs and then obtained permission from the county prosecutor.[266] After issuing the first NOV, the SWCDs must give the construction site thirty days to remedy before issuing the second NOV.[267] After issuing the second NOV, the SWCDs must give the construction site an additional fifteen days to remedy before pursuing the stop-work order.[268]

5. Ohio EPA Issuing Stop-work Orders Through Local Governments

One way Ohio EPA inspectors can issue stop-work orders is indirectly through local governments. After finding a violation, Ohio EPA inspectors may ask the local government to issue a stop-work order.[269] Local governments are not actually required to issue those stop-work orders.[270] However, Ohio EPA inspectors are normally able to convince the local governments of the importance of issuing them.[271]

6. Problems with Stop-work Orders

Even if the Ohio EPA had the authority to issue stop-work orders, they are still not the perfect enforcement method. One problem is that the stop-work order does not compel the construction company to return to compliance. It merely prevents it from continuing construction until it comes into compliance. In a vibrant economy, construction companies would have economic pressure to finish their projects. However, in a slow economy it may be easier for the construction company to just declare bankruptcy and abandon the project and the property. Because many construction companies are created only for a single project,[272] when the company dissolves no one is left accountable.[273] Ohio EPA inspectors have seen this exact situation.[274] This problem is solved by tying general contractors to the NPDES permit. This can be accomplished easily by requiring general contractors to obtain a license and then requiring the licensee to obtain the NPDES permit. The Ohio EPA could then prevent general contractors from obtaining any new NPDES permit when any of their current construction sites is under a stop-work order.

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[265] *Id.*

[266] *Id.*

[267] *Id.*

[268] *Id.*

[269] Bogoevski Interview, *supra* note 76.

[270] *Id.*

[271] *Id.*

[272] *Id.*

[273] *Id.*

[274] *Id.*

7. The Legislation Should be Amended

Despite the problems discussed above, the O.R.C. should be amended to give the Ohio EPA the authority to issue stop-work orders. Opponents may argue this gives the Ohio EPA too much authority. Opponents may also argue that Ohio EPA could abuse its authority and use it to delay unwanted projects that are not in significant noncompliance. However, giving the Ohio EPA the authority to issue stop-work orders is not unreasonable because local governments and SWCDs already have this authority. With the authority to issue stop-work orders, the Ohio EPA can prevent construction sites from writing off fines as a mere businesses expense. The Ohio EPA would be able to prevent construction sites from continuing to operate in violation of their NPDES permits. Construction companies will take penalties more seriously when those penalties start interfering with their businesses. While the Ohio EPA can already issue stop-work orders through the local governments, the local governments are reluctant to issue stop-work orders because they are trying to attract business and development. SWCDs, while more willing to issue stop-work orders, must wait forty-five days in order to do so. Furthermore, SWCDs only have authority in unincorporated areas. Therefore, Ohio EPA needs its own authority to issue stop-work orders.

VIII. CONCLUSION

The Learned Hand Formula determines what a reasonable person would do. Likewise, construction sites will act reasonably. Construction sites are not going to follow environmental laws out of the goodness of their own hearts. Whether consciously or not, construction sites are applying the Learned Hand Formula and they are reaching the conclusion that it is cheaper to violate their NPDES permits. This is why 95% of construction sites are in violation of their NPDES permits.[275] On top of all the ecological damage, sediment and erosion causes $7 billion in damages every year in the United States.[276] If the construction companies were paying that bill they would go above and beyond complying with their NPDES permits. But they are not paying that bill. The public is paying that bill.[277] The cost needs to be shifted back to the construction companies. Fines will not work because the Ohio EPA does not have the resources to initiate enough formal enforcement actions. The probably of a violator being fined is only 0.5%.[278] The average fine per construction site from significant enforcement actions brought by the U.S. EPA is only $10,704.[279] That means the average cost of noncompliance is only $53. The U.S. EPA cannot raise their fines to a sufficient amount because it follows a flawed penalty policy. The Ohio EPA is in the same position.

Current legislation gives the Ohio EPA the authority to use some non-monetary enforcement methods, such as, requesting preliminary injunctions and requiring violators to obtain individual permits. However, the Ohio EPA needs the authority to use non-monetary enforcement methods that have more immediate results and a

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[275] *See supra* Part V.

[276] *See supra* Part II.

[277] *See supra* Part II.

[278] *See supra* Part V.A.

[279] *See supra* Part V.B.

greater impact on violators. Ohio EPA inspectors have more limited enforcement authority than local governments and county agencies. To effectively enforce the construction general NPDES permit, the Ohio EPA needs the authority to say, "If you do not comply, then you do not build!"